PROJECT CHINA STONE

Socio-Economic Impact Assessment Report

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SOCIO-ECONOMIC IMPACT ASSESSMENT

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

LIST OF FIGURES

LIST OF APPENDICES

ABBREVIATIONS LIST

ABS	Australian Bureau of Statistics
Adani Mining	Adani Mining Pty Ltd
AIPP	Australian Industry Participation Plan
ATSI	Aboriginal and Torres Strait Islander
AUD	Australian Dollar
BIBO	Bus-In Bus-Out
CCM&RP	Carmichael Coal Mine and Rail Project
CEW	Construction and Early Works
CGE	Computable General Equilibrium
CHPP	Coal Handling and Preparation Plant
CIE	Centre for International Economics
Code of Practice	*Queensland Resource and Energy Sector Code of Practice for Local Content*
CTNC	Charters Towers Neighbourhood Centre
CTRC	Charters Towers Regional Council
DATSIMA	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs
DETE	Department of Education, Training and Employment
DIDO	Drive-In Drive-Out
DSDIP	Department of State Development, Infrastructure and Planning
DTTC	Dalrymple Trade Training Centre
ECIA	Economic Impact Analysis
EIS	Environmental Impact Assessment
ERMP	Emergency Response Management Plan
FFW	Fitness for Work
FIFO	Fly-In Fly-Out
FTE	Full Time Equivalent
GBCIF	Galilee Basin Coal Infrastructure Framework
GBDS	Galilee Basin Development Strategy
GBSDA	Galilee Basin State Development Area
GCCSA	Greater Capital City Statistical Area
GDP	Gross Domestic Product
GRP	Gross Regional Product
GSP	Gross State Product
ICN	Industry Capability Network
IPP	Indigenous Participation Plan
IRC	Isaac Regional Council
LGA	Local Government Area
LIPS	Local Industry Participation Strategy
M	Million
MacMines	MacMines Austasia Pty Ltd
MIW	Mackay, Isaac and Whitsunday
Mt	Million tonnes
Mtpa	Million tonnes per annum
NQRSC	North Queensland Resources Supply Chain Project

NRW	Non-resident worker
ODV	Over-dimensional vehicle
OESR	Office for Statistical and Economic Research
PHIDU	Public Health Information Development Unit
PWD	Persons with a disability
PY	Project Year
QAS	Queensland Ambulance Service
QFRS	Queensland Fire and Rescue Service
QGSO	Queensland Government Statistician's Office
QPS	Queensland Police Service
QRC	Queensland Resources Council
RAAG	Road Accident Action Group
RDA	Regional Development Australia
RFDS	Royal Flying Doctor Service
RMTSC	Rural Multi-Tenant Service Centre
ROM	Run-Of-Mine
RTA	Residential Tenancies Authority
RTO	Registered training organisation
SA	Statistical Area
SA1	Statistical Area Level 1
SA4	Statistical Area Level 4
SCS	Stakeholder Communications Strategy
SEQ	South-East Queensland
SHS	State High School
SIA	Socio-Economic Impact Assessment
SIA Guideline	*Social Impact Assessment Guideline*
The project	Project China Stone
The proponent	MacMines Austasia Pty Ltd
TMP	Traffic Management Plan
TMR	Department of Transport and Main Roads
TOR	Terms of Reference
TSP	Training and Skilling Plan
UCL	Urban Centre / Locality
USD	United States Dollar
WBB	Wide Bay Burnett
WHS Act	*Work Health and Safety Act 2011*

PROJECT CHINA STONE
SOCIO-ECONOMIC IMPACT ASSESSMENT

for
MacMines Austasia Pty Ltd

1 INTRODUCTION

Hansen Bailey was commissioned by MacMines Austasia Pty Ltd (the proponent) to complete a Socio-Economic Impact Assessment (SIA) as part of the Environmental Impact Statement (EIS) for Project China Stone (the project). An economic impact analysis (ECIA) of the project was conducted by The Centre for International Economics (CIE) as part of the EIS. The findings of the ECIA are documented in the EIS Economic Analysis Report (Appendix A) and relevant findings of the economic analysis have been incorporated into the SIA.

1.1 THE PROJECT

1.1.1 Project Location

The project site is remote, being located approximately 270 km south of Townsville and 300 km west of Mackay at the northern end of the Galilee Basin (Figure 1). The closest townships are Charters Towers, approximately 285 km by road to the north, and Clermont, approximately 260 km by road to the south-east. The project site is at the western limit of the Isaac Local Government Area (LGA) and adjoins the Charters Towers LGA to the west. The project site comprises approximately 20,000 ha of well vegetated land, with low-lying scrub in the south and east and a densely vegetated ridgeline, known as 'Darkies Range', running north to south through the western portion of the site.

The Carmichael Coal Mine and Rail Project (CCM&RP) is situated directly south of and adjacent to the project site (Figure 2). The CCM&RP is a similar size to the project and will likely give rise to cumulative impacts. Power for the CCM&RP is proposed to be supplied by the proposed Moray Power Station Project which is situated approximately 23 km to the south of the project site, within the Galilee Basin State Development Area (GBSDA) and adjoining the boundary of the CCM&RP (Figure 2).

The project site is currently used for cattle grazing and coal exploration. There is no significant built infrastructure located on the project site. The project site is traversed by a number of unsealed farm access tracks and exploration tracks. Other minor farm infrastructure present within the project site includes various stock fences and farm dams.

Access to the project site is via the Gregory Developmental Road and the Moray-Carmichael Road.

1.1.2 Project Overview

The project involves the construction and operation of a large-scale coal mine on a greenfield site in Central Queensland. The mine will produce up to approximately 55 million tonnes per annum (Mtpa) of Run of Mine (ROM) thermal coal. Coal will be mined using both open cut and underground mining methods (Figure 3). Open cut mining operations will involve multiple draglines and truck and shovel pre-stripping. Underground mining will involve up to three operating longwalls. Coal will be washed and processed on site and product coal will be transported from site by rail. It is anticipated that mine construction will commence in 2016 and the mine life will be in the order of 50 years.

The majority of the mine infrastructure will be located in the eastern portion of the project site (Figure 3). Mine infrastructure will include coal handling and preparation plants (CHPPs), stockpiles, conveyors, rail loop and train loading facilities, workshops, dams, tailings storage facility and a power station.

The project workforce will vary over the life of the project. The peak workforce during the construction and operations phases will be approximately 3,900 and 3,400 persons, respectively. A workforce accommodation village and private airstrip for the transport of mine employees are proposed to be located in the south-eastern part of the project site (Figures 3 and 4). Section 4 provides further information in relation to the project workforce and workforce management.

The scope of this SIA is restricted to assessing activities that are proposed to be undertaken within the project site and no off-lease activities are considered in this assessment.

1.1.3 Land Ownership

The project site is located across three large rural properties:

- Hyde Park;
- Dooyne; and
- Moray Downs.

The Moonoomoo property adjoins the south-western boundary of the project site. All four properties are owned by separate parties and are used primarily for cattle grazing.

There is only one family, consisting of two people, who currently reside on land directly affected by the project. However, their primary residence is located outside of the project site.

Land ownership within and adjoining the project site is illustrated in Figure 5 and discussed in detail in the EIS Land Use Section.

1.2 PROJECT PROPONENT

The proponent for the project is MacMines Austasia Pty Ltd (MacMines). MacMines was established in Queensland in 1999. MacMines' current interests include active coal exploration areas in central Queensland. MacMines is wholly owned by the Yao family, and is a related entity of Shanxi Meijin Energy Group Limited.

1.3 PURPOSE AND SCOPE OF THE DOCUMENT

1.3.1 Purpose of the Document

This SIA documents the socio-economic impacts associated with the project. The report describes the impact assessment methodology used, provides a baseline of the existing setting relevant to the assessment, presents the results of the impact assessment and describes the proponent's commitments to enhance potential positive impacts (opportunities) and avoid or manage the adverse socio-economic impacts of the project. In doing so, the SIA demonstrates compliance with the relevant regulatory requirements relating to the content and methodology for SIAs in Queensland (Section 3.1).

1.3.2 Scope of Work

The scope of this SIA is to:

- Predict and describe the potential direct socio-economic impacts and opportunities, including cumulative impacts and opportunities, associated with the project;
- Identify and describe the management actions and strategies to address predicted socio-economic impacts; and
- Develop a framework for monitoring and reporting on the management of potential socio-economic impacts associated with the project.

This SIA focuses on the potential direct socio-economic impacts associated with the project, specifically those related to:

- Population growth:
- Employment and labour market dynamics;

- Employee health and wellbeing;
- Regional development;
- Community liveability;
- Community infrastructure and services; and
- Housing and accommodation.

Cumulative impacts are also discussed.

Issues considered in detail in the SIA reflect the outcomes of a risk assessment conducted as a component of the SIA process. The project's remote location from any nearby communities (referred to as host communities) necessarily informs the proposed workforce employment arrangements (long distance commuting) and the preferred accommodation arrangements (on-site accommodation village). Therefore, the more typical SIA issues of housing and infrastructure provision in host communities were not identified in the risk assessment as areas of moderate to high risk and are therefore not considered to require detailed assessment.

Further, the scope of the SIA reflects the remote location of the project site, the workforce employment arrangements, the surrounding land uses and the scale of nearby mining development, namely the proposed CCM&RP. In this regard the SIA considers the potential direct impacts (including cumulative) of the project at the home base locations of the project workforce as well as on-site.

Consistent with advice from the Department of State Development (DSD), the SIA considers the impacts associated with the first 20 years of operation, acknowledging the limitations associated with predicting social impacts beyond this period. Mine closure and mine rehabilitation are therefore not considered in any detail in the SIA, however these elements have been described elsewhere in the EIS.

Consultation with relevant stakeholders was inherent in each of the main components of the SIA scope. The findings of the consultation process are discussed in the EIS Consultation Section.

1.4 DOCUMENT STRUCTURE

Sections 1 to 5 of the SIA describe the setting and methodology, including management actions. Sections 6 and 7 address the potential risks and opportunities of the project, and Section 8 presents the SIA conclusions.

The SIA is structured as follows:

- Section 1 – Introduction (this section) – provides an overview of the project and outlines the scope of work for the SIA;
- Section 2 – Project Setting – provides an overview of the existing local and regional socio-economic environment within which the project is located and the governance and policy framework in which the project will occur;
- Section 3 – Methodology – defines the SIA Areas of Influence and provides a detailed explanation of the methodology adopted for the SIA;
- Section 4 – Project Socio-Economic Characteristics – presents the workforce and other characteristics of the project relevant to the assessment of socio-economic impacts;
- Section 5 – Profile of the Areas of Influence – summarises the key characteristics of the project Areas of Influence to inform the prediction and assessment of socio-economic impacts;
- Section 6 – Potential Social Impacts and Opportunities – describes the potential socio-economic impacts and opportunities of the project identified as moderate to high risks through the risk assessment process;
- Section 7 – Management Strategies and Monitoring Approach – details the proposed strategies to avoid or manage project impacts and the mechanisms for monitoring progress of these management strategies;
- Section 8 – Conclusions;
- Section 9 – References;
- Appendix A – Economic Impact Analysis Report – documents the economic benefits and impacts of the project;
- Appendix B – Baseline Statistical Profile – provides detailed statistical data and qualitative analysis of the Areas of Influence to inform the SIA profiling and assessment of potential socio-economic impacts;
- Appendix C – Risk Assessment Summary Tables – presents the outcomes of the risk assessment;
- Appendix D – Labour Market Study – provides the background data and analysis that informed the selection of workforce recruitment locations and workforce home base locations for the project; and
- Appendix E – Business Capability Audit Summary – provides a summary of the results of the small business capability audit conducted for the project.

2 PROJECT SETTING

This section provides a brief overview of the project geographic and policy context and includes introductory discussion of the mining related socio-economic issues currently prevalent across the Galilee Basin. The purpose of this section is to assist the reader in understanding the context in which the SIA methodology has been defined and the project assessed.

2.1 GEOGRAPHIC SETTING

2.1.1 Local Setting

The project site is remote and located in the north-western extent of the Isaac LGA, adjacent to the Charters Towers LGA (Figure 6) and within the Galilee Basin coal resource area (Galilee Basin) (Figure 1).

The project is one of several coal mining projects in the Galilee Basin and is located immediately north of the CCM&RP (Figure 2). The CCM&RP involves the development of a 60 Mtpa underground and open cut coal mine. The proponent for the CCM&RP is Adani Mining Pty Ltd (Adani Mining). The CCM&RP received Queensland Government approval in May 2014.

There are currently no major power or water infrastructure connections to the project site. The project site is accessible via the Gregory Developmental Road, a state-owned, two-lane sealed and unsealed road running from Georgetown in the north, through Charters Towers and south to Clermont. There are no towns along the 350 km stretch of the Gregory Developmental Road between Charters Towers and Clermont; only a roadhouse and service station known as the Belyando Crossing Roadhouse, accessed from the project site via 160 km of unsealed property access roads.

2.1.2 Galilee Basin Context

The Galilee Basin is located west of the Bowen Basin (Figure 1) and covers an area of approximately 247,000 km^2 (DSDIP 2013a).

While the Bowen Basin has been the epicentre of a boom in resource extraction over the past decade, to date, the Galilee Basin has remained undeveloped. This is in part attributable to the significant investment required in rail and port infrastructure. In 2013 the Queensland Government released the Galilee Basin Development Strategy (GBDS) highlighting the state's desire to encourage growth in the region:

> *"The Queensland Government is aware of the long-term economic benefits that opening up the Galilee Basin to mining would bring to Queensland and is doing everything possible to assist in the development of this important region*" (DSDIP 2013a).

There are currently no operating mines in the Galilee Basin. Table 1 summarises the mine projects approved or in the approvals pipeline that are located in the Galilee Basin. The location of these projects is shown in Figure 2.

Table 1
Proposed Galilee Basin Projects

Project	Proponent	Local Government Area	Expected construction commencement	Peak Expected production (Mtpa)	Peak Operations employment
Northern Galilee Basin					
CCM&RP	Adani Mining Pty Ltd	Isaac Charters Towers	2016	60.0	3,800
China Stone	MacMines Austasia Pty Ltd	Isaac	2016	55.0	3,391
Southern Galilee Basin					
Alpha Coal	Hancock Coal Pty Ltd, Hancock Alpha West Pty Ltd and Hancock Coal Infrastructure Pty Ltd	Barcaldine	2017	30.0	1,970
Galilee Coal	Waratah Coal Pty Ltd	Barcaldine	2017	40.0	2,460
Kevin's Corner	Hancock Galilee Pty Ltd	Barcaldine	2018	30.0	1,600
South Galilee Coal	AMCI (Alpha) Pty Ltd and Alpha Coal Pty Ltd	Barcaldine	2017	17.0	1,290

Source: DNRM 2014

Project China Stone and the CCM&RP are located at the northern end of the Galilee Basin. The remaining projects listed in Table 1 are all located at the southern end of the Galilee Basin. There is over 125 km between Project China Stone and the southern Galilee Basin projects. Consequently, the southern Galilee Basin projects have a distinctly different social setting to the northern Galilee Basin projects. In particular, the southern Galilee Basin projects have different transport and supply chain routes and are also located in proximity to an established rural township (Alpha) that will be directly impacted by these projects. In

contrast, the northern Galilee Basin projects are remotely located with no established local townships in proximity.

As a result of these factors, the potential for significant cumulative social impacts between the project and the southern Galilee Basin projects is negligible. The potential cumulative social impacts of the project are, therefore, limited to those related to the adjacent CCM&RP and the associated Moray Power Station Project, which is proposed to supply power to the CCM&RP.

While the recent slowdown in the mining industry has led to a decrease in the severity of the cumulative impacts associated with mining, the project's socio-economic impacts have been conservatively assessed in a context of high mining-sector growth. Given the long-term nature of the project (in the order of 50 years) and the cyclical nature of mining, it is considered likely that a period of high mining-sector growth will again occur during the mine life. The conservative approach to the assessment of socio-economic impacts therefore identifies the greatest potential socio-economic impacts of the project.

2.1.3 Bowen Basin Context

Coal mine development during the recent mining boom was predominantly focused on the established Bowen Basin to the east of the project area (Figure 1). The Bowen Basin includes the local government areas of Whitsunday, Isaac, Central Highlands and Banana. The project is proposed in a context of extensive coal mining operations in the Bowen Basin, which have resulted in significant social and economic structural changes for the communities within this geographical area.

As of September 2014 there were:

- 50 operating coal mines in Queensland, of which 42 were located in the Bowen Basin;
- Two coal mines under construction in Queensland, both within the Bowen Basin; and
- 43 projects in the advanced phases of the approvals process, of which 28 were in the Bowen Basin and five were in the Galilee Basin (DNRM 2014).

2.2 POLICY AND GOVERNANCE SETTING

The decade-long mining boom in Australia, which began in 2003, resulted in the rapid expansion of mining projects in regional and rural areas. This expansion resulted in significant social and economic impacts on nearby towns, which lacked the population and infrastructure to successfully accommodate the boom in industry. In response to the impacts of the mining boom on communities throughout Queensland's mining regions, federal, state and local governments, as well as non-government organisations and business groups sought to implement policies which would ease the burdens on mining communities and

allow for the regulation of socio-economic impacts associated with the boom. Plans, policies and strategies developed after this mining boom period reflect the desire to actively manage the impacts of mining on regional communities.

2.2.1 Local Government

As previously described, the project is located within the Isaac LGA. The proposed Moray Power Station and most of the CCM&RP project site are also located within the Isaac LGA. The Isaac LGA encompasses approximately 59,000 km^2 and extends 400 km west of the coastal communities of Carmila and St Lawrence, and incorporates the resource communities of Moranbah, Middlemount, Dysart and Clermont (Figure 6).

The Isaac Regional Council (IRC) is a 'divided' council with eight divisional Councillors and a Mayor. The project site is located within Division 1 of the IRC, and Deputy Mayor Cr Dale Appleton is the Divisional Councillor.

The Isaac LGA experienced significant social and infrastructure pressures as a result of the mining boom and continues to pursue sustainable growth outside of the fly-in/fly-out (FIFO) mining industry. With the recent slow-down in the mining industry, the Isaac LGA has been heavily impacted, particularly in relation to the reduction in workforce size at a number of nearby mines. The IRC's community plan, the *Isaac Region 2020 Vision 2009-2019* (IRC 2009), recognises mining as a major contributor to the economic development of the region, but focuses primarily on economic diversification and lifestyle improvements as major goals.

The project site borders the Charters Towers LGA. The economy of the Charters Towers LGA is less reliant on the mining sector and as such, the community plan developed by the Charters Towers Regional Council (CTRC) for the Charters Towers LGA, *Our Region, Our Future 2035: Community Plan 2011-2035* (CTRC 2011), is centred on increasing economic growth rather than managing diversification.

2.2.2 Regional Governance

This section briefly describes the state-led regional planning initiatives, federally-funded regional development and a range of smaller schemes and strategies which address the growth and development of the region in which the project is located.

Regional Planning

The project is located in the Mackay Isaac and Whitsunday (MIW) Regional Planning Area (which comprises the Mackay, Isaac and Whitsunday LGAs – refer Figure 6). The planning for future development in the MIW Region is guided by the provisions of the MIW Regional Plan (DSDIP 2012). The MIW Regional Plan aims to establish a vision and direction for growth in the Mackay region. The MIW Regional Plan recognises the impacts that mining

sector growth has had on the region and seeks to establish a sustainable economy and diversify lifestyles in the region. The plan notes:

> *"A significant challenge for the region is to develop greater industry diversification to create resilient communities. Strengthening the economy through diversification and long-term planning will build a more robust economic base and provide a wider range of employment and economic opportunities, improving the long-term economic sustainability of the region."* (DSDIP 2012)

The MIW Regional Plan also notes increased pressure on services as a result of FIFO workforces in the region and safety issues on the Peak Downs Highway as challenges resulting from the mining sector.

The MIW Regional Plan was last updated in 2012. DSDIP is in the process of releasing a new generation of regional plans designed to align with the state's policy interests and provide a unified framework for regional planning. The MIW Regional Plan is still to be updated to align with this process.

Regional Development

The State and Federal governments jointly fund an Australia-wide network of Regional Development Australia (RDA) committees. RDA committees are locally managed, community-based organisations which:

- Provide input to the federal, state and local governments on regional development issues and priorities;
- Promote investment and regional prosperity; and
- Raise awareness of programs and services available to regional communities.

The RDA committees of direct relevance to the project are:

- RDA Mackay-Isaac-Whitsunday (RDA MIW);
- RDA Wide Bay Burnett (RDA WBB); and
- RDA Townsville and North West.

The project is located within the area of the RDA MIW. The RDA MIW *Regional Roadmap 2013-2016* defines the planning priorities for the region (RDA MIW 2013). The roadmap sets out the economic, environmental and social vision for the region, articulates the drivers of change, identifies strengths, opportunities and weaknesses and lists priorities for action.

In 2013, the RDA committees of MIW, Townsville and North West, Fitzroy and Central West, and Far North Queensland and Torres Strait released a *Northern Queensland Strategy* (RDA 2013). The purpose of this strategy was to identify and capitalise upon cross-regional opportunities. Five key opportunities were presented for encouraging cross-regional growth:

- Developing road, energy and water infrastructure that builds greater capacity for industry and communities;
- An aviation strategy for the expansion of opportunities such as food and agricultural exports, inbound tourism, servicing of mines and better access for communities;
- Building more disaster-resilient public infrastructure;
- Well-planned workforces with opportunities for all, including skill-sharing across industries such as agriculture, mining, construction and tourism; and
- Social infrastructure that builds community capacity and liveability to encourage increased populations and wellbeing in Northern Queensland.

Regional Roadmaps and the *Northern Queensland Strategy* are used to inform the Federal and State governments of regional priorities, strategies and opportunities to help build sustainable communities. Both of these documents are essential tools when predicting potential social impacts associated with the project and determining desired management outcomes and supporting strategies. Relevant RDA committees were consulted during the preparation of the EIS.

FIFO Coordinator Program

In response to the increasing utilisation of FIFO employment methods by the resources industry, the federal government funded a pilot FIFO Coordinator position in Cairns to link jobseekers with mining employment opportunities. FIFO Coordinator positions have since also been implemented in the Wide Bay and Gold Coast Regions. FIFO Coordinators were consulted during the preparation of the EIS.

2.2.3 State Government

The Queensland Government has acknowledged the resources industry as one of the “four pillars” of the state economy, along with construction, tourism and agriculture. In line with this approach, a number of strategies have been implemented to address the impacts of the resources industry on resource towns and manage the development of the Galilee Basin.

Social Impact Assessment Reform

DSD is responsible for driving the economic development of Queensland. Reducing red and green tape for the resources sector has been a strategic priority for DSDIP. A component of this process has been the introduction in July 2013 of a new *Social Impact Assessment Guideline* (SIA Guideline) (DSDIP 2013b) and a framework document *Managing the Impacts*

of Major Projects in Resource Communities (DSDIP 2013c). The SIA Guideline responds to the significant growth in cumulative issues affecting resource communities in Queensland and the need for a coordinated and adaptive approach to impact management. The SIA Guideline recognises the difficulties associated with the assessment of cumulative impacts and the need to clarify the assessment of high-priority impacts in order to achieve positive outcomes for the communities affected by mining projects. The SIA for the project has been prepared in accordance with the SIA Guideline.

Galilee Basin Development Strategy

The GBDS was released by the Queensland Government in November 2013 (DSDIP 2013a). The GBDS recognises the lack of essential infrastructure confronting mining-sector proponents wishing to develop mining projects in the Galilee Basin and aims to lower up-front development costs associated with infrastructure provision and provide certainty for investment in the region. The Queensland Government has committed to reducing approvals timeframes by up to 50% and establishing the GBSDA in order to streamline project approvals.

Galilee Basin State Development Area

The GBSDA was declared by the state government in June 2014, and comprises two 500 m wide corridors between the Port of Abbot Point and the northern and southern Galilee Basin, respectively (Figure 2). The GBSDA provides a coordinated method of establishing rail links to new mining projects in the Galilee Basin and aims to minimise impacts on landholders and the environment. The timing of the construction of these rail links is dependent upon the proponents of the rail lines. The off-lease component of the project rail line is likely to extend into the GBSDA.

Galilee Basin Coal Infrastructure Framework

The Queensland Government has also developed the Galilee Basin Coal Infrastructure Framework (GBCIF) to coordinate the provision of infrastructure to the Galilee Basin by private and public entities. Potential infrastructure developments included in the GBCIF include power, water, roads, rail and ports.

North Queensland Resources Supply Chain Project

The North Queensland Resources Supply Chain Project (NQRSC) aims to establish a coordinated approach to infrastructure planning in the supply chain corridor between Mt Isa and Townsville. The NQRSC includes the following six strategies detailed to improve the efficiency of the supply chain corridor:

- Improve strategic planning for the NQRSC;
- Address identified infrastructure bottlenecks to increase efficiency;
- Investigate options for improved berthing operations at Townsville Port;
- Improve day of operations oversight on the NQRSC;

- Enhance long term network planning between operators; and
- Support new entrants into the supply chain.

RegionsQ Project

The RegionsQ Project comprises a framework, forums, action plan and showcase, which aim to foster growth and development in Queensland's regions. The RegionsQ Framework identifies six priority areas for regional development (DSDIP 2014a,b):

- Planning for development in regional Queensland;
- Infrastructure services for regional growth;
- Facilitating business in regional Queensland;
- Growing regions: capitalising on economic drivers;
- Attracting and retaining residents in regional Queensland; and
- Communicating and promoting the regions' potential.

The RegionsQ Framework identifies Projects of Regional Significance, which have the capacity to deliver significant benefits to regions through the application of targeted place-based coordination. Development of the Galilee Basin is identified as a Project of Regional Significance and the RegionsQ Framework outlines key state government actions proposed to assist with the development of the Galilee Basin as follows:

- Implement strategies to lower upfront costs and stimulate development across the basin's southern and central coal resources;
- Develop streamlined solutions for water, power and rail and comprehensive infrastructure facilitation for the Galilee Basin region;
- Simplify approvals and reduce red tape for mining proponents. Support will be offered to the first companies who operate in the Galilee Basin, who the government considers will play a vital role in opening up the southern and central Galilee Basin coal resources;
- Undertake a series of Galilee Basin development roundtables in regional areas to identify and address opportunities for collaboration; and
- Promoting investment opportunities and providing facilitation and case management assistance to companies seeking to establish or expand (DSDIP 2014a,b).

A comprehensive RegionsQ Action Plan is anticipated to be released in late 2014.

Royalties for the Regions

To address the impact of non-resident populations on the economic and servicing abilities of resource towns, the Queensland Government introduced the Royalties for the Regions program in 2012. This program is a competitive grants program that invests in community

infrastructure, roads and transport projects, flood mitigation infrastructure, and state-led infrastructure projects. Over a four-year period from 2012, the program will invest $495 million in resource communities. The funding will increase to $200 million a year from 2016 onwards (DSDIP 2014a). The Royalties for the Regions program is now in its third round of funding. The program is now open to all regional councils in Queensland, having previously been confined to a select group of regional councils. More than 20 regional councils across Queensland have benefited from Royalties for the Regions funding.

With the release of the Queensland Government's new RegionsQ Framework, the Royalties for the Regions program is being refocussed to help achieve the RegionsQ priorities. In Round 4 of the program, State agencies can also apply for funding for strategic infrastructure projects (DSDIP 2014b).

Queensland Parliamentary and Ministerial FIFO Inquiries

In 2015 the State government launched a Parliamentary inquiry into FIFO and other long distance commuting work practices in Queensland. At the same time the Queensland Minister for State Development initiated a separate review of FIFO mines where the operation is located near a resource town or regional community. The Ministerial review will examine existing 100% FIFO workforce approvals, as well as those mines where there is a predominantly FIFO workforce (90% or higher). The panel established for the Ministerial review will also examine the economic impact of FIFO work practices in regional resource communities and also the communities where the FIFO workers live. This review is separate to, but will support, the Queensland Parliamentary inquiry into FIFO workers.

The Ministerial review is due for completion at the end of July 2015. The final report from the Parliamentary inquiry is due for release on Wednesday 30 September 2015.

2.2.4 Federal Government

The FIFO Inquiry was commissioned by the Federal government in 2011 to investigate the impacts of FIFO and long distance commuting workforces on regional and resource communities. The inquiry received over 232 submissions and included 26 public hearings involving over 275 witnesses throughout 2011 and 2012.

The report which resulted from the FIFO Inquiry, *Cancer of the Bush or Salvation of our Cities* (House of Representatives 2013), made 21 recommendations to proponents and federal, state and local governments. The majority of recommendations related to increasing the availability of data regarding FIFO workforces and the commissioning of further research studies to ascertain the empirical experiences of resource communities. The recommendations from the FIFO Inquiry have been considered in the prediction of project impacts and development of management strategies.

3 METHODOLOGY

This section describes the methodology adopted for the project SIA and defines the project Areas of Influence for consideration in the SIA.

3.1 TERMS OF REFERENCE AND GUIDELINES

The SIA has been undertaken to satisfy the requirements of the EIS Terms of Reference (TOR) issued by the Coordinator General (EIS TOR Section).

The SIA methodology is consistent with the requirements of the SIA Guideline (as discussed in Section 2.2.3), and the framework document, *Managing the Impacts of Major Projects in Resource Communities* (DSDIP 2013c). Table 2 summarises the key requirements of the SIA Guideline and outlines where these requirements are addressed in the SIA.

Table 2
SIA Guideline Requirements

SIA Guideline Requirement	SIA Reference
Core SIA Principles	
SIA will only assess impacts (both beneficial and detrimental) arising from the project and cumulatively with other developments in the region. Proponents are expected to mitigate impacts that are directly related to their project.	Section 6
Social impact mitigation incorporates the principles of adaptive management.	Section 6, Section 7
SIA covers the full lifecycle of the project to the extent possible.	Section 4
SIA is based on the best data available.	Section 4, Section 5
SIA will identify strategies to capitalise on social opportunities and to avoid, manage, mitigate or offset the predicted impacts arising from the project.	Section 6, Section 7
Communities of interest will be engaged in a meaningful way during the development of the SIA, recognising local knowledge, experience, customs and values. Community participation should continue across the project lifecycle.	Section 3, Section 7 EIS Consultation Section
Social Impact Assessment	
SIA identifies and assesses the project's social impacts that are directly related to the project.	Section 6
SIA contains a definition of the stakeholders and impacted communities of interest.	Section 3
SIA contains a social baseline study of the impacted communities of interest.	Section 5, Appendix B
SIA contains an overview of state government legislation and policies that complement the mitigation measures for social impacts that are directly related to the project.	Section 2

SIA Guideline Requirement	SIA Reference
SIA contains an explanation of methods used to gather information including a description of how the communities of interest were engaged during the development of the SIA.	Section 3
SIA contains identification of potential direct social impacts and prediction of the significance of any impacts and duration and extent of each impact.	Section 6, Appendix C
SIA contains the proponent's proposed enhancement and mitigation measures. The mitigation strategies include: • The impacts documented in the SIA; • Description of the mitigation and management strategies; • Outcomes, performance indicators and targets; • Significant stakeholders; • Timing/timelines; and • Monitoring framework.	Section 6, Section 7
SIA contains the proponent's monitoring framework that informs stakeholders on the progress of the enhancement and mitigation measures.	Section 7

3.2 KEY PHASES

The methodology for the SIA involved the following key phases:

- Phase 1 - Identification of the project Areas of Influence for assessment of socio-economic impacts;
- Phase 2 - Baseline profiling, including community consultation;
- Phase 3 - Impact identification and assessment; and
- Phase 4 - Development of management strategies.

A comprehensive stakeholder consultation program was undertaken as an integral part of the EIS process for the Project. The consultation program included consultation with neighbouring landholders, local, state, and federal government, industry bodies, community groups and other interested parties.

Each key phase of the SIA is discussed in the following sub sections. A brief overview of the EIS consultation process including targeted consultation to inform the SIA is also provided. Further detailed information relating to the EIS consultation process is included in the EIS Consultation Section.

3.3 IDENTIFICATION OF PROJECT SOCIAL AND CULTURAL AREAS OF INFLUENCE

Due to the remote location of the project site and the lack of any nearby local host community, the project Areas of Influence for the SIA was defined by the nature of its relationship to the project as well as the geographical proximity to the project site. Adopting this approach has facilitated the comprehensive assessment of the project's potential impacts.

Table 3 describes the range of factors considered in defining the social and cultural Areas of Influence of the project, consistent with the requirements of the EIS TOR.

Table 3
Project Social and Cultural Areas of Influence

TOR Consideration	Analysis
The potential for social and cultural impacts to occur	The project site is remote. There is no established host community located within close proximity to the project site. The workforce for the project will be employed as a non-resident, long distance commuting workforce and will be accommodated at the on-site workforce accommodation village. The potential social and cultural impacts of the project are therefore most likely to occur: • In the immediate vicinity of the project site, on land within and immediately adjoining the project site; • Within the Isaac and Charters Towers LGAs, as the communities of Clermont and Charters Towers may benefit from local spend associated with the project; • In the Townsville and Mackay Regions as this is where the project's supply chain is likely to extend; and • In the home base locations of the non-resident workforce as this is where employee wages are more likely to be spent and where project induced population growth may occur.
Location of other relevant proposals or projects	There are currently no resource projects operating in the Galilee Basin. The project site adjoins the northern boundary of the CCM&RP site. The CCM&RP received state environmental approval in May 2014. The Moray Power Station Project is located to the south of the project site adjoining the CCM&RP within the GBSDA. The Moray Power Station Project is awaiting government approval. A development application was submitted in December 2014. There are a number of resource projects proposed for the southern Galilee Basin, however these projects are located more than 125km from the project site. The cumulative impacts of the CCM&RP and the Moray Power Station Project are considered in Section 6.9.
Location and types of physical and social infrastructure, settlement and land use patterns	The land use in the area is dominated by grazing. Settlement within and adjoining the project site consists of isolated homesteads associated with rural landholdings. Belyando Crossing is the closest settlement to the project site and is located on the Gregory Developmental Road, approximately 140 km by unsealed property access roads, to the east of the project site. Belyando Crossing consists of a roadhouse and service station, and caravan park. The project site is traversed by a number of unsealed farm access tracks.

TOR Consideration	Analysis
	Other minor farm infrastructure present includes stock fences and farm dams. There are no easements on the site. One family currently resides on land directly affected by the project, however their residence is located beyond the project site boundary.
Social values that might be affected by the project	Given the remote location of the project site, the lack of a nearby host community, and the use of a non-resident, long-distance commuting workforce, the project has a low risk of impacting the social values of the population outside of the area immediately surrounding the project site. The CTRC and the IRC community plans describe the cultural, environmental, economic and social values of the respective communities within each LGA. These values have been considered in the SIA.
Indigenous social and cultural characteristics	There is no defined and separate Aboriginal and Torres Strait Islander (ATSI) community (for example Woorabinda Aboriginal Shire) within the project site or in proximity to the project site. In 2011 there were 962 ATSI people residing in the Charters Towers LGA which is 7.9% of the total LGA population. At the same time there were 602 ATSI people residing in the Isaac LGA, which is 2.7% of the total LGA population. The findings of consultation conducted with landowners for the EIS suggests there is no contemporary use of the project site by ATSI people. The project site is not actively utilised by ATSI people for the collection of flora and/or fauna. The project site includes land that may be subject to native title and is within the Wangan and Jagalingou People's registered native title claim application (Claim No. QC04/6; Federal Court No. QUD85/04). The proponent will negotiate with the Wangan and Jagalingou People, the registered Native Title claimants, in accordance with the requirements of the *Native Title Act 1993* (Commonwealth)

Table 4 presents the rational for the project Areas of Influence based on the analysis presented in Table 3.

Table 4
Rationale for Social and Cultural Areas of Influence

Consideration	Surrounding Area	Local Area	Regional Area	Home Base Locations
	Landholders within and adjoining	**Isaac and Charters Towers LGAs**	**Townsville and Mackay Regions**	**Various**
The 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	✓	✓		

Consideration	Surrounding Area	Local Area	Regional Area	Home Base Locations
	Landholders within and adjoining	**Isaac and Charters Towers LGAs**	**Townsville and Mackay Regions**	**Various**
Indigenous social and cultural characteristics	✓	✓		

The geographic components of the project Areas of Influence for the SIA are described in Table 5.

Table 5
Project Areas of Influence

Areas of Influence	Geographic Components	SIA Figure Reference
Surrounding Area	• Defined as the Australian Bureau of Statistics (ABS) Statistical Areas Level 1 (SA1s) 3133909 and 3146303.	Figure 7
Local Area	• Charters Towers and Isaac LGAs	Figure 6
Regional Area	• Townsville Region consisting of the following LGAs: – Charters Towers – Townsville – Burdekin – Hinchinbrook – Palm Island • Mackay Regions collectively consisting of the following LGA's: – Isaac – Whitsunday – Mackay	Figure 8
Potential Home Base Locations	• South East Queensland (SEQ) Region consisting of: – Brisbane Greater Capital City Statistical Area (Brisbane GCCSA) – Sunshine Coast Region – Gold Coast Region • Wide Bay Region • Townsville Region • Cairns Region	Figure 8

The geographical boundaries of all Regions correspond to the respective Australian Bureau of Statistics (ABS) Statistical Area (SA) boundaries.

Home Base Locations

The potential workforce home base locations were specifically chosen based on their available labour force, sizeable population base and ability to absorb any relatively minor additional population growth that may arise from the project. Their large and diverse economies and their current level of service provision means they are unlikely to be significantly impacted by a single project.

At the time the home base selection work was completed, a number of LGAs within the Regional Area were experiencing cumulative impacts from rapid growth in the surrounding resource sector (e.g. Mackay City and Moranbah). Based on these factors, these communities were not considered preferred home base locations. With the recent downturn in the coal mining industry since the assessment of home base locations was undertaken, the pressure of cumulative mining sector growth on these communities has reduced significantly and it is likely that these centres may have increased available labour force and capacity to accommodate additional residents. If these current market conditions persist, Mackay City would potentially become a preferred home base location for the operations phase workforce. However, it is noted that the town of Moranbah in the Mackay Region, in particular, was not considered an optimum home base location or labour source location for the project due to the size and number of existing mines, as well as future mines proposed in immediate proximity to the township e.g. the Red Hill Project and the Moranbah South Project. It is realistic to expect that mining will persist in the Moranbah area over the long-term and that workers residing in Moranbah would choose employment in close proximity to their residence over employment that requires a significant long distance commute.

Further detail on the selection of home base locations is provided in Section 4.4.5.

3.3.1 Other Areas of Influence

Additional Areas of Influence were identified during project planning to enable the development of accurate project assumptions. These additional areas related to potential labour source regions for the project and supply chains.

Labour Source Locations

A regional labour market assessment (Appendix D) was undertaken for the SIA to determine the potential source of labour for the project. Due to the complexity of labour market data and the assumption that the majority of the workforce would be recruited from within Queensland; interstate and international labour markets were not examined.

The target labour source locations are defined as the statistical regions (SA4s) within Queensland where labour for the project is likely to be sourced. Ultimately the target labour source locations will be affected by labour availability at the time the Construction and Early Works (CEW) phase commences. In the event soft labour market conditions continue then labour is likely to be drawn from existing mining areas e.g. Mackay and Fitzroy Regions

where there is an available and experienced mining workforce. However, if tight labour market conditions are present, it is more likely that labour will be drawn from non-mining areas or centres with significant population, higher rates of unemployment and/or lower labour force participation rates. The target labour source locations for the project are described in Table 6 and illustrated in Figure 8.

Table 6
Labour Source Locations - Component Local Government Areas

Region	Component Local Government Areas
Cairns Region	Cassowary Coast, Cairns Tablelands, Mareeba and Yarrabah
Townsville Region	Townsville, CTRC, Burdekin, Hinchinbrook and Palm Island
Mackay Region	Mackay, Isaac and Whitsunday
Fitzroy Region	Rockhampton, Central Highlands, Gladstone, Banana and Woorabinda
Wide Bay Region	Bundaberg, Fraser Coast, Gympie, South Burnett and North Burnett
SEQ Region, comprising:	
- Brisbane GCCSA	Brisbane, Redlands, Ipswich, Lockyer Valley, Somerset (part of), Moreton Bay, Somerset (part of), Logan and Scenic Rim
- Gold Coast	Gold Coast City
- Sunshine Coast	Noosa, Sunshine Coast

Supply Chain Regions

Expansion in the Queensland mining industry sector has driven growth in the number of businesses servicing the mining industry, the range of services provided and the business turnover. During the CEW and operations phases of the project, the project will provide substantial supply chain opportunities for businesses located along the identified supply chain route. The majority of project procurement is anticipated to occur in the Townsville Region, primarily through Townsville City. However, it is acknowledged that project supplies are also likely to be procured through the Mackay Region which has an established mining industry sector. The supply chain regions for the project are therefore defined as the Townsville Region and the Mackay Region.

3.4 PROFILING THE PROJECT AREAS OF INFLUENCE

Understanding the local and regional socio-economic characteristics of the project Areas of Influence enabled the identification and analysis of project impacts and opportunities. Social profiling was conducted for the Areas of Influence which included the collection and analysis of a comprehensive set of quantitative and qualitative data for a range of social and economic indicators. This approach ensured a thorough understanding of the existing social environment. Information was contextualised by collecting and analysing information at the

state level. Section 5 and Appendix B of this report present a baseline of the socio-economic profile of the project Areas of Influence.

A variety of desktop and consultative sources were used to profile the communities of the project Areas of Influence. The principal sources include:

- Quantitative data sources – ABS data[1], mining industry data and data from the Queensland Government Statistician's Office (QGSO), formerly known as the Office of Economic and Statistical Research (OESR). Figures 6, 7 and 8 illustrate the ABS Census boundaries used to present data for the key geographical locations of the SIA Areas of Influence.
- Literature review – including the findings of the Federal Government FIFO Inquiry, recent EISs prepared for projects in the Galilee Basin, and RDA reports. All literature reviewed for the SIA and referenced herein is documented in Section 9.
- Project specific SIA consultation – including consultation with facility and service providers, industry groups and relevant local governments. Further detailed information relating to the project EIS and SIA consultation is available in the EIS Consultation Section.

Throughout this report, the term "Indigenous" is used in reference to ATSI peoples to ensure tables and charts are kept succinct.

3.5 IMPACT ASSESSMENT

3.5.1 Identification of Socio-economic Impacts

Socio-economic impacts were predicted for the CEW phase and operations phases of the project consistent with the requirements of the SIA Guideline. The duration of the project and the uncertainty surrounding socio-economic conditions in the distant future constrains the accuracy of predicting and assessing socio-economic impacts arising from the project. This SIA, therefore, adopts a medium-term scope and predicts (and assesses) impacts over the first 20 years of the project life, with a commitment to re-assessing the socio-economic baseline and impacts five years prior to the end of this 20-year period. This approach allows for a greater level of accuracy in predicting potential impacts and enables the consideration of changing socio-economic baselines over the life of the project.

Impacts were identified based on the information collected during baseline profiling, the results of stakeholder consultation, and consideration of the cumulative impacts from other developments taking place in the Bowen and Galilee Basins.

[1] All care has been taken to ensure that ABS data presented is accurate, but in some cases totals may not equal 100% or the appropriate total number due to rounding.

Project layout plans and project information were reviewed in detail and considered in the context of the social setting, in order to identify key areas of potential social impact. The following EIS technical studies relevant to the potential socio-economic impacts of the project were also reviewed:

- EIS Visual Amenity Section;
- EIS Noise Report;
- EIS Air Quality Report; and
- EIS Traffic Report.

An economic impact analysis (ECIA) of the project was also conducted as part of the EIS. The findings of the ECIA are documented in the EIS Economic Analysis Report (Appendix A) and relevant findings of the economic analysis have been incorporated into the SIA, and this is discussed further in Section 3.5.3.

The prediction of impacts has been focused on the impacts likely to affect the project Areas of Influence and in particular the Surrounding Area (Figure 7). This includes the towns of Clermont and Charters Towers, as the closest population centres to the project site and the most likely to experience direct impacts. Potential project socio-economic impacts were identified and a list of the potential impacts documented. This SIA focuses on the potential direct social impacts associated with the project, specifically those related to:

- Economic impacts;
- Population and demographic change;
- Employment and labour market dynamics;
- Employee health and wellbeing;
- Regional development;
- Community liveability;
- Social infrastructure and services;
- Landholder and amenity impacts; and
- Housing and accommodation.

Impacts and opportunities associated with the project were identified in accordance with the SIA Guideline. In identifying the impacts and opportunities across each stage of the project, consideration was given to whether the social opportunities and impacts could be accurately, reasonably and reliably attributed to either:

- The project;
- A cumulative impact where the proportion of the impacts of the project can be readily and reasonably forecast and/or separated from the total cumulative impact or opportunity; or
- An existing issue, legacy or cumulative impact which is not a result of the project.

The majority of impacts likely to be experienced in the broader supply chain areas, labour source locations and workforce home base locations are indirect and not distinct in nature, and have only been identified and assessed where practicable as per the SIA Guideline. In the case of home base locations, project induced population growth is likely to be the single most significant driver of social change including changes in housing demand, demand for facilities and services, and changes in liveability. However, it is not possible to quantify the size of any project-induced population growth in the home base locations, as it is not possible to quantify and differentiate between the number of existing residents likely to be employed on the project and the number of people who may move to a home base location to take up employment on the project. It should be noted that multiple potential home base locations were selected to enable the dispersal of the workforce and associated population, thus reducing the potential for any significant population influx into a single location.

Given that population impacts in the home base locations cannot be accurately predicted and are also not likely to be significant, it does not add value to the SIA to include a detailed description of the population, social and economic characteristics of the home base locations and the associated detailed discussion of potential impacts.

3.5.2 Assessment of Socio-Economic Impacts

The SIA Guideline requires the assessment of direct impacts, and cumulative impacts only where they can be apportioned accurately to the project's influence. Therefore, this SIA does not assess indirect impacts or impacts which are cumulative in nature and complex in ascription. This approach allowed for the targeting of high-risk direct impacts rather than low-risk or unlikely impacts, and enabled an effective and accurate impact assessment.

The significance of the impacts and opportunities were identified using a risk matrix consistent with the SIA Guideline (Table 7). Rankings in this risk matrix were assigned following stakeholder consultation and baseline profiling and reflect the objective likelihood of the impact (likelihood) and the compatibility of the impact with subjective values of the communities affected (consequence).

Table 7
Risk Matrix - Assessment of Impact Significance

Likelihood	Consequence of Social Impact			
	Incidental	**Minor**	**Significant**	**Major**
Very Likely	Low	Moderate	High	High
Likely	Low	Moderate	High	High
Possible	Low	Moderate	Moderate	High
Unlikely	Low	Low	Moderate	Moderate
Very Unlikely	Low	Low	Low	Moderate

The identification of likelihood and consequence is based on the definitions in Table 8.

Table 8
Likelihood and Consequence Scales

Likelihood	
Very Likely	Very likely to occur at either a specific stage of the project lifecycle or more broadly
Likely	Likely to occur at either a specific stage of the project lifecycle or more broadly
Possible	Possible to occur at either a specific stage of the project lifecycle or more broadly
Unlikely	Unlikely to occur at either a specific stage of the project lifecycle or more broadly
Very Unlikely	Very unlikely to occur at either a specific stage of the project lifecycle or more broadly
Consequence	
Incidental	Local change only Affect a limited number of persons or groups Affects values held by a small proportion of community Short-term and easily reversible
Minor	Local change and regional change Affects a moderate number of persons or groups Affects values held by moderate proportion of community Short-term and potentially reversible
Significant	Local and regional change Affects a large number of persons or groups Affects values held by large proportion of community Medium-term, difficult to reverse
Major	Local, regional and wider change Affects entire community Affects universally-held value of community Long-term and persistent

The final risk ranking for each issue was determined from Table 7. The appropriate level of required management was determined based on the following definitions:

- Low – monitor and manage as necessary;
- Moderate – actively manage; and
- High – proactively manage.

Positive impacts do not require mitigation. Positive impacts were ranked in order to understand the level of effect these impacts may have on stakeholders, and where possible, enhancement measures were identified.

The findings of the risk-based impacts and opportunities assessment are presented in Appendix C and discussed in Section 6.

3.5.3 Economic Impact Analysis

An ECIA was undertaken for the project by the CIE (Appendix A). This section describes the methodology adopted and the key assumptions underpinning the assessment.

Methodology

The ECIA was conducted using a computable general equilibrium (CGE) model. CGE modelling is conducted by constructing a 'without project' baseline scenario using national and international economic data, then simulating the economic activity of the project to generate the change in state, regional and local economic activity as a result of the project.

A number of data sources were used to construct the 'without project' scenario, including:

- Data from government and international organisations: for example, ABS provides population projections to 2101, International Monetary Fund provides global economic outlook to 2018;
- Historical data: for example, historical performance of productivity improvement by sector may provide indication of future development; and
- Expert opinions and/or global model projections: for example, export demand for Australian goods and services may be informed by a general equilibrium model of the global economy.

Given the labour shortages experienced throughout Queensland at the height of the mining boom in 2012, the ECIA for the project sought to assess a scenario of tight labour supply. This enables the modelling of a conservative scenario of employment benefits, in which the majority of positions created by the project are realised through labour transfers rather than new entrants into the labour force. As a result, the employment benefits demonstrated in the

ECIA are conservative, and likely to increase in times of labour supply surplus, such as that experienced in 2014.

Economic impacts were predicted for the following geographic areas:

- Australia;
- State of Queensland;
- Local Area consisting of the Charters Towers and Isaac LGAs; and
- Regional Area, consisting of the Townsville and Mackay Regions.

National and state economic impacts of the project are identified by imposing the project information as additional shocks to the baseline projection (i.e. the 'without project' scenario). Model-generated results are then expressed as percentage deviations from the baseline. For example, employment results are expressed as a percentage change from the employment levels in the baseline.

There are four sets of variables used to measure the economic impacts of the project at a state and national level:

- Gross domestic product (GDP), gross state product (GSP) and gross regional product (GRP) – measuring the change in aggregate economic activity in the nation, state and regions, respectively;
- National and regional employment;
- Household consumption at national, state and regional level – providing an indicator of net economic welfare changes; and
- Changes in the Federal and State government revenues.

As these results are generated by a general equilibrium model, they represent the full net economic impacts (including both direct and indirect effects).

Identifying local and regional impacts requires apportioning the state impact into relevant regions and local areas. It is important to distinguish between places of economic activities and places where additional income/benefits accrue. For example, the coal mining activity will take place in the Isaac LGA, however the majority of employment and supplies will come from outside the local area, and the associated income would accrue to the workforce place of permanent residence (home base) and the supply sourcing location.

Key Assumptions

Table 9 and Table 10 present the key project related assumptions underpinning the economic modelling. The data presented in Table 9 is an annual average. Further detailed discussion is provided in Appendix A.

Table 9
Key Assumptions for Economic Modelling – Annual Average

Variable	Unit of Measurement	Project Phase and Years			
		CEW	OP1	OP2	DR
		2016-20	2021-46	2047-64	2065-68
Production of coal	Mt	11.74	28.76	5.10	0.00
Sale value	$M	1,097.83	2,689.48	477.26	0.00
Capital expenditure	$M	1,040.04	249.08	0.00	0.00
Operating expenditure	$M	862.91	1,908.48	352.20	0.00
Royalties	$M	76.84	188.26	33.41	0.00
Profit before tax	$M	-884.36	535.25	91.65	0.00
Employment	Head	3,249	3,119	1,221	234

Source: Hansen Bailey
Notes:
CEW Construction and Early Works Phase
OP1 Operations Phase 1
OP2 Operations Phase 2
DR Decommissioning and Rehabilitation Phase

Table 10 summarises the share of employment and expenditure sourced from the local area, the regional area and the state for each of the four project phases. Because the purpose is to apportion the state impact to the local area and the region, the sourcing shares in Table 10 are related to employment and expenditures/supplies from Queensland only. In other words, a 100% share for the state does not necessarily mean all of the employment and/or expenditures will be from Queensland.

Table 10
Sources of Employment and Supplies in Queensland

Geographic Area	Project Phase and Years			
	CEW	**OP1**	**OP2**	**DR**
	2016-20	**2021-47**	**2048-64**	**2065-68**
Employment	***Percentage (%) of Employment***			
Local Area *(Charters Towers and Isaac LGAs)*	6.7	0.9	0.8	0.9[1]
Regional Area *(Mackay and Townsville Regions)*	100.0	25.8	25.0	25.4[1]
State *(Queensland)*	100.0	100.0	100.0	100.0[1]
Expenditure	***Percentage (%) of Supplies***			
Local Area *(Charters Towers and Isaac LGAs)*	7.4	0.7	0.4	N/A
Regional Area *(Mackay and Townsville Regions)*	95.8	73.6	55.1	N/A
State *(Queensland)*	100.0	100.0	100.0	N/A

Source: Hansen Bailey and CIE assumptions (refer Appendix A)
Notes:
CEW Construction and Early Works Phase
OP1 Operations Phase 1
OP2 Operations Phase 2
DR Decommissioning and Rehabilitation Phase
1 Assumes average of Operation Phases

Since the time the ECIA was undertaken, there has been a downtown in the coal mining industry due to falling coal prices which has resulted in softening labour market conditions in Queensland. However, the ECIA findings are considered to remain robust, within the changing economic conditions for the following reasons:

- A key assumption of the ECIA is a highly constrained labour market. The impacts described in the ECIA are therefore considered a worst case scenario i.e. if less constrained labour market conditions were to persist, the project would result in a net increase in jobs.
- Income from the sale of coal used in the ECIA is representative of the 50 year project life and not the year the modeling was conducted. The coal price used in the ECIA needs to reflect the fluctuations that would be expected to occur across this 50 year time period. Income from coal sales is also directly related to the exchange rate (USD/AUD) which adds to the complexity and uncertainty of future long term income predictions.

- Any change in income from the sale of coal (taking into account fluctuations in both the price of coal and the exchange rate) will primarily impact the corporate income tax stream to the Federal government.
- The combination of reduced short term coal price and a softening of the labour market will not result in any significant magnitude of change to the data contained in the ECIA for the purposes of the EIS. Short term changes in dynamic economic factors are inevitable within the timeframe of an EIS approval. However they do not undermine the fundamental economic benefits from a large scale project with a 50 year project life.

3.6 IMPACT MANAGEMENT AND MONITORING

Once potential impacts and opportunities were identified, appropriate strategies to avoid, mitigate or manage adverse impacts were developed and a suitable monitoring program identified.

The identification and refinement of management strategies were underpinned by an outcomes-focussed approach consistent with the requirements of the SIA Guideline. The development of suitable management strategies followed the approach described below:

- Step 1 – Priority social impacts – The priority social impacts to be managed were identified based on the outcomes of the risk assessment process (Section 3.5 and Appendix C).
- Step 2 – Desired management outcomes – The desired management outcomes were defined and documented for each potential impact and opportunity, based on the documented social baseline and the findings of consultation conducted as part of EIS preparation. The desired outcomes articulate the proponent's commitment to impact management (Section 6).
- Step 3 – Barriers – The primary factors potentially inhibiting the achievement of the desired outcomes were identified based on the findings of consultation (Section 6).
- Step 4 – Management measures – Specific actions and strategies were identified that could remove or reduce the barriers identified in Step 3 and thus assist with the achievement of the desired outcomes. These actions related primarily to project design, proponent social management tools and communication protocols, proponent operational procedures and investment and partnerships with the local communities (Section 6 and Section 7).
- Step 5 – Potential partners – The community assets i.e. interest groups, social networks, formal community systems and government and non-government agencies available to remove barriers and/or assist with achieving the desired outcomes were identified (Section 6 and Section 7).

- Step 6 – Residual risk – The proposed mitigation and management strategies were assessed against the potential impacts and opportunities to determine the likelihood of any residual impacts (Appendix C).
- Step 7 – Monitoring – monitoring mechanisms were developed to ensure the ongoing effectiveness of management actions and strategies in responding to the impacts (Section 7).

Consistent with the SIA Guideline, management strategies were based on the following considerations:

- A focus on mitigating direct impacts arising from the project, particularly those identified as high risk in the impact assessment;
- Adopting adaptive management principles in order to be responsive to changes to the social context given the anticipated life of the mine;
- Ensuring alignment with existing management strategies considered by stakeholders as 'benchmarks' established through earlier mine approvals including the CCM&RP and Kevin's Corner Project;
- Ensuring alignment with identified local, regional and state planning initiatives and opportunities; and
- Feedback from the stakeholder engagement process. Management strategies were informed through consultation conducted with key government regulators and service providers, Isaac and Charters Towers Regional Councils, Townsville City Council, regional FIFO Coordinators, economic development groups and members of the Charters Towers and Clermont communities.

Further engagement with key stakeholders in relation to the management actions defined in the SIA will be undertaken by the proponent as part of EIS Feedback Consultation, which is aligned with EIS Exhibition Period.

Management actions have been identified for each of the moderate to high risks identified through the risk assessment process. The identified management actions are supported by broader plans, policies and procedures that address specific issues or impacts in greater detail and which the proponent has committed to develop and implement as project planning progresses. These plans, policies and procedures are described in detail in Section 7.

Given the difficulty in predicting impacts with certainty over an extended period, the proponent has committed to an adaptive approach, by which social impact management actions and strategies will be reviewed, monitored and updated on a regular basis for the life of the project. The approach to monitoring the effectiveness of the proposed management strategies is described in Section 7.7.

4 PROJECT SOCIO-ECONOMIC CHARACTERISTICS

This section describes the specific characteristics of the project relevant to the assessment of socio-economic impacts.

4.1 PROJECT SCHEDULE

Graph 1 presents the project phases. The EIS refers to Project Years, rather than calendar years, with Project Year 1 (PY1) being the first year of construction. It should be noted that mining schedules are subject to continual revision based on changing mining conditions, and timing could vary accordingly. Based on current scheduling, and subject to approvals being granted in 2015, PY1 is expected to be 2016.

Graph 1
Project Phases

4.1.1 Construction and Early Works Phase

The CEW phase for the project extends from PY1 to PY5. During this phase the following activities will occur:

- The construction of infrastructure and buildings;
- The initial development and commencement of open cut mining operations;
- The initial development and commencement of underground mining operations; and
- The commencement of operation of mine infrastructure.

Construction activities include the construction of:

- Mine infrastructure;
- Construction accommodation village;
- Permanent operations accommodation village;

- Power station;
- Rail loop; and
- Airstrip.

4.1.2 Operations Phase 1

The project comprises two distinct phases of operation. Operations Phase 1 is associated with the operation of both the open cut and underground mines and general site operations e.g. CHPP, airstrip, accommodation village and power station. Operations Phase 1 extends from PY6 to PY31.

4.1.3 Operations Phase 2

Operations Phase 2 includes underground mining operations following the completion of open cut mining. This phase extends from PY32 to PY49.

4.1.4 Decommissioning and Rehabilitation Phase

Progressive rehabilitation will be undertaken throughout the life of the mine. There will also be a final decommissioning and rehabilitation phase at the closure of the project, which will involve the decommissioning of mine infrastructure and the final rehabilitation of the site. The decommissioning and rehabilitation phase will be approximately four years, from PY50 to PY53.

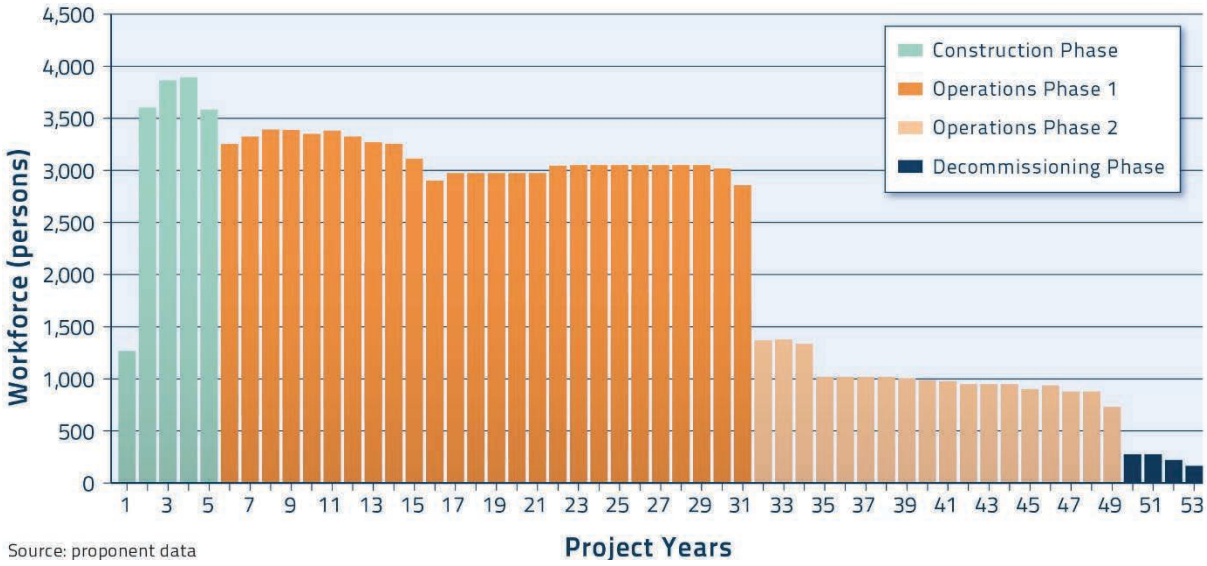
4.2 WORKFORCE DEMAND

4.2.1 Overview

Workforce numbers will vary across the different stages of the project according to need. Workforce numbers presented within this section are based on initial project workforce planning and are subject to change. Throughout this document, workforce estimates for each phase of the project are represented as the average workforce for that phase. Workforce numbers (persons) presented in this report are assumed to be full time equivalent (FTE) positions.

Graph 2 illustrates the anticipated project workforce by project component. Further detailed information is provided in the following sections.

Graph 2
Project Workforce



Source: proponent data

4.2.2 Construction and Early Works Phase

During the CEW phase (PY1-PY5), the size of the workforce will rise and fall to adjust to the requirements of the project. The average annual workforce for the project during the CEW phase is 3,249 persons, and a number of activities occur in this phase (Section 4.1.1).

Table 11 shows the estimated yearly allocation of workforce to each of the CEW phase activities.

Table 11
Construction and Early Works Workforce

Project Component	Project Year				
	1	2	3	4	5
Construction	1,162	2,760	2,359	1,443	690
Site Operations	142	323	585	761	868
Early Open Cut Operations	0	521	838	1,128	1,152
Early Underground Operations	0	0	80	560	872
Total	1,304	3,604	3,862	3,892	3,582

Source: proponent data

The anticipated peak workforce during the CEW phase of 3,892 persons is associated with the fourth year of construction (PY4). It is anticipated that the majority of the workforce during the CEW phase will be employed as contractors.

4.2.3 Operations Phase 1 and 2

The projected operations workforce will fluctuate over time, reflecting the changes in the mining activities described in Section 4.1.2 and Section 4.1.3.

Operations Phase 1 (PY6-PY31) is associated with the simultaneous mining of the open cut and underground sections of the project. Operations Phase 1 will have an average annual workforce of 3,119 persons across the phase and a peak workforce of 3,391 persons in PY8.

Operations Phase 2 (PY32-PY49) is associated with underground mining operations, and has an average annual workforce of 1,016 persons. The peak workforce in Operations Phase 2 is 1,377 persons in PY32-33. Table 12 shows the workforce for the project in five year intervals, and provides an indication of workforce occupations.

Table 12
Annual Peak Workforce Estimates – Project Years 5 to 50

Occupation	Project Year				
	5	**10**	**15**	**20**	**25**
Managers	197	184	171	164	168
Professionals	233	218	202	193	198
Technicians and trades workers	1,182	1,105	1,027	981	1,007
Community and personal service workers	143	134	124	119	122
Clerical and administrative workers	107	100	93	89	92
Machinery operators and drivers	1,433	1,340	1,245	1,190	1,220
Labourers	287	268	249	238	244
Total	**3,582**	**3,349**	**3,111**	**2,974**	**3,051**
Occupation	**Project Year**				
	30	**35**	**40**	**45**	**50**
Managers	166	56	54	50	15
Professionals	196	66	64	59	18
Technicians and trades workers	996	336	326	298	91
Community and personal service workers	121	41	39	36	11
Clerical and administrative workers	91	31	30	27	8
Machinery operators and drivers	1,207	408	395	361	110
Labourers	241	82	79	72	22
Total	**3,018**	**1,019**	**987**	**903**	**275**

Source: Proponent data

4.2.4 Decommissioning and Rehabilitation Phase

Progressive rehabilitation will be undertaken throughout the life of the mine. Rehabilitation workforce numbers during the two operations phases are included in the workforce numbers for these phases.

The final decommissioning and rehabilitation phase will last approximately four years, with an average workforce of 234 persons and a peak workforce of 275 persons in PY50 and PY51.

4.3 CONSTRUCTION AND EARLY WORKS PHASE WORKFORCE MANAGEMENT

4.3.1 Workforce Recruitment

Ultimately the recruitment and management of the CEW phase 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 specific details on where this workforce may be sourced.

However, in the first instance, the workforce will aim to be recruited locally for the CEW phase. Strategies to encourage local participation in the CEW phase are described in Section 7.2. It is likely that only a limited number of personnel will able to be sourced from the Surrounding Area or the Local Area due to the small size of the resident population, the distance between the project site and the nearest host community and the cumulative impact the CCM&RP and Alpha Project are likely to have on the existing pool of potential labour. Previous experience with new mine developments suggests that a percentage of the construction workforce will originate from Central and North Queensland regional centres such as Mackay, Rockhampton, and Townsville. However with increased levels of economic activity in these regions, the proponent also expects to look further afield for the workforce, such as South-East Queensland (SEQ). It is expected that the majority of CEW phase workers will be employed 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 project site. Collection points may include: Brisbane, Rockhampton, Mackay, Townsville and Cairns.

Due to the shorter term of the CEW phase and the anticipated contractor arrangements for this phase, it is anticipated that the construction workforce will follow the demographic characteristics of the existing construction workforces in Queensland.

4.3.2 Workforce Occupation

The occupational requirements of the CEW phase workforce will vary according to the stages of construction. The occupations of the CEW phase workforce are detailed in

Table 13. The occupations of the CEW phase workforce reflect the inclusion of initial open cut and underground operations workforces and site operations workforces in the CEW phase, as well as the construction workforce.

Table 13
Workforce Occupation – Construction and Early Works Phase

Occupation	Workforce (%)
Managers	4
Professionals	4
Technicians and trades workers	33
Clerical and administration workers	2
Community and personal service workers	1
Machinery operators and drivers	45
Labourers	11
Total	100

Source: Proponent data

4.3.3 Workforce Rosters

It is anticipated that the construction workforce will operate on a 7-day-on/7-day-off roster arrangement, to ensure scheduling coordination with the transition to operations workforces.

4.3.4 Workforce 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. CEW phase workforce training is described in Section 7.2.

4.3.5 Workforce Accommodation

The CEW workforce will be accommodated in an on-site construction accommodation village (Figure 4), which is to be constructed as a priority during PY1. The construction accommodation village will comprise approximately 560 rooms and operate on a motelling basis with a capacity of approximately 1,120 persons. The workforce associated with the initial construction of the accommodation village will be housed in the existing exploration camp and progressively moved into the construction accommodation village as construction progresses.

The construction of the operations accommodation village (as discussed in Section 4.4.6) will commence in PY1, immediately following the completion of the construction

accommodation village. Any construction workforce unable to be accommodated in the construction accommodation village will be accommodated in the operations accommodation village as construction progresses.

The accommodation capacity has been planned such that there are enough separate rooms to accommodate the entire CEW workforce. However, the demand for beds will be below the accommodation capacity as construction camp beds will be motelled and only approximately 50% of the project workforce will be on site at any given time.

4.4 OPERATIONS PHASE WORKFORCE MANAGEMENT

4.4.1 Workforce Recruitment

Workforce Recruitment

The required project operations workforce will be sourced through a range of recruitment processes, including local, national and international recruitment, apprentice, trainee and graduate programs and contract labour. It is anticipated that any positions filled nationally will relocate to Queensland for the role.

Given the size and scale of activities, a definitive strategy for recruitment of the operations workforce will be developed once an assessment of potential contractor capabilities has been undertaken. The proponent proposes to utilise a non-resident, long distance commuting workforce for the operations phase due to the remote location of the project site, the condition of the surrounding regional road network and the size of the workforce required for the project. The proponent will provide return flights between nominated collection points along the east coast and the project site for the commuting workforce. This does not mean that workers will have their permanent residence at these collection point locations. Workers may reside elsewhere in Queensland or Australia (Section 4.4.5) and travel independently to the nominated collection point.

It is the preference of the proponent to source personnel from within Queensland and Australia. 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. The proponent does not currently intend on recruiting overseas labour.

Labour Sourcing

During future detailed planning for the commencement of construction, workforce requirements will need to be reassessed in relation to the labour market conditions at the time. Project timing will significantly influence the ability of the project to draw from local and regional labour sources. The proponent recognises that while some parts of Queensland currently have relatively low unemployment rates, there are other areas experiencing

moderate to high levels of unemployment, including areas with available workers with transferable skill sets.

A Labour Market Study (Appendix D) was undertaken to inform the labour source locations for the project. Locations identified as having the capacity to support the project's labour requirements included:

- Cairns Region;
- Townsville Region;
- Mackay Region;
- Fitzroy Region;
- Wide Bay Region; and
- SEQ Region, consisting of the Brisbane GCCSA, Sunshine Coast Region and Gold Coast Region.

The proponent is committed to considering recruitment from nearby regional centres including Clermont and Charters Towers. However, the remote location of the project site precludes shift based employment where the employee is able to return home on a daily basis (Section 4.4.5). Bus transport to the project site will therefore be offered to operations phase employees residing permanently in Clermont or Charters Towers, if warranted by demand. The proponent will not support employment from regional centres on a drive-in/drive-out (DIDO) basis due to the remote location of the project site and potential fatigue safety issues.

At the time the Labour Market Study (Appendix D) was completed, a number of LGAs within the Regional Area were experiencing cumulative impacts from rapid growth in the surrounding resource sector (e.g. Mackay and Fitzroy Regions). For this reason, it was assumed that the majority of project labour would not be able to be sourced from the Mackay and Fitzroy Regions. Due to the recent significant downturn in the coal mining industry since the Labour Market Study was undertaken, there is now increased availability of workers in these regions.

The proponent has committed to reviewing the project labour study closer to the commencement of the project CEW phase. Alternative labour source locations will be considered if current labour market conditions persist into the construction and operations phase of the project.

4.4.2 Workforce Occupation

The occupational requirements of the project operations workforce will vary according to the stages of mine development and the operational requirements. The predicted occupational

requirements for the workforce during operations are summarised in Table 14. Table 14 also provides an indication of where the workforce are likely to be recruited from.

Table 14
Operations Workforce Occupations and Source

Occupation	Workforce (%)	Recruitment Region
Managers	6	Brisbane, Rest of Qld, Interstate
Professionals	6	Brisbane, Mackay, Fitzroy, Rest of Qld, Interstate
Technicians and trades workers	33	Mackay, Fitzroy, Wide Bay, SEQ, Townsville, Rest of Qld, Interstate
Clerical and administration workers	4	Charters Towers, Gold Coast, Rest of Qld, Interstate
Community and personal service workers	3	Charters Towers, Brisbane, Gold Coast, Rest of Qld, Interstate
Machinery operators and drivers	40	Mackay, Fitzroy, Wide Bay, Cairns, SEQ, Rest of Qld, Interstate
Labourers	8	Charters Towers, Gold Coast, Wide Bay, Rest of Qld, Interstate
Total	100	

Source: Proponent data

4.4.3 Workforce Roster

The workforce will operate on a 7-day-on / 7-day-off roster, with 12-hour shifts. Approximately 50% of the project workforce will be on site at any one time.

4.4.4 Workforce Training

The proponent is in the early stages of developing a workforce Training and Skilling Plan (TSP) (Section 7.2.4) for the CEW and operations phases of the project, and is aware that a targeted TSP will be required to secure a long term workforce for the project. The TSP will enable the workforce to access off site training at their home base locations. In this way the social and cultural implications of the proponent's recruitment and training strategy will be dispersed across a number of locations.

4.4.5 Workforce Home Base Locations

Table 15 provides a preliminary indication of the potential home base locations of the project workforce during Operations Phase 1. The rationale for selection of home base locations is discussed in Appendix D.

Given the remoteness of the mine site from the nearest population centres, and the proposed travel arrangements i.e. FIFO, it is unlikely that people will relocate to the nearest regional centre to work at the mine.

Table 15
Workforce Home Base Locations – Operations Phase 1

Home Base Location	Workforce (%)	Operations Phase 1 Workforce (No.)
SEQ	40	1,250
Wide Bay	25	775
Townsville (excl. Charters Towers)	25	775
Cairns	9	290
Charters Towers	1	29
Total	100	3,119

Source: Proponent data

The workforce anticipated to reside in each home base location is likely a combination of existing residents, and new residents who move into a location to take up employment on the project.

Clermont does not present as a viable home base location for the project workforce due primarily to a strong preference among residents for residential-based employment rather than employment requiring long distance commuting, as well as a low unemployment rate (3.6% or 87 persons in March 2015).

Charters Towers Township is likely to be a home base for a small proportion of the workforce for the following reasons:

- A moderate number of unemployed persons (549 persons in March 2015);
- The presence of a sizeable secondary school student population and the opportunity this presents for the project in relation to establishing a sustainable, long-term local workforce; and
- The presence of training organisations, including Indigenous training organisations, in Charters Towers and the opportunities this presents for local training and employment.

Any employees residing in Charters Towers are assumed to be existing residents rather than new incoming residents.

The proportion of labour anticipated to be recruited from Charters Towers is assumed to be less than 1% of the project workforce (29 persons in Operations Phase 1), however this figure is not an upper limit. If a larger number of persons from Charters Towers apply for

project positions and are found suitable, the proportion of the workforce from Charters Towers may increase. Positions likely to be filled by residents from Charters Towers include:

- Administration;
- Accommodation village operations;
- Hospitality;
- Trades and labourers; and
- Apprenticeships and traineeships.

The number of existing residents from Charters Towers employed at the mine is likely to increase over the mine life as the local training and skilling strategies, proposed by the proponent, are implemented.

In particular, the Mackay and Fitzroy Regions were not considered likely home base locations for the project workforce. At the time the SIA baseline was prepared, the Mackay and Fitzroy Regions were experiencing sustained population growth driven by significant expansion in the surrounding mining industry. This population growth resulted in housing availability and affordability issues across both regions, particularly in the Mackay Region. It also placed considerable pressure on existing services and facilities as well as labour supply for non-mining sector businesses. Due to the presence of these existing cumulative impacts, these two regions were not considered suitable home base locations for the project workforce.

The downturn of the coal mining industry since the SIA baseline was prepared has resulted in a reduction in the number of mine employees across the Mackay and Fitzroy Regions leading to marked changes in housing availability and affordability across these Regions. House prices and rents have reduced substantially and housing availability has increased. This suggests that these areas may now have an existing supply of suitable labour and capacity to accommodate a proportion of the project workforce as permanent residents. However, given the cyclical nature of mining it is likely that within the proposed 50 year mine life, these regions will again experience sustained population growth coupled with high demand for housing, and services and facilities.

Alternative regional centres will be considered as home base locations if current labour market conditions persist into the CEW and operations phase of the project. To this end, and as explained in Section 4.4.1, the proponent has committed to updating the project labour study closer to the commencement of the project CEW phase.

4.4.6 Workforce Accommodation

The workforce associated with the operations phases will be accommodated in the on-site operations accommodation village (Figure 4). The operations accommodation village will

comprise approximately 3,048 beds and will be constructed over a 20 month period during PY1 and PY2. The operations accommodation village has been designed to address social amenity considerations and will operate on a cold bed system, meaning that each employee will have their own room which will remain empty when they are not on roster.

The operations accommodation village is intended to be self-sufficient with regard to communications infrastructure, recreational facilities and medical services. There will be no or very limited demand on government or private sector services in Charters Towers, Clermont or other population centres. Security services will be provided on-site, but in the event that a crime is committed, the matter will be referred to the local police.

The accommodation village will be designed to ensure a comfortable living space and access to natural elements. A green belt will separate the accommodation village from the industrial landscape of mining operations. The accommodation village will include a number of social and recreational facilities to ensure the wellbeing of the workforce, including a swimming pool, gyms, general store, laundries, coffee shops and cafes. A non-denominational religious centre will provide a space for culturally-appropriate activities.

The final servicing of the accommodation village will be determined as part of detailed design, however a number of services will be shared with the mine, including:

- A permanent sick bay with 24/7 nursing staff;
- Registered nurse(s) able to dispense and administer prescribed drugs and to handle all restricted pharmaceutical items;
- A link to an internet medical service and a relationship and agreement with emergency air services (Royal Flying Doctor Service (RFDS));
- Firefighting, rescue and emergency services to serve the mine, the village and the airport;
- Mine security and safety services to provide on-site security and policing services; and
- A working relationship and agreements with the local police force for major security and or safety issues.

A decision on whether the operations accommodation village will be a wet or dry village will be made later in the project planning process.

4.5 WORKFORCE TRANSPORT AND LOGISTICS

The final transport and logistical arrangements for the operational workforce will be based on the home base locations of the workforce and confirmed during mine start up through a consultation program. Policies relating to daily hours worked, and travel time will be developed prior to the commencement of the CEW phase. As a result, it is likely that only

people who live within the Surrounding Area will be able to drive to and from work on a daily basis.

The project site is located approximately 250 km by road from the nearest sizeable population centre i.e. Charters Towers. Any significant regular commuting of the workforce via road (i.e. DIDO) would pose an unacceptable logistical and health and safety risk for the workforce, and potentially other road users. The remote location of the project site therefore precludes shift based employment where the employee is able to return home on a daily basis. All employees for the construction and operations phases will be required to commute to the project site on a block shift basis and remain at the project site for the duration of their shift roster.

FIFO Services

The proponent will provide regular flights between the project site and selected airports servicing the home base locations during both the CEW and operations phases. The selection of airports will be based on workforce resident locations, logistical considerations and the capacities of relevant airports. The proponent is yet to confirm the selected airports; however they are likely to include:

- Cairns;
- Townsville;
- Hervey Bay;
- Bundaberg;
- Brisbane; and
- Gold Coast.

Chartered flights to the project site for workforce based in Charters Towers will be investigated by the proponent subject to workforce demand and feasibility.

All FIFO personnel will be transferred from the on-site airport to the on-site accommodation village via a mine-provided bus service. The management of hours on the final day of a roster period will seek to ensure that all FIFO personnel departing the project site are able to leave at a reasonable hour and arrive home safely. The on-site airport is a key element in the management of fatigue and the reduction of traffic on local and regional roads. This reflects the distance of the project site from the nearest key communities.

The construction of the project airstrip will be completed within the first 12 months of the CEW Phase. This will ensure a largely FIFO workforce for the remainder of the CEW Phase, with the exception of those construction workers who require their own vehicles to travel to the project site in order to transport specialised tools and equipment.

Based on shift arrangements, it is anticipated that the operations phase workforce will generate demand for approximately 40 return flights per week between the project site and locations throughout Queensland.

BIBO

During PY1, when the airstrip is being constructed, a bus service will be provided from Townsville City in the Townsville Region and Emerald in the Fitzroy Region to the project site, for the workforce associated with the CEW phase. The lead contractor for the CEW phase will be contractually required to BIBO their workforce from these locations, in order to limit DIDO. It is conservatively estimated in the EIS Traffic Report for the project that 75% of the CEW workforce will BIBO to the project site, while 25% will DIDO.

During project operations, a bus service will be provided to the project site on a shift roster basis for employees residing in the townships of Charters Towers or Clermont, if warranted by demand. The bus service will transport personnel back to their home towns upon completion of their block shift rotation.

DIDO

The distance of the project site from neighbouring centres of Clermont and Charters Towers means DIDO on a shift basis (that is, where workers return to their usual place of residence after each shift) will not be feasible during either the CEW or operations phases as the travel times would exacerbate the risk of fatigue which can be a significant cause of workplace accidents and injuries and also pose a risk to the public.

Some specialist construction personnel recruited from the Local and Regional Area may drive to the project site, arriving at the accommodation village the day prior to their shift commencing. Workers wishing to drive to site will need specific approval from the project site management. This will be assessed on a case-by-case basis, including the provision of a travel plan. All workers who drive to work will still be restricted from leaving the project site without prior approval during a shift rotation. The proponent does not support DIDO for the CEW phase for health and safety reasons.

5 PROFILE OF THE AREAS OF INFLUENCE

This section provides a social profile of the project Areas of Influence. Detailed statistical data relating to the project Areas of Influence is presented in Appendix B. It is noted that the socio-economic characteristics of the project Areas of Influence presented in Appendix B have been provided at a number of geographic levels reflecting the characteristics of the project. This, largely, does not include the provision of data at a geographic scale equivalent to the project's total defined Social and Cultural Areas of Influence as required by the project's TOR. Due to the inclusion of the likely home base locations in the defined Social and Cultural Areas of Influence, any data provided that is aggregated to the defined Social and Cultural Areas of Influence would mask significant underlying differences between regions and localities. For this reason, data has largely not been provided or discussed at that geographic scale.

5.1 SURROUNDING AREA

The remote location of the project site and the relatively sparse population, limits statistical and qualitative information available for the Surrounding Area.

The Surrounding Area is shown on Figure 7, and includes the project site, Belyando Crossing and the surrounding properties along the Gregory Developmental Road. A detailed description of land use within and surrounding the project site is provided in the EIS Land Use Section.

The Surrounding Area consists of several small National Parks, rural land along the Flinders Highway and Gregory Developmental Road up to the boundary of Charters Towers Township, and the sparsely populated land south of the project site and west of Clermont Township. There are no aquaculture activities present in the Surrounding Area.

There is no defined and separate Indigenous community (for example Woorabinda Aboriginal Shire) residing either within the project site or in proximity to the project site. The findings of consultation conducted with landowners for the EIS suggests there is no contemporary use of the project site or the surrounding area by Indigenous people. The project site is not actively utilised by Indigenous people for the collection of flora and/or fauna.

In 2011 the Surrounding Area had a population of 679 persons (ABS 2013), of which approximately 3% were Indigenous. The Surrounding Area is characterised by large rural landholdings used for cattle grazing and over two-thirds of employed persons are employed in the agriculture, forestry and fishing sector, primarily as beef cattle farmers. A further 9% of employed persons in the Surrounding Area are employed in the mining sector, primarily in the metal ore industry.

A roadhouse and service station, Belyando Crossing Roadhouse, is located on the Gregory Developmental Road near to where the road crosses the Belyando River. It offers food, fuel, as well as accommodation in the form of powered, unwatered caravan sites, with limited facilities. Belyando Crossing is the only accommodation or fuel provider along the 365 km stretch of the Gregory Developmental Road between Charters Towers and Clermont. It is also the closest commercial facility to the project site.

5.2 LOCAL AREA

Local Area comprises the two LGAs of Charters Towers and the Isaac (Figure 6). The Local Area has a population of 34,757 persons and covers a total area of 127,440 km^2. Each LGA has different histories, settlement patterns and characteristics. The following section describes the key community of Charters Towers, within the Charters Towers LGA, and the community of Clermont in the Isaac LGA. These are the closest two communities to the project site.

5.2.1 Charters Towers

Settlement History

The township of Charters Towers is defined in ABS geographical terminology as the Charters Towers Urban Centre/Locality (UCL). Charters Towers Township is the main centre of the Charters Towers LGA, and the seat of the CTRC. It is located approximately 90 minutes' drive west of Townsville City and approximately 285 km north of the project site (Figure 1).

The township of Charters Towers was founded following the discovery of gold in the area. The initial discovery led to a boom in gold mining which lasted from the early 1870s to 1917, when World War I contributed to labour shortages and gold mining in the township become economically unviable. During the gold boom period, the population of Charters Towers swelled to approximately 25,000, and the town was referred to as "The World", denoting the abundance of goods and services in the township and the popular opinion that there was no reason to travel outside the area.

Over time, gold mining has declined in the area and the township has established itself as an education centre and agricultural hub for North Queensland.

Demography

In 2011, the population of Charters Towers Township was approximately 8,234 and the population of the Charters Towers LGA was approximately 12,169. The population of both the Township and the LGA remained stable between 2006 and 2011, but the population of the township experienced a small decline between 2001 and 2011 (OESR 2012a).

There are 962 Indigenous people in the Charters Towers LGA of which 829 are located in the Charters Towers Township.

Local Issues, Values and Aspirations

Gold mining operations still exist around Charters Towers Township, however the primary industries it services now include agriculture and education. During consultation for the project, residents described the township as a "big, vibrant community". The township promotes tourism based on the community's Indigenous and military history and residents are proud of the township's rural character.

The community of Charters Towers Township is well-balanced, with a diverse arts and culture sector and strong economic diversity. The town's low population growth however, highlights a growing need to continue to attract residents and businesses to the town in order to maintain sustainability.

The Charters Towers Community Plan, *Our Region, Our Future –2035: Community Plan 2011-2035* (CTRC 2011) presents the Charters Towers LGA as one of favourable geographic location and climate, and having an abundant water supply in the form of the Burdekin River. The Charters Towers Community Plan also identifies the presence of natural resources as a significant opportunity for the future growth of the region.

The Charters Towers Community Plan (CTRC 2011) outlines the CTRC's vision for the community, which includes:

- Upgrade and maintenance of extensive road systems;
- Unlocking of land within Charters Towers Township for residential and industrial purposes; and
- Attraction of residents to the region and growing the population.

Employment and Training

Table 16 presents labour market information from the Charters Towers LGA and the Charters Towers Statistical Area Level 2 (SA2). In March 2015, Charters Towers LGA had a labour force of 5,722 people including 3,729 within the Charters Towers SA2. At the same time Charters Towers LGA had an unemployment rate of 11.5% compared to 14.7% in the Charters Towers SA2 (Department of Employment 2015). Between 2011 and 2015 the size of the labour force declined in the Charters Towers LGA and Charters Towers SA2, and the respective unemployment rates increased substantially.

Table 16
Charters Towers Unemployment Rates and Labour Force, 2011– 2015

Location	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Unemployment (Persons)					
Charters Towers SA2	305	456	276	426	549
Charters Towers LGA	339	520	317	489	658
Unemployment Rate (%)					
Charters Towers SA2	7.5	11.4	7.4	11.8	14.7
Charters Towers LGA	5.5	8.5	5.6	8.8	11.5
Labour Force (Persons)					
Charters Towers	4,064	4,000	3,705	3,604	3,729
Charters Towers LGA	6,198	6,120	5,691	5,537	5,722

Source: Department of Employment 2015

There are a small number of registered training organisations based in Charters Towers Township. The two most notable are Jenagar Training and the newly established Dalrymple Trade Training Centre (DTTC).

Jenagar is an Indigenous training organisation specialising in the mining and construction industry. The DTTC is a federally-funded training organisation and began operating at the beginning of 2014. The DTTC is run in partnership with four local schools, with certificate courses currently offered in:

- Infrastructure and resource management;
- Engineering;
- Construction;
- Manufacturing;
- Business;
- Allied and child health;
- Aged care; and
- Kitchen operations.

The DTTC is currently developing courses on employability in consultation with job providers, and partnering with local and regional training organisations such as Jenagar.

Economic Vitality

Due to the small size of the economy of the Charters Towers Township, the economy of Charters Towers is measured as the economy of the Charters Towers LGA, to capture the economic activity surrounding the township. The Charters Towers LGA has significant

specialisation in mining, agriculture and education. The mining sector accounted for approximately 33.5% of GRP in the Charters Towers LGA in 2010/11 (CTRC 2013). While there is an existing mining sector in the Charters Towers LGA, there are few links between the mining industry and local businesses or training institutions.

Economic growth is a key goal for the CTRC, and engagement with the mining industry is considered a positive opportunity for business growth in the Charters Towers LGA. The Charters Towers Economic Development Plan lists the establishment of supply chains for agriculture and mining as a key initiative for the town, along with the branding of Charters Towers Township as an inland supply centre for resources development (CTRC 2013).

In 2013, Hansen Bailey conducted a Business Capability Audit in Charters Towers and Clermont Townships (Appendix E). In Charters Towers Township, respondents to the Business Capability Survey reported that the main issues affecting local business conditions were low business confidence, support from local government and the availability of industrial land. Delays due to freight to and from major centres, the lack of passenger and commercial air services available in the town and frustration at limited local council and resident support for economic growth were issues also noted as affecting business conditions.

In Charters Towers Township, 70% of respondents to the business capability survey indicated that they currently engaged with the mining industry. Respondents from Charters Towers Township who operate businesses relevant to the mining sector and who do not currently engage with the sector identified a lack of apparent interest in local businesses from the mining sector and distance to mining projects as barriers to engagement with mining projects. Impersonal communication was also identified as a major barrier to mining sector engagement. Limited opportunities for face-to-face engagement with the mining sector and the complexity of tendering processes were identified as issues affecting the willingness of local businesses to participate in supply chain opportunities. It was evident from consultation that local businesses in Charters Towers are accustomed to personal, face-to-face contact with their suppliers and clients.

Housing and Accommodation

In 2011, the cost of housing in Charters Towers was low relative to Queensland, with median rents at $190 per week compared to the Queensland median of $300 per week. However, the quality of housing in Charters Towers is also significantly lower than other major centres which often benefit from new developments. The National Rental Affordability Scheme offers approximately 20 low-cost rentals in Charters Towers. More recent median weekly rents data for Charters Towers Township is available from the Queensland Rental Tenancy Authority (RTA) and is based on an analysis of new rental bonds lodged in each quarter. Data is updated for the March, June, September and December quarters.

The following median weekly rents for Charters Towers Township are based on RTA data for the March quarter 2015 (QGSO, 2015):

- Two bedroom house - $220 per week compared with $203 per week for Charters Towers LGA and $330 per week for Queensland;
- Three bedroom house - $240 per week compared with $255 per week for Charters Towers LGA and $350 for Queensland; and
- Four bedroom house - $330 per week compared with $325 per week for Charters Towers LGA and $410 for Queensland.

Consultation revealed that land development in Charters Towers Township is constrained by Native Title issues, and the CTRC identifies the freeing of land for residential and industrial development as a major goal in the Economic Development Plan (CTRC 2013).

There are 22 accommodation providers in the Charters Towers LGA. In Charters Towers Township, there are nine motels, two hotel/motels, two hotels with accommodation and three caravan parks with cabins. Hotels and motels within the Charters Towers Township are largely utilised by corporate travellers, while the caravan parks and camping sites throughout the LGA are frequented primarily by “grey nomads” and driving tourists. The Charters Towers Visitor Information Centre reported in consultation that an estimated average of 150,000 tourists visit the LGA each year, and while there has been a slight drop in tourist numbers in 2014, this has not been as severe as in other Queensland regions and demand has remained strong. Despite strong demand, it was reported that there is surplus capacity in short-term accommodation, especially within the hotels and motels in Charters Towers Township.

Emergency and crisis accommodation in Charters Towers is managed by the Charters Towers Neighbourhood Centre Inc. (CTNC), which administers a Community Housing Program on behalf of the Queensland Government. The CTNC manages 34 community houses in Charters Towers Township. There are approximately 125 government houses in Charters Towers and Pentland, managed by the Department of Housing and Public Works.

Emergency Services

The provision of emergency services in Charters Towers is adequate for the size of the township; however, emergency service providers noted that an expansion of resources would be required to service the growing exploration and mining activities in the Bowen and Galilee Basins. Recent government funding cuts were noted during consultation as directly affecting service delivery. The project site is located in the Bowie Rural Fire Brigade area, serviced by local landholder volunteers. The nearest permanent Queensland Fire and Emergency Service (QFES) station is in Charters Towers Township.

Both the QFES and the Queensland Ambulance Service (QAS) are staffed by full-time and auxiliary staff. Consultation indicated that the auxiliary staff for both services in Charters Towers are often unable to leave their jobs to respond to an emergency when the full-time staff are not on shift, necessitating emergency service response from Townsville.

QFES representatives indicated during consultation that the Charters Towers station does not have the appropriate equipment to engage in heavy-vehicle incident response, and as a result, technical assistance would be called out from Townsville in the event of a heavy-vehicle traffic incident along the Gregory Developmental Road.

Emergency service response along the Gregory Developmental Road is hampered by poor communications infrastructure. QFES representatives reported frequent “black spots” along the road in which mobile communications are not possible and satellite phone service is unreliable.

Queensland Police Service (QPS) in Charters Towers is staffed by 18 full-time uniformed staff, with a small number of officers specialising in rural crime, youth and traffic policing. The station has four marked vehicles and two unmarked vehicles. Charters Towers QPS shares the policing of the Gregory Developmental Road with Clermont QPS. Consultation with QPS in Mackay indicated that the project site “couldn't be in a worse location”, as the site is located between a number of QPS stations, the closest being Charters Towers and Clermont. Furthermore, QPS expressed concern that a lack of communications infrastructure and flood-prone road infrastructure would limit access to the site in the event of an emergency or the carrying out of standard police duties (serving warrants or notices).

Health Infrastructure and Services

Charters Towers is serviced by suitable and sustainable public services, including a number of medical services not often found in a town of its size:

- 140-bed aged care complex;
- Mental health unit; and
- 25-bed hospital.

The availability of these services and facilities is a remnant of previous population booms in the area, and the presence of a sizeable public service sector in the township. However, state government funding cuts in 2013 led to a reported decrease in employment in this sector and a subsequent decline in population and changes in service delivery.

Other Infrastructure and Services

While Charters Towers is well-serviced for general retail needs and commercial businesses, residents often travel to Townsville for specialised retail and entertainment.

The town maintains a reputation as the education capital of rural north Queensland. There are eight schools in Charters Towers, three of which service Prep to Year 7, one services Years 8 to 12, and four schools service Prep to 12. Three of these schools are private boarding schools, and there is one state high school (SHS). There are a combined total of approximately 1,900 students attending schools in the Charters Towers Township.

The CTNC is a focal-point for community services in Charters Towers and the surrounding region, and runs a Rural Multi-Tenant Service Centre (RMTSC). The RMTSC hosts a number of community services, including:

- Centacare;
- Queensland Indigenous Family Violence Legal Outreach Service;
- Department of Communities - Child Safety;
- Family Relationship Centre; and
- North Queensland Women's Service.

Charters Towers Township also has an airfield which is currently used only for charter flights but has capacity to receive commercial aircraft. During consultation for the project, local government representatives expressed a desire to attract a regional airline to service the airport.

5.2.2 Clermont

Settlement History

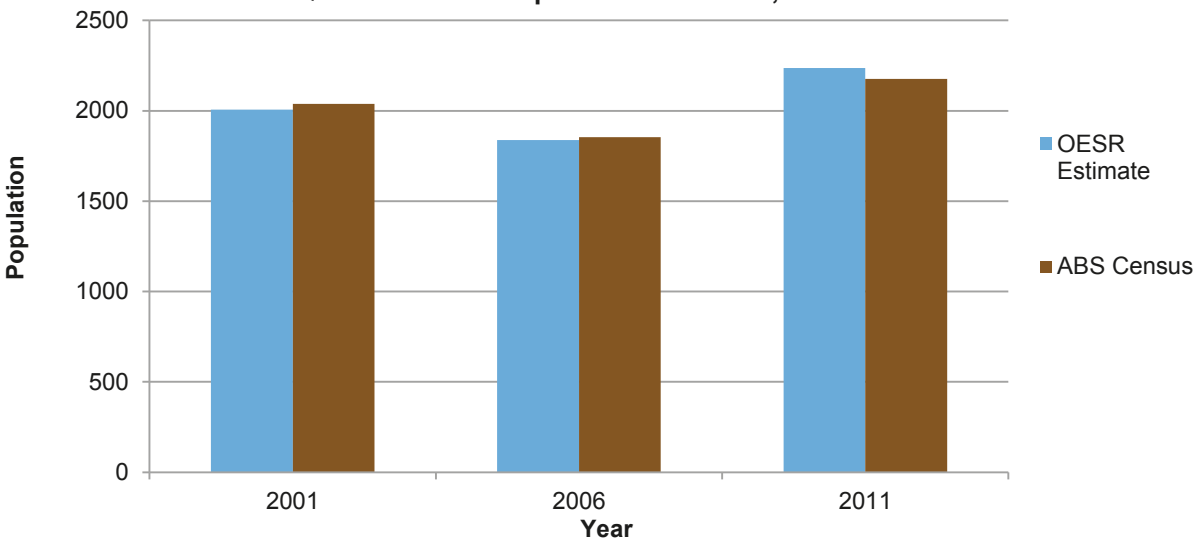
Clermont is a small rural mining community, and is located approximately 260 km south of the project site by road and approximately 230 km south-west of Mackay (Figure 1). Originally pastoral and grazing land, the discovery of gold in the Clermont area in the 1860s led to the establishment of a permanent settlement and these roots continue to influence the identity of the township today. Coal has been mined in Clermont since 1984 at Blair Athol Mine. Rio Tinto previously owned and operated Blair Athol Mine and the nearby Clermont Coal Mine. Blair Athol Mine was closed ahead of schedule in November 2012, and Clermont Coal Mine was sold to Glencore in June 2014. Linc Energy purchased Blair Athol Mine following its closure in 2013 and is intending to re-open the mine once the sale is finalised (Tasker 2013).

Demography

For statistical purposes, the geographical boundary of the township is consistent with the Clermont UCL. The Clermont UCL had a usual resident population of 2,038 in 2001 and 2,177 in 2011, with an average annual increase of 0.6%. The estimated residential population of Clermont in 2014 was 2,440 persons compared to 2,460 persons in 2013.

The QGSO publishes population estimates for the Bowen and Galilee Basins. The QGSO estimates approximate the ABS Census data, as shown in Graph 3.

Graph 3
QGSO and ABS Population Estimates, Clermont

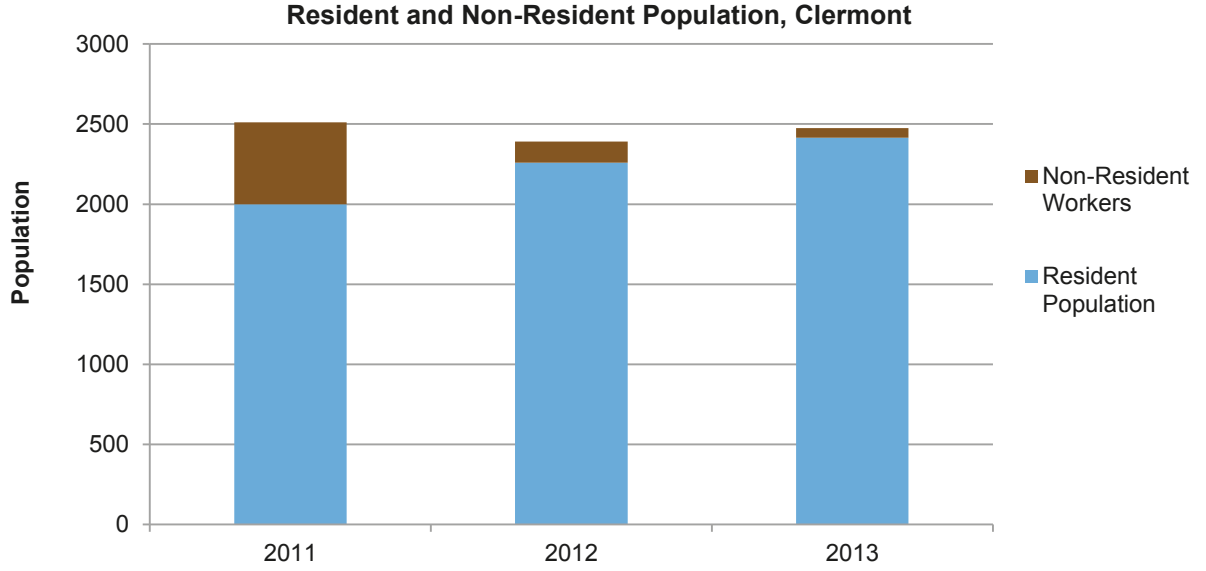


Source: ABS 2013, OESR 2010, QGSO 2013b

The QGSO figures are useful as they provide a breakdown of resident and non-resident population not available from the ABS.

Resident population is defined as persons who live and work in the township, while non-resident is defined as persons who work in the township but live elsewhere. In 2011, the QGSO estimated that Clermont had a NRW population of 510 persons, or 25% of the 2001 Census population (Graph 4). By 2013, this estimate had reduced to 60 persons, likely due to the slowdown in mining throughout Queensland, the closure of Blair Athol Mine ahead of schedule in November 2012 and anecdotal reports of a shift in employment conditions at Clermont Coal Mine from FIFO to resident. This NRW population of 60 persons was equal to approximately 2.7% of the 2011 Census population of 2,177 persons. By 2014 the NRW population of Clermont declined further to just 10 people in line with the slow-down in the mining industry.

Graph 4
Resident and Non-Resident Population, Clermont



Source: OESR 2012a, QGSO 2013a

Local Issues, Values and Aspirations

During the past decade, Clermont has been heavily impacted by mining, with rising wage levels and severe labour shortages experienced, and a gradual change in community character due to an increase in the number of NRWs in the town. Consultation for the project indicated that although the closure of Blair Athol Mine has reduced pressure on the labour market in Clermont, the majority of local workers from Blair Athol Mine were nearing retirement and the main impact of the closure was simply to speed up this process rather than flood the market with available labour.

The presence of Blair Athol Mine and Clermont Coal Mine within a daily commute from Clermont has led to an expectation of residential employment in the town, with residents and local government representatives indicating that the town does not aspire to increase its NRW population. The *Clermont Preferred Futures Strategy on a Page* (IRC 2012), prepared by local government representatives and Rio Tinto through a consultative process with business and residents, outlines permanent residency and a decreased reliance on the mining industry as two of the main goals for the township's development.

The desired values and aspirations of the Clermont community are likely to be challenged once construction commences on the nearby Alpha and Kevin's Corner mining projects, and the CCM&RP, due to the large scale of these projects, their proximity to Clermont and the proposed use of largely NRW workforce for these developments.

Employment and Training

Table 17 presents labour market information for the Isaac LGA and the Clermont SA2. In 2015, Isaac LGA had a labour force of approximately 15,339 people including 2,422 in the Clermont SA2. At March 2015 the unemployment rate in Isaac LGA was 2.6% compared to 3.6% in the Clermont SA2. The size of the labour force in the Isaac LGA and Clermont SA2

has increased substantially since 2011. The unemployment rate in both areas of interest remains low, but has increased since 2011 (Department of Employment 2015).

Table 17
Isaac LGA and Clermont SA2 Unemployment Rates and Labour Force, 2011– 2015

Location	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Unemployment (Persons)					
Clermont SA2	37	42	49	60	87
Isaac LGA	140	152	155	260	392
Unemployment Rate (%)					
Clermont SA2	1.8	1.9	2.1	2.5	3.6
Isaac LGA	1.0	1.1	1.0	1.7	2.6
Labour Force (Persons)					
Clermont SA2	2,074	2,177	2,374	2,404	2,422
Isaac LGA	13,656	13,850	14,896	15,243	15,339

Source: Department of Employment 2015

Economic Vitality

The Clermont economy is based primarily on agriculture, beef grazing and mining. In 2011, Clermont had less than 30 unemployed persons. However, these numbers were influenced significantly by the mining boom affecting the town at the time.

Due to the small size of the township of Clermont, the economy of Clermont is measured as the economy of the Isaac LGA, to capture the economic activity surrounding the township. The Isaac LGA has a significant specialisation in mining, with almost 40% of persons over 15 years employed in mining in 2011, compared with just 2.6% for Queensland. In the 2010/2011 financial year, mining contributed approximately 77% of the Isaac LGA GRP (Lawrence Consulting 2010, 2011, 2012).

Prior to 2012, the township of Clermont benefitted economically from the operation of the Blair Athol Mine, in the form of direct and indirect employment as well as significant procurement and supply relationships. The closure of Blair Athol Mine ahead of schedule in November 2012 resulted in significant job losses in the Clermont community. While the eventual closure of Blair Athol Mine was expected, the economic impact of the closure was compounded by a reported decrease in local employment and procurement from the Clermont Coal Mine. During EIS consultation in Clermont it was reported that Clermont Coal Mine had reduced procurement expenditure in the town.

During the Business Capability Audit undertaken with Clermont business operators in 2013 to inform the project EIS, respondents reported low business confidence in the township.

Despite the retrenchment of the Blair Athol Mine workforce, recruitment of staff in Clermont is still considered problematic, with over 75% of respondents in Clermont reporting difficulty recruiting skilled labour, and 45% reporting difficulty recruiting unskilled labour.

Approximately 60% of survey respondents from Clermont indicated that they currently engage with the mining sector and the majority of these respondents indicated that they rely on the mining sector for over 50% of their annual turnover.

Respondents from Clermont who did not currently engage with the mining sector stated the lengthy induction processes and volatile nature of mining contracts as the main reasons they do not currently engage with the mining sector.

Housing and Accommodation

Clermont has previously experienced housing constraint issues as a result of the mining boom, however not at the same level as other mining towns in the region, such as Moranbah.

In 2011, the cost of housing in Clermont was significantly lower than in larger centres, with median rents at $100 per week compared to the Queensland median of $300 per week (ABS 2013). However, RTA data shows median rent in Clermont for a 3-bedroom house in March 2015 is $290 per week, compared with $250 per week for Isaac LGA and $350 per week for Queensland (QGSO 2015).

In response to housing pressures in the region during the mining boom, housing and residential land was developed in Clermont. A recent housing development at McDonald's Flat Road offers approximately 80 units of housing, of which there are numerous vacancies, and a second stage of this project is currently being constructed. In addition, the IRC has constructed three affordable housing units in Clermont at the Griffith Affordable Housing Precinct, and developed a land bank of residential land for future release if demand rises in the area.

Short-term and tourist accommodation is provided in six hotels/motels and a single caravan park. Fluctuations in the NRW population of Clermont have previously resulted in pressure on these accommodation providers, however the closure and downsizing of mines in the Bowen Basin, including Blair Athol near Clermont, has resulted in reduced pressures on these establishments. Consultation for the project indicated that there is ample vacancy in short-term accommodation in Clermont.

Emergency Services

Emergency services in Clermont are limited, with an auxiliary station for the QFES and a permanent QPS station with five staff and one vehicle. Consultation revealed that the lack of a second QPS vehicle leaves the town under-policed when officers respond to incidents outside of the township. In the EIS for the CCM&RP, located south of the project site, Adani

Mining commits to the provision of an additional vehicle to Clermont QPS to address this issue. QAS in Clermont has four permanent staff and one relief staff, along with two ambulances.

Health Infrastructure and Services

The township has a Multi-Purpose Health Service, with a 16-bed hospital and a General Practitioner, as well as an 8-bed aged care facility, Monash Lodge. The Multi-Purpose Health Service runs on a nurse-led practice, and offers general medical and x-rays. Surgeries, scans and any specialist procedures are transferred to Emerald or Mackay. Emergency care is provided through medivac, but consultation indicated that wait-times for medivac can be lengthy. Clermont does not have any mental health services.

Other Infrastructure and Services

The services and facilities available in Clermont are typical of most small rural towns in Queensland. Clermont's commercial and retail services are limited. The town has a single supermarket and a number of small retail businesses including hairdressers, real estate, banking, boutique clothing and gifts. Many residents travel to the regional centre of Emerald, approximately 100 km south by road, for retail shopping and specialist services.

In Clermont, there are three schools in total, comprising two Prep to Year 7 and one SHS (Years 8 to 12). Clermont schools educate approximately 450 students. The Clermont SHS works in partnership with the Gateway to Industry Schools Program, and runs a Gateway to Agriculture Program from the school's campus.

Clermont has a small public airport, with an airstrip capable of landing a Dash-8-100 plane, but no baggage handling facilities. There are currently no public passenger services running through Clermont Airport.

5.2.3 Summary of Key Base line Characteristics - Local Area

Table 18 provides a summary of the key baseline characteristics of the Local Area, that is, the two LGAs of Charters Towers and the Isaac.

Table 18
Summary of Key Baseline Characteristics – Local Area

Socio-economic Variable from TOR	Data Source	Summary
Total population	OESR 2015a	Estimated resident population is 36,972 persons, with an annual growth rate of 1.4% over 5 years. 67.4% of the population is within working age (15-64 years)

Socio-economic Variable from TOR	Data Source	Summary
Full Time Equivalent (FTE) Population	ABS 2015	Estimated FTE population of Isaac LGA in 2014 was 35,540 including 11,085 NRW. Within the Isaac LGA, Clermont had an FTE population of 2,440 including 10 NRW. The OESR does not produce FTE population estimates for the Charters Towers LGA.
Indigenous population	OESR 2015a	There are 1,566 Indigenous persons within the Local Area, with 962 in the Charters Towers LGA and 604 in the Isaac LGA. The percentage of Indigenous persons within the Local Area is 4.5%
Population growth	OESR 2015a	Population growth is expected to increase at 1.3% per year over the next 25 years, with the population of the Local Area increasing to 49,135 by 2036.
Age and gender	OESR 2015a	The ratio of males/females in the Local Area is uneven, with a higher proportion of men. In the Charters Towers LGA the number of males and females is almost equal. In the Isaac LGA the number of males is greater than the number of females. The Local Area has a youthful age profile, with 68.2% of residents aged <45, compared to state average of 61.8%. Children <15 years represent almost a quarter of the population. Charters Towers LGA has an older profile (16.4% aged 65+), whilst the Isaac Region has very few senior citizens aged 65+ (4.7%).
Family structures	OESR 2015a	There are 8,344 families within the Local Area. Couple Family with Children are the dominant family structure, accounting for 50.3%.
Education	OESR 2015a	46.6% of the Local Area population aged 15 years and over completed Year 11 or 12 or equivalent, 33.8% completed Year 9 or 10 or equivalent and 7.2% did not go to school, or Year 8 or below. Non-school qualifications are held by 50.5% of the population, with Certificates being the dominant type at 22.6%. The Isaac Region has a higher level of education than the Charters Towers Region.

Socio-economic Variable from TOR	Data Source	Summary
Health and wellbeing	Public Health Information Development Unit (PHIDU), 2015	According to the PHIDU, an estimated: • 905 people aged 18 years and over in the Isaac LGA consume levels of alcohol considered to be high risk. This is equal to a rate of 5.4 persons per 100 population; and • 2,530 people aged 18 years and over in the Isaac LGA are considered to be obese. This is equal to 31.1 people per 100 population. There are no PHIDU estimates of health risk factors for the Charters Towers Region. The median age of death in the Charters Towers Region is 78 years compared to 68.5 years in the Isaac LGA. The provision of General Practitioners (GPs) per 100,000 persons is lower in the Charters Towers LGA than the Isaac LGA - 55.4 and 59.3, respectively.
Cultural and ethnic characteristics	OESR 2015a	The Local Area is less culturally diverse than Queensland, with 8.5% of persons born overseas compared to 20.5% of Queensland. The Charters Towers Region has a lower representation of persons born overseas at 6.0% compared to 9.9% of the Isaac Region. The dominant country of birth, outside of Australia, is New Zealand at 2.7%.
Income	OESR 2015a	Median total personal income in the Local Area is $39,651 per year, compared to $30,524 per year in Queensland. The Local Area has a significantly higher percentage of persons earning >$104,000 annually (16.4%) compared to Queensland (5.5%). Median total family income in the Local Area is $113,315 per year, compared to $75,556 per year in Queensland. The Local Area has a significantly higher percentage of families earning >$156,000 annually (20.2%) compared to Queensland (10.9%).
Labour force	OESR 2015a	In the Local Area the mining industry employs the largest proportion of the labour force - 31.8%, compared to 2.6% in Queensland. Other key industries of employment include Agriculture, Forestry and Fishing (9.3%), Construction (6.5%) and Accommodation and Food Services (6.3%). 21.4% of the workforce is employed as Machinery Operators and Drivers, 19.3% as Technicians and Trades Workers, 12.7% as Managers and 12.4% as Labourers.

Socio-economic Variable from TOR	Data Source	Summary
Housing type	OESR 2015a	The Local Area contains 9,735 occupied private dwellings. 89.6% of private dwellings are separate houses, 3.3% are semi-detached dwellings, 2.9% apartments, 3.1% caravans and 0.9% other. 26.9% of dwellings within the Local Area are fully owned, with 20.4% being purchased and 48.4% rented. The proportion of dwellings rented in the Local Area is significantly higher than Queensland (33.2%).
Housing costs	OESR 2015a	Based on 2011 census data, the Charters Towers LGA has a slightly higher median rent than the Isaac LGA - $203/wk and $255/wk for a 2 and 3 bedroom house, compared to $200/wk and $250/wk, respectively. In the 12 months ending September 2014, the Isaac LGA had a median sale price of $250,000 compared to $230,000 in the Charters Towers LGA. The slow-down in the mining industry has driven significant change in housing availability and affordability across the Isaac LGA and in particular in the town of Moranbah. Over the past 12 months property sale prices and rents have dramatically reduced in Moranbah.
Housing availability and affordability	OESR 2015a	There are 10,858 occupied dwellings within the Local Area. In the 12 months to 31 March 2015 a total of 1,652 rental bonds were lodged in the Local Area including 856 lodgements for a 3 bedroom house. Approximately 80% of these bond lodgements were for dwellings in the Isaac LGA. In the 12 months ending 30 September 2014 there were 268 residential dwelling sales in the Local Area consisting of 141 sales in the Charters Towers LGA and 127 sales in the Isaac LGA.
Disability prevalence	OESR 2015a	The proportion of persons in the Local Area in need of assistance with a profound or severe disability was 2.9%, compared to 4.4% in Queensland. The Charters Towers LGA has a higher representation of disability at 5.8%, compared to 1.4% in the Isaac LGA.
Index of social disadvantage	OESR 2015a	16.2% of the population of the Local Area are within the most disadvantaged quintile compared to 20.0% in Queensland. A significantly higher proportion of the Charters Towers LGA population is in the most disadvantaged quintile compared to the Isaac LGA – 43.1% compared to 1.8%. This may be attributed to the size of the Indigenous population residing in the Charters Towers LGA.

Socio-economic Variable from TOR	Data Source	Summary
Crime (including domestic violence)	GHD, 2013	The most common crimes in the local area 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 Violence Protection Order; and Stock Related Offences. The incidence of crime is higher in Charters Towers Region than the Isaac Region.

5.3 REGIONAL AREA

The Regional Area comprises the two SA4s of Mackay and Townsville. The Regional Area has a population of 418,678 persons and a total area of 170,612.8 km^2. Each Region has a different history, settlement pattern and characteristics, and are discussed in the following sections.

5.3.1 Townsville Region

The Townsville Region (Figure 8) is defined as the Townsville SA4. In 2011, the Townsville Region had a population of 217,897 persons and is expected to grow at an average rate of 3.0% between 2011 and 2036 (ABS 2013, OESR 2011). The Townsville Region includes the city of Townsville, as well as the LGAs of Townsville, Charters Towers, Hinchinbrook, and Burdekin. The major population centres in the Townsville Region include Townsville City, the coastal centres of Ingham and Ayr and the rural centre of Charters Towers.

The region is economically diverse with a moderate specialisation in the public administration and safety industry (ABS 2013). The Townsville Region provides services and supply chains to mining projects throughout north-west and central Queensland. However, the size and diversity of the Townsville City economy has ensured that the economic specialisation seen in other mining regions such as the Mackay Region has not been felt in the Townsville Region.

Townsville City is the primary centre of the Townsville Region, and widely regarded as the capital of North Queensland. Townsville City provides all the services expected of a moderately-sized city, and with a population of approximately 175,000 persons in 2011, Townsville City accounted for over 80% of the Townsville Region's population. The city is home to James Cook University and numerous education and vocational training institutions. The Port of Townsville handles more than one eighth of Queensland's exports and is currently completing an ongoing expansion of capacity. Townsville City is located on major national and state road and rail networks. The Stuart Bypass Road, the first stage of the $190 million Townsville Port Access Road, has been completed. It provides a dedicated

heavy vehicle link between the Bruce Highway (to the north/south) and the Flinders Highway (to the west), increasing transport efficiency to/from the Port of Townsville, the size of cargoes permitted to move, and allows heavy vehicles to bypass residential areas.

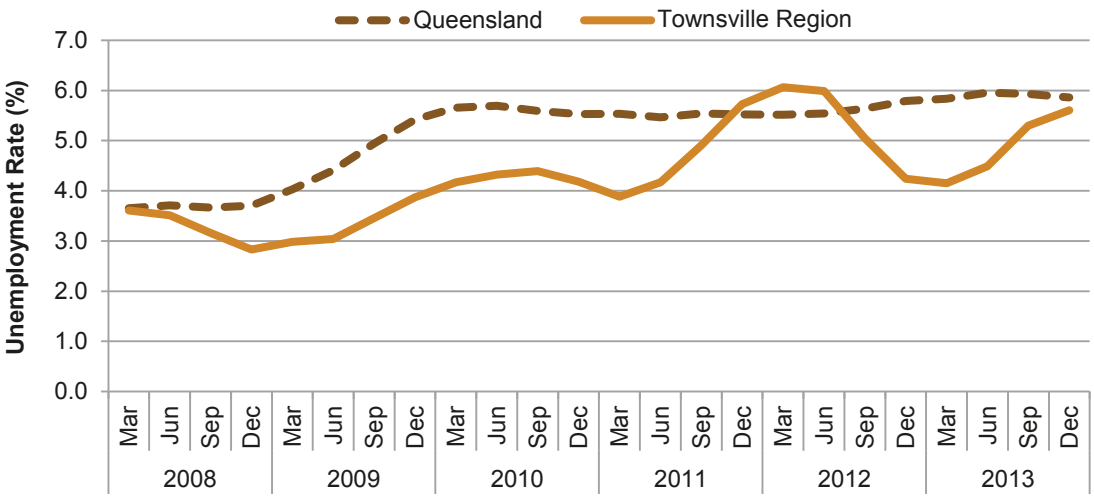
Townsville City is home to a substantial Australian Defence Force presence with 1,200 defence force personnel stationed in the city and as a result offers a range of services designed for remote workers and their families. Townsville City is also the operational base for emergency services in the Townsville Region, including:

- QFES;
- QAS;
- QPS; and
- RFDS.

Townsville City has a stable housing market and an estimated 5,483 hectares of broadhectare land available for residential development. Using 2011 Census average household sizes, and median population growth projections, this available residential land stock indicates just over 19 years of supply (OESR 2012b).

Townsville City Council is seeking to enhance the economic growth of the city while maintaining the relaxed lifestyle associated with the region (Townsville City Council 2011). Townsville Enterprise has recently joined the Queensland Resources Council (QRC) Regional Partnerships Program, in order to attract mining business to the Townsville Region (QRC 2014). Unemployment in the Townsville Region remained low over the period 2008-2013 (Graph 5), exceeding the Queensland unemployment rate in only two quarters during this period (Department of Employment 2014a). However, the latest unemployment data for the Townsville Region (for May 2015) indicates a labour force of 112,500 people and an unemployment rate of 8.9% (approximately 10,000 people) compared to an unemployment rate of 6.5% in Queensland (OESR, 2015b).

Graph 5
Unemployment Rate, Townsville Region 2008-2013



Source: Department of Employment 2014a

In 2013, Townsville City was identified as a home base location for 17% of the Bowen Basin FIFO mining workforce and 29% of the FIFO mining workforce from the North-West Mining Area, which is primarily centred on Mt Isa (KPMG 2013). The Labour Market Study (Appendix D) conducted for the project EIS identified labour capacity within the Townsville Region, with over 3,500 persons unemployed and looking for full-time work in 2011, of which 675 persons were qualified in a relevant field of study (ABS 2013).

Townsville City is also home to a major airport with security and facilities to accommodate international flights. The Townsville Airport is serviced by all major domestic airlines and operates regular charter flights to mines in Queensland through several smaller carriers.

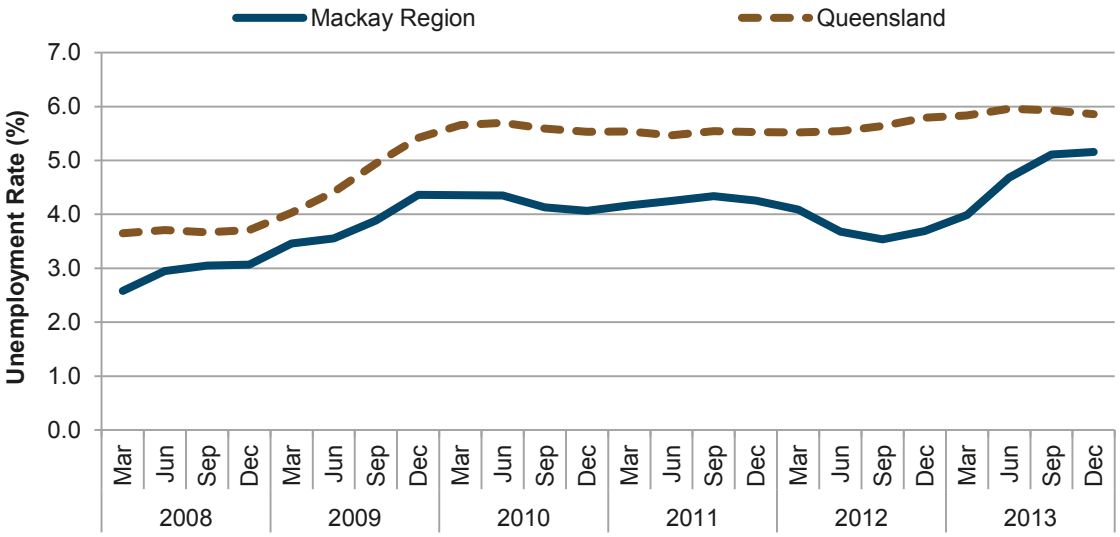
5.3.2 Mackay Region

The Mackay Region (Figure 8) is defined as the Mackay SA4. The Mackay Region includes the Mackay, Isaac and Whitsunday LGAs. The port of Abbot Point is located in proximity to the City of Mackay in the Mackay LGA and is identified as the likely port of export for project coal.

The Mackay Region had a 2011 Census population of 166,811 persons and is expected to grow at an average rate of 3.3% between 2011 and 2036(ABS 2013, OESR 2011). This high rate of population growth is largely the result of the extensive mining industry in the Bowen Basin, which has also provided the Mackay Region with income, investment, employment and infrastructure. The majority of townships in the Isaac LGA, including Moranbah and Clermont, were originally established as mining towns and have maintained a mining presence over the course of their development.

The unemployment rate in the Mackay Region was consistently lower than the Queensland unemployment rate between 2008 and 2013 (Graph 6).

Graph 6
Unemployment Rate, Mackay Region 2008-2013



Source: Department of Employment 2014a

The low unemployment rate in the Mackay Region can be partially attributed to the presence of a strong mining sector in the region. Approximately 14.4% of employed persons in the region were working in the mining sector in 2011, compared to 2.6% in Queensland. The mining industry contributed over 50% of GRP for the Mackay Region in 2011/2012 (MWREDC 2013). However, the latest unemployment data for the Mackay Region (for May 2015) indicates the region had a labour force of 96,900 people and an unemployment rate of 7.1% (approximately 7,000 people) compared to an unemployment rate of 6.4% in Queensland (OESR, 2015b).

Rapid mining industry growth has also created a number of associated adjustment problems for the Mackay Region. These include shortages in the skilled and unskilled labour market, congestion of rail and port infrastructure, economic specialisation and housing market volatility. Mining towns throughout the Mackay region experienced severe housing market volatility during the mining boom, leading to weekly rents of up to $2,000 for a three-bedroom house in some areas of the region and rapid price falls following the end of the boom in 2012 (McBryde 2013).

While there has been a lessening of these pressures in the Mackay Region since 2013, the upcoming ramp-up in LNG production and upstream supply to the production, together with the development of a number of large mining projects in the Galilee Basin, is likely to place

increased demand on labour supply, social infrastructure, housing and transport in the Mackay Region over the next five to ten years.

5.3.3 Summary of Key Base line Characteristics - Regional Area

Table 19 provides a summary of the key baseline characteristics of the Regional Area, that is, the two SA4s of Mackay and Townsville.

Table 19
Summary of Key Baseline Characteristics – Regional Area

Socio-economic Variable from TOR	Data Source	Summary
Total population	OESR 2015b	Estimated resident population of the Regional Area is 418,678 persons, with an annual growth rate of 1.8% over 5 years. 68.0% of the population is within working age (15-64 years).
FTE Population	ABS 2015	The OESR does not produce FTE estimates for the Townsville Region or the Mackay Region. However FTE population estimates are available for the Isaac LGA and for the Whitsunday LGA – Bowen only. In 2014 the Isaac LGA had an FTE population of 35,540 persons including 11,085 NRW. At the same time the Whitsunday LGA (Bowen only) had an FTE population of 14,090 including 465 NRW.
Indigenous population	OESR 2015b	There are 22,260 Indigenous persons within the Regional Area: 6,848 in the Mackay Region; and 15,412 in the Townsville Region. The percentage of Indigenous persons within the Regional Area is 5.8%.
Population growth	OESR 2015b	Population growth is expected to increase at 2.0% per year over the next 25 years, with the population of the Regional Area increasing to 645,379 by 2036.
Age and gender	OESR 2015b	The ratio of males/females in the Regional Area is uneven, with a higher proportion of men. The ratio of males to females in the Mackay Region is 109. In the Townsville Region the number of males is almost equal to the number of females. The Regional Area has a youthful age profile, with 64.4% of residents aged <45, compared to state average of 61.8%. Children <15 years represent almost a quarter of the population.
Family structures	OESR 2015b	There are 99,969 families within the Regional Area. Couple Family with Children is the dominant family structure, accounting for 44.4%.

Socio-economic Variable from TOR	Data Source	Summary
Education	OESR 2015b	49.7% of the Regional Area population aged 15 years and over completed Year 11 or 12 or equivalent, 33.0% completed Year 9 or 10 or equivalent and 7.2% did not go to school. Non-school qualifications are held by 51.8% of the population, with Certificates level qualifications being the dominant type (22.8%). The Townsville Region population has a higher level of education than the Mackay Region population.
Health and wellbeing	PHIDU, 2015	In the Mackay Region, 5.8 persons per 100 population aged over 18 years of age consumes levels of alcohol considered to be a high risk to health. In the Townsville Region 5.5 persons per 100 population aged over 18 years of age consume levels of alcohol considered to be a high risk. These rates are comparable to Queensland (5.3 persons per 100 population). 36,026 people aged 18 years and over in the Mackay LGA and 45,398 people in the Townsville Region are considered to be obese. This is equal to a rate of 33.1 people per 100 population and 33.4 people per 100 population respectively. The median age of death in the Regional Area is 78 years, which is slightly lower than the Queensland average of 80 years. The Townsville Region has a significantly lower provision of GPs per 100,000 persons than the Mackay Region - 94.6 and 112.4, respectively compared to 110.5 in Queensland.
Cultural and ethnic characteristics	OESR 2015b	The Regional Area is less culturally diverse than Queensland, with 12.1% of persons born overseas compared to 20.5% of the Queensland population. The dominant country of birth, outside of Australia, is the United Kingdom, Channel Islands and Isle of Man at 2.9%.
Income	OESR 2015b	Median total personal income of $34,507 per year in the Regional Area compared to $30,524 per year in Queensland. The Regional Area has a higher percentage of persons earning >$104,000 annually (7.3%) compared to Queensland (5.5%). Median total family income of $85,857 per year in the Regional Area, compared to $75,556 per year in Queensland. The Regional Area has a higher percentage of families earning >$156,000 annually (12.4%) compared to Queensland (10.9%).

Socio-economic Variable from TOR	Data Source	Summary
Labour force	OESR 2015b	The Retail Trade and Health Care, and Social Services Industries are the largest sectors of employment in the Regional Area. These sectors employ 10.1% of the regional labour force. Other key industries of employment are Construction (9.5%), Mining (8.3%) and Manufacturing (8.1%). The dominant occupation category is Technicians and Trades Workers (18.3%), followed by Professionals (14.4%) and Clerical and Administrative Workers (13.0%).
Housing costs	OESR 2015b	The Regional Area contains 110,032 occupied private dwellings. 83% of private dwellings are separate houses, 4.9% semi-detached dwellings, 10% apartments, 1.6% caravans and 0.3% other. 27.6% of houses within the Regional Area are fully owned, with 33.7% being purchased and 35.2% rented. The Regional Area has slightly lower median rent costs than Queensland, at $320/wk for a 3 bedroom house compared to $350/wk in Queensland. The Mackay Region has a higher median sales price for housing, at $385,000 for Total Dwellings compared to $342,000 for Total Dwellings in the Townsville Region.
Housing availability and affordability	OESR 2015b	There are 132,606 occupied dwellings within the Regional Area. In the 12 months to 31 March 2015 a total of 18,997 rental bonds were lodged in the Regional Area including 6,168 lodgements for a 3 bedroom house. The number of bond lodgements was greatest in the Townsville Region. In the 12 months ending 30 September 2014 there were 6,321 residential dwelling sales in the Regional Area. Within the Regional Area, Mackay Region had the highest median sale price with $385,000. There are 2,476 homeless persons in the Regional Area or 60.8 homeless persons per 10,000 persons. Within the Regional Area, Townsville Region had the highest rate of homelessness (70.8 persons per 10,000 persons).
Disability prevalence	OESR 2015b	The proportion of persons in the Regional Area in need of assistance with a profound or severe disability was 3.9%, compared to 4.4% in Queensland. The Townsville Region has a higher representation of disability at 4.3%, compared to 3.4% in the Mackay Region.

Socio-economic Variable from TOR	Data Source	Summary
SEIFA	OESR 2015b	In the Regional Area: • 17.5% of the population is within the least disadvantaged quintile; and • 16.1% of the population is in the most disadvantaged quintile Within the Regional Area, Townsville Region had the largest percentage of persons in the least disadvantaged quintile with 18.7%.
Crime (including domestic violence)	OESR 2015b	The most common crimes in the Regional Area were Offences Against Property; Other Offences and Offences Against the Person. Total number of crimes exceeded the state average. The incidence of crime is higher in the Townsville Region than the Mackay Region.
Regional Competitive Advantage	Findings of EIS stakeholder engagement	The Regional Area, particularly Townsville Region has significant competitive advantage including: • A number of key export ports e.g. Townsville Port and Dalrymple Bay. • A large labour market, with strong skills in mining related industry. • In the case of Townsville Region a diversified economy based on a number of pillars including tourism, defence and education. • Key transport networks - Gregory Developmental Road, the Peak Downs Highway, a number of regional airports and an international airport at Townsville.

5.4 OTHER HOME BASE LOCATIONS

This section describes the socio-economic setting of the anticipated workforce home base locations excluding Charters Towers LGA which was described in Section 5.2.1. Further detail is provided in Appendix B.

5.4.1 Cairns Region

The Cairns Region (Figure 8) is defined as the Cairns SA4. The Cairns Region includes the LGAs of Cairns, Cassowary Coast, Yarrabah Aboriginal Shire and the populous eastern section of the Tablelands LGA. Within the Cairns Region are the regional centres of Innisfail, Atherton and Port Douglas and the city of Cairns.

The Cairns Region had a 2011 Census population of approximately 224,000 persons, of which a high proportion (10.3%) are Indigenous. The population of the Cairns Region is expected to grow at an average annual rate of 2.4% between 2011 and 2036, lower than the corresponding rate of population growth for Queensland of 2.9% (QGSO 2013c).

The Cairns Region has an adequate range of social infrastructure and services however its geographic isolation from other significant centres in Queensland has limited the region's economic growth. Unemployment in the Cairns Region is consistently higher than the Queensland unemployment rate. Unemployment in the Cairns Region in May 2015 was 7.9%, compared to 6.5% for Queensland (OESR, 2015b).

The region has a low specialisation in mining with only 1.7% of the labour force employed in the mining sector. The appointment of a FIFO Coordinator in Cairns, under a joint scheme run through the federal government and Advance Cairns, signals a desire to expand mining services in the region as a means to increase population growth, employment and urban development. The government-funded FIFO Coordinator position ended its two-year funding cycle in 2013, but consultation indicates that the position is continuing under the auspices of Advance Cairns. The major outcomes of the FIFO Coordinator program in the Cairns Region have been the recruitment of 250 workers from the region for BHP Billiton Mitsubishi Alliance's Bowen Basin mines (Santhebennur 2013), and the establishment of an agriculture, civil, engineering and resources partnership which progresses training through cross-sector coordination.

5.4.2 Wide Bay Region

The Wide Bay Region (Figure 8) is defined as the Wide Bay SA4. The Wide Bay Region includes the LGAs of Bundaberg, Fraser Coast, Gympie, North Burnett, South Burnett and Cherbourg. Within these LGAs are the regional centres of Bundaberg, Hervey Bay, Maryborough and Gympie.

The Wide Bay Region had a 2011 Census population of 273,267 persons, with a high proportion (19.8%) of persons over the age of 65 years. The population of the Wide Bay Region is predicted to grow at an average annual rate of 1.9% between 2011 and 2036, however over half of this growth is predicted to occur in the 65 years and older age bracket (QGSO 2013c).

The latest unemployment data for the Wide Bay Region (May 2015) indicates the region had a labour force of 101,100 and an unemployment rate of 11.4% (approximately 11,500 people) compared to an unemployment rate of 6.5% in Queensland (OESR, 2015b).

The RDA WBB, in consultation with the local governments in the Wide Bay Region, has been working towards establishing the region as a "FIFO hub". The appointment of a FIFO Coordinator for the Wide Bay Region in 2012 has been a key step in driving this goal. The RDA WBB has commissioned a number of regional capability studies to inform an assessment of the long term sustainability of an increased FIFO workforce based in the region. These studies included:

- Resource Sector Workforce Mobility Study 2013;

- Workforce Development Jobs and Skill Matching Study 2013;
- Economic Impact of Resource Sector Workforce on Wide Bay Burnett 2013; and
- Draft Community Impact Study 2013.

These studies indicate significant planning in place to accommodate a FIFO workforce, and a strong local desire to see the region develop as a home base location for remote mining operations such as the project.

Housing availability for a FIFO workforce is addressed in the Community Impact Study (URS 2013), which states that there is no critical pressure on the residential property market, however it highlights that the Hervey Bay and Bundaberg rental markets were experiencing pressure in 2012. The most recent Broadhectare Land Study for the Wide Bay Region estimated that the region had approximately 16 years of residential land supply available, based on 2006 Census average household sizes and median population growth projections (OESR 2009). Consultation with RDA WBB revealed that there is significant land availability in the region, with several large residential estates currently under construction.

The Wide Bay Region has a range of health services for its population, with three public hospitals, four private hospitals, three community health care centres and a number of smaller rural medical centres. The Community Impact Study reports that community support services in the Wide Bay Region are under-resourced; however there is surplus capacity in the counselling sector (URS 2013).

The Wide Bay Region has two commercial airports, in Hervey Bay and Bundaberg, which offer domestic services to Brisbane, Sydney and regional centres. Consultation with RDA WBB noted that both airports have surplus capacity.

5.4.3 South East Queensland Region

The SEQ Region comprises the Brisbane GCCSA, the Gold Coast SA4 and the Sunshine Coast SA4. The SEQ Region is the most densely populated area in Queensland, and is the state's administrative, political and economic centre.

The SEQ Region had a 2011 Census population of approximately 2,881,000. The Brisbane GCCSA is expected to grow at an average annual rate of 2.4% between 2011 and 2036. Population growth over this timeframe is expected to be higher in the Sunshine Coast and Gold Coast SA4s, with a predicted average annual growth rate of 3.7% and 3.4%, respectively (QGSO 2013c).

The latest unemployment data for the SEQ Region (May 2015) indicates the region had a labour force of 1,697,000 and an unemployment rate of 6.3% (approximately 107,000 people) compared to an unemployment rate of 6.5% in Queensland (OESR, 2015b).

The SEQ Region is connected by a range of infrastructure and characterised by high internal mobility. The SA4s which comprise the SEQ Region are diverse and offer differing lifestyles while maintaining the high level of social and physical infrastructure characteristic of the SEQ Region.

The SEQ Region is the place of residence for over 56% of managers and 59% of professionals working in the Queensland mining sector (ABS 2013). The Gold Coast SA4 has an appointed FIFO Coordinator and a strong desire to increase its presence as a FIFO home base location. The Gold Coast SA4 will be host to the XXI Commonwealth Games in 2018, and a significant construction workforce is anticipated to be recruited from within the Gold Coast SA4 in the lead-up to this event.

The region has two major domestic/international airports, Brisbane Airport and Gold Coast Airport, and one smaller domestic airport, Sunshine Coast Airport. The Brisbane Airport Corporation is constructing a new runway at the Brisbane Airport, to be completed by 2020 and the Gold Coast Airport has an unused terminal, with recognised capacity for FIFO transportation (ABC News 2013).

6 POTENTIAL SOCIAL IMPACTS AND OPPORTUNITIES

This section presents the findings of the impact assessment process conducted for the SIA. The adopted impact assessment approach is consistent with the requirements of the SIA Guideline and specifically addresses Sections 6.2 and 7.2 of the TOR. All potential risks are detailed in Appendix C.

Management actions have been identified for each of the moderate to high risks. The identified management and mitigation actions will be supported by broader plans, policies and procedures that address specific issues or impacts in greater detail and which the proponent has committed to develop and implement as project planning progresses. These plans, policies and procedures are described in detail in Section 7.

Management actions have been identified through issue scoping consultation with key stakeholders, which is discussed in the EIS Consultation Section. Future engagement to be conducted as part of EIS feedback consultation during the EIS public exhibition period will enable key stakeholders to provide further comment on the identified management measures.

6.1 ECONOMIC IMPACTS

The project will have both direct and indirect (or flow-on) economic impacts on the project Areas of Influence. Economic impacts are described in detail in Appendix A. The economic impacts relevant to the social environment are discussed in this section.

6.1.1 Direct and Indirect Economic Impacts

The direct and indirect economic impacts of all phases of the project have been estimated for the local area, regional area and state.

The impact of the project on GDP/GSP, real wage rate and real household consumption at the state level has been modelled as part of the ECIA. The predicted impacts are all expressed as a percentage change from the base case (i.e. without project).

Table 20 summarises the economic impacts of the project on the State, Regional and Local Area. These figures are all annual average increases on the baseline levels.

Table 20
Summary of State, Regional and Local Impacts

	Unit of Measurement	CEW	OP1	OP2	DR
Queensland					
Industrial value added	$M	864.6	1,374.2	166.1	-44.4
Net taxes	$M	87.4	138.8	16.8	-4.5
GSP	$M	951.9	1,513.0	182.9	-48.9
Employment	FTE	2,764	2,082	194	-54
Real wage	%	0.39	0.28	0.02	0.00
Mackay and Townsville					
Industrial value added	$M	1,280.5	1,635.8	253.3	4.0
Net taxes	$M	83.7	102.2	9.4	0.0
GRP	$M	1,364.2	1,738.0	262.8	4.0
Employment	FTE	3,731	3,810	1,291	234
Real wage	%	0.39	0.28	0.02	0.00
Regional income	$M	1,253.0	1,022.6	128.0	2.1
Isaac and Charters Towers					
Industrial value added	$M	1,195.7	1,503.1	235.4	4.0
Net taxes	$M	6.5	1.0	0.1	0.0
GRP	$M	1,202.2	1,504.1	235.5	4.0
Employment	FTE	3,307	3,251	1,232	234
Real wage	%	0.39	0.28	0.02	0.00
Regional income	$M	100.8	42.7	5.6	0.0

Source: CIE-Regions (Refer Appendix A)

6.2 POPULATION AND DEMOGRAPHIC IMPACTS

Population growth is generally the single most critical factor in the manifestation of almost all social impacts associated with large scale projects. Population growth can also be a key driver of social change within a project's area of influence.

The following section examines the magnitude of population change predicted as a result of the project, and describes the predicted geographical distribution of this population change. Change in resident population and non-resident population is described.

6.2.1 Construction Phase Population Impacts

Permanent Resident Population Growth

Due to the remote location of the project site and the absence of any key communities in close proximity to the project site, the construction workforce will be employed as a non-resident, long distance commuting workforce. It is anticipated that the majority of the construction phase non-resident workforce will reside in their existing home base locations or move temporarily with their families in proximity of FIFO collection points. The project will therefore not result in any noticeable increase in the permanent resident population of the Surrounding Area or the Local Area.

It is difficult to predict how many employees and their families may move to FIFO collection points to take up employment on the project. The potential project-induced permanent population growth in FIFO collection locations can therefore not be predicted.

Non-Resident Population Growth

It is possible to predict the potential increase in the number of NRW in the Surrounding Area and the Local Area. The QGSO releases NRW population predictions for the Bowen Basin, Galilee and Surat Basins. The project is located in the Isaac LGA. The NRW estimates for the Isaac LGA are included in the Bowen Basin population report (QGSO 2015). The NRW estimates for the Galilee coal Basin relate to the Barcaldine Regional Council, and do not cover the project site. QGSO (2015) presents four NRW population projection series (Series A, B, C and D) for the Bowen Basin. All four series expect that the region's NRW population will continue to fall in the short term as a result of announced workforce reductions and mine closures, reaching between 14,230 and 14,640 persons by June 2015.

Series C, which includes new coal projects in addition to approved but not constructed projects, the Nathan Dam and Pipelines Project, and Santos GLNG Gas Field Development, anticipates an increase in NRW population to 20,520 persons in 2018, before tapering off to 19,220 persons in 2020, then increasing to 19,750 persons in 2021. Based on these projections, in 2018 (Project Year 3) the project NRW is estimated to represent 19% of the projected NRW population in the Bowen Basin at that time.

6.2.2 Operations Phase Population Impacts

Permanent Resident Population Growth

Given the remote location of the project site and the lack of any nearby communities, the project's operations phase workforce will be employed as a non-resident, long distance commuting workforce. It is, therefore, not anticipated that the project will result in any increase in the size of the permanent population of the Surrounding Area.

The project may result in a minor increase in the permanent population of the Local Area, in particular the Charters Towers Township. Less than 1% (29 persons) of the Operations

Phase 1 workforce is anticipated to reside permanently in Charters Towers. All of these potential employees are assumed to be existing residents. There are a number of young people who have left the Charters Towers LGA to seek employment opportunities in the mines of the Bowen Basin and beyond. It is assumed that these people may return to the region if there were equivalent employment opportunities. Potential employees from other regions of Queensland are unlikely to be attracted to Charters Towers as a home base location given that they would still be required to reside on-site for block shift periods.

It is impossible to predict how many potential employees are existing residents of a particular home base location and how many employees and their families will move from other areas of Queensland to the home base locations to take up employment on the project. Hence, it is impossible to accurately predict the project induced population growth in the home base locations. However, Table 21 provides estimates of project-induced population growth in the home base locations (excluding Charters Towers) based on the following assumptions:

- All potential employees would be new incoming residents to each home base location;
- The distribution of employees in home base locations is consistent with project assumptions;
- Each employee brings their family; and
- Average household size in the home base location is 2.6 persons per dwelling consistent with the Queensland household occupancy rate.

Table 21
Project Induced Population Growth – Home Base Locations

Home Base Location	Operations Phase 1 Workforce		Projected Population	Project Induced Regional Population Increase
	%	No.	No.	%
SEQ Region	40	1,250	3,250	0.1
Wide Bay Region	25	775	2,015	0.7
Townsville Region (excl. Charters Towers)	25	775	2,015	0.9
Cairns Region	10	290	754	0.3
Total	**100**	**3,090**	**8,034**	

Table 21 shows that under a worst case scenario where all potential employees relocate to the home base locations, the direct project-induced population growth in each location is less than 1%. The project is therefore not anticipated to have any significant impact on the size of the population in each home base location. Such population increases would be well within forecast population growth. Consequently the project is unlikely to have any noticeable impact on housing affordability and availability, and facility and service provision in the home base locations. The size of the workforce anticipated to reside in each location

is unlikely to have any impact on the social values of the existing community. It should also be noted that the selection of multiple potential home base locations was deliberately made to disperse the source of workers, thus reducing the potential for any significant population influx into a single location.

Flow-on employment associated with the project may give rise to a small increase in the population of the Local Area, in particular Charters Towers. However this increase is anticipated to be minor with no noticeable impact on the population size or demographic characteristics.

It will be important to monitor any population growth to identify population change in the Local Area, Regional Area and Home Base Locations as a result of this project and from cumulative effects of multiple projects. This will enable affected LGAs to adopt and implement controlled growth strategies which address the need for additional services.

Non-Resident Population Growth

During the operations phase of the project, from PY5 to PY30 the non-resident workforce will fluctuate by around 3,000 persons. Based on the QGSO Series C, NRW projections for the Bowen Basin, the project will constitute approximately 15% of the projected NRW population in 2021.

There will also be a cumulative increase in the number of non-resident workers within the Isaac LGA as a result of the nearby CCM&RP and the proposed Moray Power Station. An estimated 7,500 NRW are anticipated to be employed at the CCM&RP and the project once both are operational. This is equal to approximately 38% of the projected NRW population in the Bowen Basin in 2021.

The remote location of the project site combined with the size of the construction and operations workforces means that it is inevitable that the associated NRW population is large. However, as the NRW population will be confined to the on-site accommodation village and the accommodation village will have all necessary infrastructure and services to meet the needs of the NRW, this impact is considered to be relatively minor.

In summary, the project is predicted to have a minor influence on the size of the resident population in the Local Area, Regional Area and in the Home Base Locations. The project will significantly influence the size of the NRW population within the Surrounding Area and the Local Area as a result of the influx of NRW associated with the CEW Phase and the Operations Phase. The project will also have a cumulative impact on the size of the NRW population across the Local Area.

6.2.3 Demographic Change

At the time of the 2011 Census, there were 679 people in the Surrounding Area with a relatively even mix of males and females. Based on the demographic profile of the existing mining industry in Queensland, the majority of the workforce for the CEW and Operations Phases is anticipated to be male. Hence it can be expected that the number of males residing in the Surrounding Area will increase during both the CEW phase and the operations phase as a result of the presence of the accommodation village. There will also be a cumulative increase associated with the project and the CCM&RP.

6.2.4 Impact Management

The proponent has defined the following management outcomes for population growth and demographic change:

- Local Governments within the Areas of Influence remain informed of project workforce labour sourcing practices, including the size of the workforce, in order to enable proactive strategic planning for population growth; and
- State Government and Local Government within the Local Area remain informed of the size of the NRW associated with all stages of the project.

The following management actions address the impact of project induced population growth on the Areas of Influence.

Management Action 1
The proponent will keep local governments in the home base locations informed of project labour sourcing strategies and associated workforce numbers through regular face-to-face engagement. Where significant project induced permanent resident population growth is identified, the proponent will support the affected local government in responding to any demand generated by the population. This may include supporting local service delivery.

Management Action 2
The proponent will support sustainable residential population growth in regional centres by:

- Nominating selected FIFO locations based on demographic and labour considerations;
- Extending the Employee Wellbeing Plan to these selected FIFO locations, as appropriate;
- Developing an ongoing register of employee location preferences to inform any future decisions around FIFO collection points; and
- Ensuring regular communication with relevant FIFO coordinators and/or regional councils, in relation to project timing and project labour force requirements.

The careful selection of home base locations and the extension of employee support to these locations will likely encourage population growth. Regular communications with FIFO coordinators and/or regional councils will ensure that project induced population growth can be managed within existing service delivery strategies.

Management Action 3
The proponent will keep the state government, CTRC and the IRC informed of the size of the NRW population associated with the project.

6.3 EMPLOYMENT AND LABOUR MARKET DYNAMICS

Stakeholders consulted for the project identified a number of concerns in relation to potential labour force impacts. These concerns included:

- Sustainability of labour for non-mining industries;
- Jobs, qualifications, scholarships and training for locals;
- Opportunities for Indigenous employment; and
- Employment and training opportunities for young people.

The labour demand for the project is expected to have a number of impacts on the labour market across Queensland. This section addresses the following impacts:

- Employment growth;
- Indigenous employment growth;
- Labour draw; and
- Skills enhancement.

6.3.1 Employment Growth

Employment is an important indicator of economic activity and household welfare. The estimated employment change in terms of direct employment has been modelled for the CEW and operations phases of the project for the Townsville and Mackay Regions and Queensland.

In order to avoid overstating the economic benefits of the project, the economic analysis conducted for the project conservatively assumed a tight labour market, such that a proportion of the project workforce would be recruited from existing employment. The analysis estimated that approximately 2,764 persons during the CEW phase and 2,082 persons during Operations Phase 1 would be newly employed across Queensland as a result of the project (Table 20). Many of these gained jobs would be the result of backfilling as skilled workers shift to the project and unskilled or lower-skilled workers who were

previously not employed move into the jobs left behind. The gain in employment would be higher in the regional and local areas as individuals leave employment throughout the state to take up employment on the project and supply chain services in these areas. As shown in (Table 20), employment in the Regional Area (Mackay and Townsville Regions) is anticipated to increase by 3,731 persons in the CEW phase and 3,810 in Operations Phase 1. Employment in the Local Area would increase by 3,307 in the CEW phase and 3,251 in Operations Phase 1 (Table 20).

This represents a sustainable transition of labour resources towards efficient use. Through the use of FIFO employment arrangements this new employment will be shared across the state rather than concentrated in a single area.

6.3.2 Indigenous Employment Growth

The creation of Indigenous employment opportunities forms a key part of Commonwealth and state policy, notably through the Commonwealth *Indigenous Capacity and Development Program* and the *Solid Partners Solid Futures 2013* action plan in Queensland. The population of Indigenous persons in the Surrounding Area is low (1.2% compared to 3.6% for Queensland) however it is noted that there are substantial populations in some of the identified Home Base Locations, particularly in the Townsville Region. The project presents an opportunity to increase the size of the Indigenous labour force in Queensland and support Indigenous business development.

EIS consultation conducted with Jenagar, an Indigenous Registered Training Organisation (RTO) in Charters Towers, highlighted the following potential project opportunities:

- Provision of direct and indirect employment opportunities in a regional area;
- Upskilling of existing Indigenous labour force into mining and related occupations;
- Provision of apprenticeship and traineeship opportunities in a number of different fields, e.g. hospitality, mining, construction; and
- Capacity development for existing Indigenous businesses through procurement and training associated with the project.

The proponent will work with Traditional Owners and Indigenous groups to develop Indigenous business and employment opportunities. Integral to this process will be the establishment of partnerships between the proponent, regional Indigenous training and employment agencies and the Queensland government. These partnerships will be developed prior to the commencement of the CEW phase.

6.3.3 Labour Supply

The project has the potential to have both positive and negative impacts on the labour market in the project Areas of Influence. The positive impacts relate to:

- The provision of employment opportunities for those people currently unemployed;
- An opportunity to increase labour force participation rates in areas experiencing low labour force participation;
- An increase in the size of the labour force in home base locations through the additional population associated with project employees; and
- The provision of employment opportunities for sectors of the population traditionally underrepresented in the mining industry workforce e.g. Indigenous people, people with disabilities, mature aged people and women.

The negative impacts relate to the cumulative impacts of resource sector growth and the corresponding demand for labour.

A detailed assessment of labour supply in the Local Area and selected regions of Queensland was conducted as a component of the SIA (Appendix D). The Labour Market Study for the project informed preliminary planning of the project Labour Source Locations and Home Base Locations. Labour Source Locations were determined by analysing the characteristics of persons within each region in Queensland, based on a variety of factors, including:

- Number of unemployed persons and the unemployment rate;
- Proportion of unemployed looking for full time work;
- Level of qualifications held by the unemployed;
- Field of study of the unemployed;
- Level of qualifications held by persons employed in mining; and
- Occupation groupings of persons employed in mining.

This study was conducted towards the end of the mining boom when labour supply across the Local and Regional Area remained constrained. The findings of the Labour Study identified a need to look beyond the Local and Regional Area for project labour supply. The proponent acknowledges that with the slow-down in the mining industry the labour market across all regions of Queensland and particularly the Mackay and Fitzroy regions has softened considerably. There is now an available supply of labour in the Local and Regional Area.

The potential available labour supply in the Local Area for the project consists of:

- The current unemployed labour pool of 968 people consisting of 648 people in the Charters Towers LGA and 320 people in the Isaac LGA (based on December quarter 2014 labour force figures).
- The labour surplus - that is when there are more resident workers than jobs in the local workforce, which means that some residents have to work outside the locality. Conversely, a labour deficit means there are more jobs locally than working residents, so some workers must come from outside the local area to fill some local jobs. In 2011 the Charters Towers LGA had a labour surplus of 867 people. At the same time the Isaac LGA had a labour deficit of 7,709 people. The project provides an opportunity to attract these workers back to employment in the Charters Towers LGA.
- In addition, in 2011 there were 3,607 people in the Local Area engaged in part-time work. This included 1,328 people in Charters Towers LGA and 2,279 in Isaac LGA. Some of these people may seek to take up full-time employment. There is no available data to ascertain how many of these part-time employees would aspire to full-time work but it can be assumed that a percentage would and may also represent a potential labour pool for the project.

In the Regional Area the Labour Supply consists of:

- The unemployed labour pool of approximately 17,000 people, consisting of approximately 7,000 people in the Mackay Region and approximately 10,000 people in the Townsville Region (based on May2015 labour force figures).
- The labour surplus which is equal to 6,322 in the Mackay Region and 17,049 in the Townsville Region. The project provides an opportunity to attract these workers back to employment in the Regional Area. It should be noted however that the labour surplus in the Townsville Region is likely associated with the presence of the Defence Force and also the popularity of the location as a home base location for employees associated with resource operations in Asia, Far North Queensland, Outback Queensland and the Northern Territory.
- There is also a large pool of people engaged in part time work in the Regional Area.

These figures suggest a significant total labour surplus in the Regional Area. It is acknowledged that the skills and working intentions of the available labour force is not known, as skills data for the unemployed is not available. Whilst the total labour surplus appears significant it should be considered in the context of the anticipated cumulative growth in mining in the Galilee Basin. The project and the CCM&RP alone will generate demand for approximately 7,500 operations phase employees. There are obviously additional projects in the Southern Galilee Basin that will also seek to draw labour from this labour surplus.

6.3.4 Labour Draw

Although the recent slowdown in the mining industry will likely alleviate strain placed on local and regional labour markets by the project's workforce requirements, labour draw has been identified as a potential issue and conservatively assessed in the context of high labour demand across the state.

Construction and Early Works Phase

From a cumulative perspective the CEW phase of the project is likely to overlap with the latter stages of the construction phase for the nearby CCM&RP. Both projects are similar in size and components, have significant sized construction workforces and will likely draw from the same labour pool. Hence labour draw is considered a cumulative impact. Although the project's impact on labour draw is cumulative, it is still possible to assess this impact as the employment of the project is easily separated from that of the CCM&RP.

The use of a FIFO workforce during both the CEW and operations phase of the project suggests that employee turnover has the potential to be high, exacerbating labour draw.

During the CEW phase, the project will require an average annual workforce of approximately 3,249 persons. It is clear from an analysis of labour supply in the Local Area (Appendix D) that neither the Charters Towers LGA nor the Isaac LGA would meet the full labour demand of the project. The speed of the initial ramp-up of workers is anticipated to place strain on the labour markets from which project labour is sourced as these markets adjust to the increased demand.

In PY1, the lead construction contractor will be required to BIBO the workforce from Townsville and Emerald, with a small proportion of contractors assumed to be DIDO. Once the on-site air strip is commissioned (by the end of PY1), the workforce is anticipated to be almost entirely FIFO, with the exception of construction workers who may be required to bring their own specialised equipment to the site for block shift periods e.g. electricians. The requirement for contractors to make their own way to BIBO collection points is likely to limit the participation of residents from smaller regional centres in project construction. As such the resulting impact on centres with small labour markets is anticipated to be minimal.

The CEW workforce will generally be provided by the contractors and subcontractors working on the project. As construction work is temporary in nature, residents residing in the Local Area and looking for long-term employment would need to be prepared to move with the contractor to its next project. This is likely to limit the attractiveness of construction work for residents of the Local Area.

Operations Phases

During the operations phases it is assumed that labour markets will quickly adjust to the increased demand for labour given the dispersed nature of the labour source locations for

the project and the application of a targeted recruitment strategy (Section 7.2). Operations Phase 1 is not anticipated to draw labour from Clermont due to the limited labour pool in this township. Approximately 40 employees are anticipated to be sourced from the existing labour pool in Charters Towers, which may result in a short term, small scale impact on the skilled labour market in Charters Towers. As the project progresses it is anticipated that the project will draw some labour directly from the local high schools through apprenticeship and traineeship programs.

The project may have a cumulative impact on skill shortages at a national level if recruitment for the CEW Phase or Operations Phase 1 coincides with recruitment for any of the other significant mining projects in the Galilee Basin, notably the CCM&RP. The Department of Employment publishes annual state and national skill shortage lists. Table 22 presents the historical skill shortages for selected professions at a national level, from 2007 to 2014. Skill shortages at a national level were widespread during the mining boom of 2010-2012, but have decreased significantly in 2013 and 2014.

Skills in shortage in Queensland in 2013/14 (Department of Employment 2014c) included:

- Surveyor;
- Electrical engineer;
- Sheetmetal trades worker;
- Motor mechanic;
- Automotive electrician;
- Welder (first class); and
- Metal machinist (first class).

Table 22
Historical Skill Shortages, National

ANZSCO Title	National Skill Shortage = ▭							
	2007	2008	2009	2010	2011	2012	2013	2014
Engineering Manager	▭	▭		▭	▭	▭		
Surveyor	▭	▭	▭	▭	▭	▭		▭
Civil Engineering Professionals	▭	▭	▭	▭	▭	▭		
Electrical Engineer	▭	▭	▭	▭	▭	▭		
Mechanical Engineer	▭	▭		▭	▭	▭		
Mining Engineer (Excluding Petroleum)	▭	▭	▭	▭	▭	▭	▭	
Petroleum Engineer	▭		▭	▭	▭	▭	▭	
Geologist	▭	▭		▭	▭	▭		
Geophysicist						▭	▭	

ANZSCO Title	National Skill Shortage =							
	2007	2008	2009	2010	2011	2012	2013	2014
Civil Engineering Draftspersons and Technicians								
Electrical Engineering Draftspersons and Technicians								
Mine Deputy								
Automotive Electrician								
Motor Mechanics								
Sheetmetal Trades Worker								
Welder (First Class)								
Fitter								
Metal Machinist (First Class)								

Source: Department of Employment, 2014c

Given the number and scale of the projects in the Galilee Basin, there is potential for the labour market to return to a period of significant skills shortage, such as that experienced between 2010-2012 at the height of the mining boom. The extent of shortages would be dependent on the relative timing of any Galilee Basin coal mine developments.

6.3.5 Skills Enhancement

The CEW and operations phases of the project have the potential to act as a catalyst for skills enhancement in the communities of the Local Area and Home Base Locations. The proponent is committed to the direct provision of, and investment in, education and training opportunities within the Local Area, particularly Charters Towers LGA. Given identified skill shortages (Section 6.3.4) and the tight labour market, targeted education and training programs will be critical in order for the proponent to secure a sustainable labour supply for the project. The existing education and training market in the Local and Regional Area is described in Appendix B.

There are few post-school education and training opportunities available locally to residents of the Charters Towers LGA. Specifically there is little opportunity for residents (students and other) in the Charters Towers LGA to develop mine related skills. The secondary schools in Charters Towers LGA also have limited access to school-based training opportunities. Anecdotal evidence suggests school leavers either head to Townsville for university education or return to their homes to participate in the family agricultural business. Consultation with the DTTC revealed that the organisation is looking to partner with companies to provide work-readiness and technical training. Through partnerships with RTOs and the DTTC, the proponent will seek to deliver a range of additional training programs aimed at skilling local residents for employment in the CEW and operations phase of the project.

The project will also indirectly trigger skill enhancement in the Home Base Locations as the locations develop as labour supply points for all phases of the project. It is envisaged that RTOs in the Wide Bay, Townsville and Cairns Regions will diversify training opportunities to capitalise on the CEW and operations phase project opportunities.

As stated in Section 4.3, recruitment and management of the CEW phase workforce will be the responsibility of the lead contractor. The proponent will be responsible for the recruitment and training of the operations phase workforce. In situations where the proponent is not responsible for recruitment and training, the proponent will require contractors to have recruitment and training programs in place prior to the commencement of the applicable project phase.

The potential for skill enhancement in the Local Area, specifically Charters Towers LGA, is considered a positive impact. However investment from the proponent and a commitment to engaging with local training providers such as the DTTC is required for the benefits to be realised.

6.3.6 Impact Management

The proponent has defined the following management outcomes for project workforce recruitment and training:

- Recruitment and training programs to respond to existing and anticipated skill shortages of relevance to the project, and in doing so minimise labour force impacts on the non-mining sector;
- Training and skilling programs associated with the project produce benefits in the form of skill enhancement for residents of the Charters Towers LGA; and
- Recruitment and training programs enable participation of under-represented groups in the mining industry.

The following management actions address the impact of the project on employment and labour market dynamics in the SIA Areas of Influence. Through the implementation of the specific actions described below and the overarching management strategies described in Section 7 the proponent seeks to secure a sustainable supply of labour for the project.

Management Action 4
The proponent has committed to updating the project labour study (Appendix D) closer to the commencement of the project CEW phase. Alternative labour source locations will be considered if current labour market conditions persist into the construction and operations phase of the project.

Management Action 5

The proponent seeks to secure a sustainable supply of labour for the project through a targeted recruitment approach underpinned by investment in education and training. Prior to the commencement of the CEW phase, the proponent will:

- Seek to develop strategic partnerships with government and non-government training and education service providers at a state and regional level e.g. DTTC in Charters Towers;
- As part of this partnership approach, develop and implement a Recruitment Plan, and TSP (Section 7) for the CEW and operations phases of the project to increase the availability of labour in key occupations, support employment opportunities for vulnerable groups and contribute to long term labour sustainability for the project;
- Set employment and training targets for the CEW and operations phases of the project as part of the TSP and in consultation with key government agencies and RTOs, as project planning progresses;
- Develop and implement an Employee Wellbeing Plan (Section 7) to support a healthy workforce, manage workforce wellbeing and respond to the prevalence of high industry workforce turnover rates; and
- Provide updated workforce data to the Department of Education and Training (DET) prior to the commencement of recruitment for the CEW phase.

Management Action 6

The proponent is committed to optimising local labour supply to the project wherever feasible. The proponent will develop a Local Content Plan prior to the commencement of the CEW phase to encourage the participation of local and under-represented groups in the construction and operations phase workforces and the project supply chain.

The Local Content Plan will provide a detailed analysis of identified existing local enterprise and the skills / education base of residents in the Local Area, predominantly Charters Towers. The Local Content Plan will also identify strategies to build local capacity where deficiencies are identified. This may involve training, mentorship, recruitment and development programs which focus on Charters Towers Township as a first priority.

The workforce recruitment planning processes for all phases of the project, including the CEW phase, will give due consideration to the following actions:

- Preparation of a targeted Recruitment and Training Strategy for the project;
- Provision of a range of employment opportunities – potentially including school based traineeships, apprenticeships, graduate programs and mature aged placement programs;

- Offering part-time and/or flexible employment opportunities where practicable to encourage a higher rate of labour force participation, especially in relation to women;
- Exploring opportunities to enhance existing mining related skill development programs at local high schools in Charters Towers Township; and
- Exploring opportunities related to mentoring and career development services to secondary schools in Charters Towers Township to promote employment and career development pathways in the mining industry.

Management Action 7

The proponent will develop an Indigenous Participation Plan (IPP) for the project prior to the commencement of the CEW phase. The IPP is described in detail in Section 7.2.2. In summary the IPP will map details of existing Indigenous businesses and identify potential Indigenous labour supply across the Local and Regional Area and the identified labour source regions. The IPP will aim to identify particular CEW phase and operations phase job positions and supply work packages that will be targeted for Indigenous inclusion, and appropriate training and development programs will be outlined as part of the IPP to support this objective.

The IPP will articulate the proponent's commitments to supporting Indigenous employment on the project and the creation of Indigenous small business opportunities. These commitments include:

- A dedicated Indigenous liaison role for the project;
- Continuing to work with Traditional Owners and Indigenous groups to further develop Indigenous business and employment opportunities;
- Engaging with Indigenous employment agencies such as Jenagar and Myuma, and State agencies such as the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) to coordinate the provision of employment opportunities for Indigenous persons in the region, including the provision of structured training programs;
- Providing culturally appropriate employment opportunities and supporting and implementing initiatives to assist Indigenous persons to be employed by the proponent or project contractors; and
- Aiming to achieve Indigenous representation on the project matching Indigenous representation in the wider Australian population.

Management Action 8

Promoting diversity within the workforce is an important objective of the proponent's recruitment strategy for the project. The sizeable workforce required for the project operations phase together with the long life of the mine presents an opportunity to deliver employment opportunities for under-represented groups.

The proponent is committed to making employment opportunities accessible to those groups which are traditionally under-represented in mining workforces e.g. women, Indigenous and persons with a disability (PWD). All interested and appropriately skilled individuals will be considered for jobs on the project.

The remoteness of the project site coupled with the proposed employment arrangements i.e. FIFO will likely impact the attractiveness of project employment opportunities to different groups within the existing labour pool. The proponent will investigate the option of an off-site office in Charters Towers or Townsville, for administrative and community operations. This office would enable greater participation in the project by individuals with health or lifestyle conditions that limit their capacity to undertake FIFO work, e.g. persons with a disability.

The following general strategies are under consideration by the proponent to assist with retention of employees who are new to mining and/or from groups generally under-represented in the mining sector workforce e.g. women, Indigenous and PWD:

- 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; and
- Ongoing programs of on-the-job training, skills development, graduate development program and career path development within the workforce.

The proponent will provide additional information in relation to the range of initiatives to be adopted that target the recruitment and training of specific vulnerable groups closer to the commencement of the CEW phase. At such a time the labour market conditions will have been reassessed and a more comprehensive training plan for construction and operations will have been developed in consultation with key stakeholders.

6.4 EMPLOYEE HEALTH AND WELLBEING

6.4.1 Health Implications of Employment Conditions

This impact is primarily concerned with the effect of employment conditions i.e. roster arrangements, shift length, journey to work arrangements on the health and wellbeing of employees. As FIFO work practices become increasingly prevalent in the Australian mining sector, numerous studies have been conducted on the effects of these work practices on mental health, family relationships and lifestyle (Merideth *et al* 2014).

A number of participants in the SIA consultation conducted for the project identified concerns regarding the health and wellbeing of the FIFO workforce proposed to be based in the accommodation village. These concerns related to the potential for employees to experience:

- Social isolation leading to mental health issues;
- Stress and anxiety due to separation from families and friends and/or an inability to adjust back to family life when off roster; and
- Fatigue impacting performance and safety. This issue was noted as being particularly relevant to any employee who may be employed on a DIDO roster, such as residents of the Charters Towers LGA or residents who commute considerable distances to reach FIFO collection points.

The CEW and operations phase workforces will all be employed on a predominantly FIFO basis with a 7-day-on/7-day-off shift roster. The remote location of the project site and the use of FIFO employment arrangements may give rise to feelings of social and geographic isolation among the workforce during the life of the mine. This isolation has implications not only for the mental health of the workforce and family relationships, but also for the incidence of antisocial behaviour including drug and alcohol abuse, violence and disorderly conduct and crime. This impact has the potential to affect both the CEW and operations employees, however is likely to be more prevalent amongst operations employees due to the long term nature of their employment.

There are also emerging concerns about the ability of parents working away from home to adjust back into family life following a period of time in an accommodation village. The absence of one parent while on roster places additional pressure on the other parent. There are strong linkages between FIFO employee turnover rates and the health and wellbeing of the FIFO workforce (Kinetic 2012a,b; Henry et al 2013; Everingham et al 2013).

Long shift hours coupled with lengthy shift rosters has also lead to stakeholders concerns in relation to employee fatigue and the potential for on-site and off-site fatigue related incidents.

6.4.2 Impact Management

The proponent acknowledges the remoteness of the project site and seeks to deliver a positive and healthy working and living environment for its employees.

The proponent has defined the following key management outcomes for employee health and wellbeing:

- Workforce health and wellbeing is proactively supported whilst on shift roster and living at the accommodation village; and

- The health and wellbeing of an employee's family is supported in the Home Base Locations during periods when family members are on shift roster and away from home.

Management Action 9
During the CEW phase the proponent will develop, or expect the appointed contractors to have in place, employee wellbeing measures which address employee health and wellbeing.

An Employee Wellbeing Plan will be established prior to the commencement of the CEW phase. This Employee Wellbeing Plan will seek to address the social isolation issues described previously. Components of the plan may include:

- The inclusion of a comprehensive discussion of FIFO lifestyle management in the Induction programs for all employees;
- Provision to all employees, the *Guide for Long Distance Commuting (FIFO/DIDO) Workers* developed by the QRC; and
- The establishment of partnerships with FIFO Families or other FIFO support organisation to develop a project-specific support group in each Home Base Location.

The proponent's Employee Wellbeing Plan is described in Section 7.

Management Action 10
The workforce accommodation facility for project operations will include the following design elements to support positive employee health and wellbeing during shift roster periods:

- High speed internet connection in accommodation units to enable video calling;
- Sports areas and gym equipment to encourage healthy activities;
- Communal courtyards between accommodation units to encourage socialization;
- A nurse-led health centre with tele-health facilities; and
- Notice boards for advertising on-line support networks (e-support), village activities and visiting specialists.

In addition the proponent will investigate the potential opportunities to support the development of social connections between residents of the accommodation village at the proposed Carmichael Coal Mine and residents at the project accommodation village. This may include scheduled social and recreational events e.g. football games, barbeques.

Management Action 11
A Fitness for Work (FFW) Plan incorporating a FFW – Fatigue Management Procedure will be prepared by the proponent as a component of a Workforce Code of Conduct (Section 7).

The FFW - Fatigue Management Procedure will be applicable to all employees and visitors associated with the project.

Management Action 12
A FFW – Drug and Alcohol Procedure will also be developed as a component of the Workforce Code of Conduct (Section 7). The proponent will apply a rigorous drug and alcohol procedure cross the CEW and operations phases workforces, which will involve entry tests, random drug and alcohol sampling and fitness for work drug and alcohol sampling. The appointed lead CEW contractor will also be responsible for ensuring employee contractor compliance with this policy during the CEW phase.

Management Action 13
The proponent will conduct ongoing consultation with Queensland Health regarding medical services provision and project demand on health services in the region.

Management Action 14
The proponent will adhere to requirements of the *Coal Mining (Safety and Health) Act 1999* and *Work Health and Safety Act 2011* (WHS Act). The environmental amenity of the accommodation village on the project site will be managed in accordance with the provisions in the WHS Act as they are facilities that would be managed by the proponent and occupied by proponent employees.

Management Action 15
The proponent will register the proposed airstrip with the RFDS.

6.5 REGIONAL DEVELOPMENT

The findings of the economic analysis of the project (Appendix A) indicate that the project has the potential to deliver significant economic benefits to a number of regions in Queensland. These benefits include:

- Provision of goods and services to the project from businesses within the Local and Regional Areas, increasing supply chain opportunities;
- Increased economic activity for the State; and
- Increased real wages.

In addition the project has the potential to support regional development by:

- Stimulating population growth in home base locations; and
- Delivering improved infrastructure and services to the Surrounding Area.

6.5.1 Increased Supply Chain Opportunities

Expansion in the mining industry throughout Queensland has allowed for the growth of local suppliers and broader economic benefits. During the CEW and operations phases of the project, the project will offer substantial supply chain opportunities for businesses along the identified supply chain route. The underlying assumption for the project logistics study is that the majority of goods will travel from Townsville, through Charters Towers to the project site. Townsville and Charters Towers will therefore experience increased demand (both direct and indirect) for freight, transport, accommodation and mining-related businesses.

The proximity of Clermont and its established mining services industry will likely result in a moderate level of demand for these services arising from the project.

However, absent of strategic planning, the majority of these supply chain opportunities will likely be secured by larger firms in coastal cities, rather than small businesses in the local area. Without management, supply chain opportunities for local centres arising from the project are considered low during construction and moderate during operations.

6.5.2 Increased Economic Activity

The economic analysis for the project estimates that the project will contribute an average of $865 million annually to the Queensland economy during the CEW phase and $1,374 million during Operations Phase 1.

The Queensland economy as a whole will grow by an average of $952 million during CEW and $1,513 million during Operations Phase 1 as a result of the project. This includes indirect and flow-on effects on GSP. The Queensland economy will also benefit from royalty payments, which will equate to an annual average of approximately $188 million for the duration of Operations Phase 1.

The local area for the project will experience an annual average increase in industrial value-added of $1,195 million during the CEW Phase and an annual average increase of $1,503 million during Operations Phase 1.

6.5.3 Impacts on Other Relevant Markets

The project will have an impact on a number of key regional markets including:

- Labour market (discussed in Section 6.3);
- Education and training markets (discussed in Appendix B);
- Housing and land markets (discussed in Section 6.8); and
- Construction services (discussed in Appendix B).

Industry sector impacts have been considered in the ECIA (Appendix A).

The project is unlikely to impact on the extractive resources market. Where insufficient extractive material is available on the project site, the proponent will access off-site resources as necessary. This would be subject to separate assessment and approval.

Mining growth in the Regional Area will strengthen the competitive advantage of the region. The RDA Townsville and North West is committed to progressing regional development. The training and skilling opportunities to be offered by the proponent will support broader skill development across the region which will assist in long term regional development. Together the project and the CCM&RP will act as significant economic stimulants for the Local and Regional Area, helping to overcome some of the economic stagnation that has resulted from the slow-down in the mining industry. The approach to workforce employment arrangements i.e. FIFO from key home base locations, will support sustainable population growth across the Regional Area and protect communities from becoming susceptible to cumulative impacts associated with the boom-bust cycle of mining e.g. housing market failure.

6.5.4 Increased Real Wage

The real wage is the wage level accounting for inflation. Increases in the real wage are indicators of increases in welfare, as higher real wages denote higher income and greater purchasing power.

The project is anticipated to increase the real wage in Queensland by up to 0.4% as a result of the tight labour market and increased economic activity in the state. This peak increase in the real wage will occur during the CEW phase and fall over time as labour demand lessens during operations and the economic baseline rises. The project is anticipated to increase the real wage in the Regional Area and the Local Area by 0.4% (annual average).

As the workforce is dispersed across a number of home base locations, the impact of wage increases in each community will not be discernible. There is a low risk that disadvantaged groups would be adversely impacted by the real wage increases resulting from the project.

There is no management measure required for this impact. However, the proponent has committed to a TSP to ensure that labour demand from the project is managed in a sustainable manner.

6.5.5 Improved Infrastructure and Services for the Surrounding Area

One of the major benefits of the project to the Surrounding Area is the upgrading of infrastructure which will be required for the project. Improved road access and communications networks will not only directly benefit surrounding landholders, but decrease

the isolation of the Surrounding Area and provide indirect benefits as tourism, freight and economic activity expands west from the coast.

During the CEW phase, the project will require road upgrades and infrastructure installation. Any road upgrades will present an opportunity to benefit surrounding landholders through improved property access, and local residents of Charters Towers and Clermont by providing improved access between these towns.

Consultation with emergency services for the project EIS revealed that there are "black spots" along the Gregory Developmental Road in which communications technology, including mobile and satellite phones, do not receive signal. This creates substantial strain on emergency services responding to incidents along this road and was highlighted as a key area in which the project could contribute.

During operations, road and communications infrastructure will require upgrading and maintenance to enable the efficient functioning of the project over the life of mine. This ongoing infrastructure maintenance may not otherwise occur under regular public infrastructure programs, leading to an increased benefit for the Surrounding Area. Furthermore, the project workforce will require a number of services, including medical, mental health, recreation, communications and transport services.

6.5.6 Impact Management

The proponent has defined the following key management outcomes for project related regional development opportunities:

- Local and regional benefits of the project are maximised;
- Local businesses are given full, fair and reasonable opportunity to tender for and win project procurement contracts;
- Infrastructure upgrades and service provision associated with the project provide ongoing tangible benefits to the surrounding community; and
- Project FIFO arrangements support sustainable population growth in regional centres.

Management Action 16
During operations phases the project will be a predominantly FIFO operation. However, the proponent will investigate opportunities to support BIBO and, in the long term, FIFO out of Charters Towers in order to ensure residents of the Local Area have access to project employment opportunities.

Management Action 17
Prior to the commencement of the CEW phase the proponent will develop a Local Industry Participation Strategy (LIPS) (Section 7). The LIPS will address the *Queensland Resource*

and Energy Sector Code of Practice for Local Content (QRC Code of Practice) (QRC 2013) and include the proponent's Australian Industry Participation Plan (AIPP) and proposed Local Content Plan.

Management Action 18
EIS consultation identified a number of barriers to enabling local businesses full, fair and reasonable opportunity to tender for project procurement opportunities. These barriers included:

- No formal process for local engagement with the project;
- Limited business capability in Charters Towers and Clermont;
- Local businesses are unfamiliar with the engagement process; and
- Local businesses are concerned about financial risks of mining engagement.

The proponent will address these barriers by developing and implementing a Local Content Plan and appointing a local content officer position. This Local Content Plan will involve a suite of measures to encourage local business participation in project procurement opportunities.

The Local Content Plan will be developed in consultation with the CTRC, IRC and local businesses in conjunction with relevant government agencies and the Industry Capability Network (ICN).

Management Action 19
The proponent will engage with the CTRC in relation to the provision of support (financial and/or in-kind) to assist the CTRC with the development of infrastructure that enables the Charters Towers LGA to capitalise on the opportunities presented by the proximity of the project and the project's supply chain routes i.e. Gregory Developmental Road and Flinders Highway through to Townsville. This may include assisting the CTRC to access Royalties for the Regions funding. The proponent notes that the CTRC is continuing the development of quality industrial land in Charters Towers and is seeking to attract investment to build an industrial and logistics base. The release and promotion of industrial and logistics land in Charters Towers has been identified by the CTRC as one of the highest economic development priorities for the LGA.

6.6 COMMUNITY LIVEABILITY

Stakeholders consulted for the project identified a number of concerns in relation to the impact of the project on community liveability. In this section, community liveability refers to the environmental and social quality of an area as perceived by residents, employees and visitors. This includes accessibility, safety and health, local environmental conditions and the quality of social interactions.

The primary issues identified related to:

- The potential increase in the volume of traffic on regional road networks, particularly the Gregory Developmental Road, and the increased risk of traffic incidents causing harm to road users;
- The potential for the project to generate ongoing demands for emergency services at the expense of the local communities;
- The potential for shift rosters to adversely impact families;
- The potential changes in rural character and amenity; and
- The potential improvements in property accessibility and travel times to nearby communities.

6.6.1 Increased Traffic Movements and Reduced Road Safety

The project will give rise to increased traffic on regional routes during the CEW phase, particularly during PY1 when the airstrip is not operational and a portion of the CEW workforce is anticipated to be BIBO/DIDO. Traffic movements during the CEW phase will include over dimensional vehicles (ODV), and other large vehicles associated with the transport of project infrastructure and equipment (EIS Traffic and Transport Section) as well as BIBO and DIDO workforce movements.

Following the completion of the project airstrip, the majority of the workforce will FIFO from coastal centres, with the exception of workforce residing in the Local Area, who will BIBO if there is adequate demand for a service, and any short-term contractors employed from rural centres who may DIDO. It is unlikely there will be any long-term DIDO for the project, due to the remote nature of the project site and the long commute time for DIDO as opposed to the short flight time for FIFO.

During SIA consultation, a number of stakeholders raised specific concern about potential impacts to road safety along the Gregory Developmental Road. The Gregory Developmental Road is a significant tourist route in Central Queensland. Stakeholders were concerned that an increase in heavy traffic movements along the road may reduce road safety for tourists, especially “grey nomads” towing trailers who are not used to encountering large, heavy and often wide vehicles on regional roads. The most significant increase in traffic will be during the CEW phase.

There is potential for on-site and off-site accident and emergency situations to arise from traffic movements associated with the CEW phase, and these situations may impact on the delivery of existing emergency services, and compromise the safety and amenity of other road network users including existing CEW workforce.

The findings of the EIS Traffic Report (EIS Traffic and Transport Section) indicate no significant decrease in road safety as a result of the project.

Drivers on rural and remote roads are more likely to be involved in a fatal traffic incident than drivers in metropolitan area, and this risk may be increased as the additional traffic from the project leads to delays and frustrates drivers (CARRS-Q 2012). It is anticipated that this impact will be felt most prominently during the CEW Phase within and surrounding the township of Charters Towers, as congestion occurs on roads which have historically been lightly travelled.

During the operations phase of the project, traffic movements are anticipated to be significantly lower than in the CEW phase and it is expected that regular road users will have adapted driving practices to suit the changes in traffic conditions during the CEW phase.

6.6.2 Ongoing Demand for Emergency Services

There was some stakeholder concern that the project may give rise to long term demands on local and regional emergency services given the size of the non-resident workforce residing on the project site and the remote location of the site. Further, there were some concerns that any major unplanned accident at the mine site could place significant demands on local and regional emergency services, reducing service provision to residents in nearby communities e.g. Charters Towers.

The CEW phase of the project will generate a significant volume of traffic movements and require a large workforce. The expansion of population and traffic into the previously sparsely-populated and infrequently-travelled area along the Gregory Developmental Road between Charters Towers and Clermont will increase the need for emergency services in this area. The CEW phase is likely to result in an increase in demand on emergency services due to traffic incidents and related medical needs. As the onset of the CEW phase will occur rapidly and it is unlikely that the current emergency services capacity can be increased at the same rate, there is likely to be strain placed on emergency services for the early years of the CEW phase. Consultation with emergency services in Charters Towers revealed that these services have limited capacity to respond to traffic incidents along the Gregory Developmental Road (Section 5.2).

During the operations phase, vehicle movements are expected to be lower and on-site medical services will be well-established. The impact of the project workforce and traffic movements on emergency services capacity is therefore likely to be significantly less than during the CEW phase. In addition it is assumed that emergency services capacity will have increased to meet the CEW phase level of demand. Therefore emergency services will be well positioned to respond to the demands of the operations phases.

Major unplanned accidents that may occur on the project site have been discussed in the EIS Hazard and Risk Section.

It is possible that the project may benefit community volunteerism in the Surrounding Area with resulting positive benefits for emergency service providers. The proponent, through the workforce, could assist with resourcing volunteer organisations e.g. the rural bushfire service by supporting the release of employees for emergency service activities or providing days off for workers to volunteer.

6.6.3 Change in Rural Character

Landowners within the Surrounding Area raised concerns that the project would result in significant and adverse changes in the rural character and amenity of the Surrounding Area. Concerns related specifically to:

- The visual impact of the project on rural character;
- Potential noise, dust and vibration emissions from the project and their resulting impact on rural amenity; and
- Potential environmental impacts which may lead to a reduction in the quality of the natural environment.

The change in land use of the project site from rural grazing land and unused bushland to a large-scale mining operation will alter the rural amenity of the Surrounding Area. This impact will be most noticeable during the CEW phase, as the rapid ramp-up to production will bring significant changes to land use and road use in a short period of time. It is worth noting that the CCM&RP to the south of the project site will likely have impacted the rural amenity of the region prior to the commencement of the CEW phase and as such the project would be a continuation of changes to amenity already occurring in the area. This assessment conservatively considers the impact on the amenity existing prior to any mining taking place in the Surrounding Area.

The key issue for consideration in managing project impacts on social amenity is that the surrounding landholders are long-term residents and accustomed to the rural amenity of the Surrounding Area. The changes in rural character resulting from the project are significant and unavoidable.

During operations, the effects of the project on the amenity of the Surrounding Area will not be as noticeable as during the CEW phase, because of a decrease in traffic volumes on the local and regional road network and the normalisation of mining activities in the Surrounding Area.

The EIS Visual Impact Assessment (EIS Visual Amenity Section) indicates that there will be negligible visual impacts as a result of the project. No part of the project will be visible from the Gregory Developmental Road.

Further, the findings of the Air Quality Assessment (EIS Air Quality Section) and Noise Assessment (EIS Noise and Vibration Section) conducted for the EIS confirmed that predicted air quality and noise and vibration impacts will be within the relevant criteria at all sensitive receptors. The closest sensitive receptors include the Moonoomoo and Hyde Park homesteads and the Dooyne Outstation.

6.6.4 Changes in Accessibility

During SIA interviews, a number of stakeholders noted that the project would improve accessibility to the landholdings to the west of the Gregory Developmental Road. It was also noted that improvements to local and regional road networks would result in a significant reduction in travel time between landholdings in proximity to the project site and regional centres i.e. Charters Towers.

6.6.5 Impacts on Property Management

The project will require the directly affected landowners to change their property management practices. One parcel of land directly affected by the project is used as a beef fattening block. The existing landowner resides near Clermont and not on the affected property. However, the loss of this property from the landholding will require the landowner to make changes to their property management practices and business practices. The majority of directly affected land forms part of the Hyde Park landholding. Consideration of suitable mitigation and management actions will be included in the confidential negotiations undertaken between the directly affected landowners and the proponent in relation to project site access.

The project will not impact the property management practices of the adjoining landowners. The proponent will develop an ongoing program of landholder liaison for the preconstruction, CEW and operations phases of the project to ensure any off site impacts such as property management impacts are identified and responded to.

Potential changes in property values may also occur as a result of the project. It is difficult to determine whether these impacts will be positive or negative. Potential negative impacts may be driven by the change in land use from agriculture to mining and perceived amenity impacts. However mining does have the potential to improve surrounding property values as a result of improvements to accessibility (better quality road networks); telecommunications; and emergency response.

The project will not impact residential, commercial or industrial land uses as these land uses are not located in proximity to the project site.

6.6.6 Loss of Connection to Place

The change in land use from pastoral or agricultural to mining has the potential to adversely impact landholders with strong ties to the rural or farming way of life in the Galilee Basin. These landholders may experience distress adapting to the changing land use. None of the landowners consulted for the project identified any significant concern in relation to loss of connection to place. There are no landholders residing within the project area. One family currently resides on land directly affected by the project, however the residence is located beyond the project site boundary. During EIS consultation this landholder did not identify any strong connection to the land directly impacted by the project.

The change in land use also has the potential to impact Indigenous people with cultural ties to the land. The findings of consultation conducted with landowners for the EIS suggests there is no contemporary use of the project site by Indigenous people. The project site is not actively utilised by Indigenous people for the collection of flora and/or fauna.

The project site includes land that may be subject to native title and is within the Wangan and Jagalingou People's registered native title claim application (Claim No. QC04/6; Federal Court No. QUD85/04). The proponent will negotiate with the Wangan and Jagalingou People, the registered Native Title claimants, in accordance with the requirements of the *Native Title Act 1993* (Commonwealth).

6.6.7 Changes in Community Liveability in Home Base Locations

The project is unlikely to result in changes in community liveability in the home base locations. This is due primarily to the small size of the project induced population growth in the home base locations. In each home base location, the influx of a small number of people who are employed elsewhere on a block rotational basis is unlikely to adversely impact:

- Community values and identity e.g. in Charters Towers its tourism value, rural character and strong gold mining history;
- Social connections;
- Perceptions of safety and security; and
- Community and individual aspirations.

There is a low risk that project induced population change in the home base locations will result in changes in crime levels. This is because the population change in any one location is likely to be very small and any change in crime rates in home base locations would not be

able to be solely attributed to the project. Further this is largely a cumulative impact associated with existing community dynamics, and the contribution of the project cannot be reasonably quantified.

It is possible that the project may benefit community volunteerism in the Surrounding Area and the home base locations in the following ways:

- The potential for additional volunteers as the population grows, primarily through workers' partners and children; and
- The introduction of a wider range of skills from the new population to add diversity to volunteering efforts.

6.6.8 Indigenous Peoples and Cultural Impacts

Consultation with landowners has identified that there is no contemporary use of the project site by Indigenous people. The project therefore has a low risk of impacting Indigenous use of the project site. The project site includes land that may be subject to native title and is within the Wangan and Jagalingou People's registered native title claim application (Claim No. QC04/6; Federal Court No. QUD85/04). The proponent will negotiate with the Wangan and Jagalingou People, the registered Native Title claimants, in accordance with the requirements of the *Native Title Act 1993* (Commonwealth). These negotiations will involve due consideration of Indigenous cultural property issues.

6.6.9 Impact Management

The proponent has defined the following key management outcomes for community liveability:

- Minimise the risk of accidents along the Gregory Developmental Road and Flinders Highway during the CEW phase;
- Local emergency service personnel are fully informed of the project timing and have the necessary equipment and personnel to respond to project related off-site incidents;
- Project construction and operations does not place additional pressure on emergency service and health service providers;
- Project induced population growth in workforce home base locations does not reduce accessibility to emergency services for the existing population;
- Impacts on landholdings outside of the project site are minimised; and
- The amenity changes associated with the project do not unduly distress surrounding landholders.

Management Action 20

The proponent will engage with Adani Mining in relation to ensuring regional emergency service providers are adequately resourced to respond to off-site project related incidents. Adani Mining has committed to the establishment of an Emergency Services Consultative Committee for the CCM&RP (Adani 2014). The proponent will engage with Adani Mining in relation to the proponent's participation in the committee in order to remain informed of the initiatives being progressed for the CCM&RP.

Management Action 21

FIFO workforce arrangements and the provision of on-site accommodation, medical and recreational facilities will reduce local traffic impacts around the proposed mine and limit the project's impact on local and regional services and infrastructure during the CEW phase. The provision of BIBO services between Emerald and the project site and Townsville and the project site during PY1 will limit the number of CEW phase workers commuting on the regional road network prior to the construction of the project's airstrip.

Management Action 22

The proponent will develop and implement Traffic Management Plans (TMPs) for the CEW and operational phases of the project. The TMPs will include a range of management and mitigation strategies to address the potential impacts of the project on road safety, emergency response times and other matters. TMPs are discussed in more detail in Section 7.5.2.

Management Action 23

All stages of the project will be subjected to an Emergency Response Management Plan (ERMP) (EIS Hazard and Risk Section) that will be developed with the relevant emergency service providers prior to commencement of the CEW phase. Emergency response planning will be conducted with the QAS, QFES and QPS.

The proponent will make resources available to emergency service providers when at the mine site, ranging from office space, to use of equipment. This will form part of the Project Servicing Strategy (Section 7.5.1).

The proponent will also work in cooperation with Adani Mining to ensure an integrated approach to emergency response planning including the coordination of response and sharing of resources where appropriate.

Management Action 24

The proponent will proactively engage with local emergency service providers and traffic authorities prior to and during the CEW phase to ensure that all parties remain informed of key CEW activities, anticipated traffic movements and road closures, to allow forward-planning by emergency services.

Management Action 25
The proponent will provide a one-off donation of a heavy vehicle rescue kit to QFES in Charters Towers to improve local emergency service response to CEW incidents.

Management Action 26
The proponent will coordinate project infrastructure upgrades, including communications upgrades, with local emergency services to enable cost effective expansion of emergency service communications along the Gregory Developmental Road.

The proponent will also seek to work in cooperation with Adani Mining to ensure efficiencies in the delivery of infrastructure upgrades.

Management Action 27
The proponent will develop a Stakeholder Communications Strategy (SCS) for the project. The SCS will provide for communication with road users regarding potential traffic changes and delays during the CEW phase.

Management Action 28
The proponent will consult with the IRC, CTRC, Department of Transport and Main Roads (TMR), QPS, Adani Mining, and the Road Accident Action Group (RAAG) to determine the need or otherwise for additional driver rest areas along the primary project supply routes. Discussions will consider the need for driver rest areas to accommodate both heavy and light vehicles.

Management Action 29
The proponent will develop an ongoing program of landholder liaison for the preconstruction, CEW and operations phases of the project. This program will form part of the proponent's SCS (Section 7.6). The program for landholder engagement will include engagement:

- In relation to project design measures to minimise impacts;
- To keep landholders informed of pre-construction, CEW and operation phase activities; and
- To assist directly affected landholders in managing the impacts of the project on their property management practices.

Management Action 30
The proponent will implement a complaints handling procedure at the commencement of the CEW phase to ensure any complaints from landholders and other stakeholders are handled quickly and effectively. The complaints handling procedure will form part of the proponent's SCS (Section 7).

Management Action 31
The proponent will seek to complete the project CEW phase with minimal visual disruption to the rural character of the Gregory Developmental Road and the rural character of the landscape surrounding the project site.

Management Action 32
The proponent is committed to supporting the participation of the Operations Phase workforce in volunteer roles across the Surrounding Area, where feasible. Employee policies that enable emergency services personnel to be released from duties to attend emergency calls and to perform crucial volunteer actions e.g. assist with the rural bushfire service will be developed for all phases of the Project.

Management Action 33
The proponent will negotiate with the Wangan and Jagalingou People, the registered Native Title claimants, in accordance with the requirements of the *Native Title Act 1993* (Commonwealth).

6.7 COMMUNITY INFRASTRUCTURE AND SERVICES

Major projects such as Project China Stone have the potential to result in significant demographic changes due to an influx of workers. Increased populations of resident and non-resident workers can place pressure on social and community services and infrastructure. Stakeholders raised few issues in relation to the project's impact on community infrastructure and services. This is likely due to the remote location of the project site, the use of a non-resident, long distance commuting workforce and the accommodation of the workforce in an on-site accommodation village.

Emergency service providers (QAS, QPS, QFES) in both Charters Towers and Clermont did indicate some concern that the project may directly increase demand for emergency services in the Local Area. The SIA risk assessment process identified a high unmitigated risk of this impact occurring. This impact is discussed in Section 6.6.2.

Section 6.2 describes the anticipated project induced population growth and the geographical distribution of this population growth during the CEW and operations phase of the project. The use of a long distance commuting workforce means that any project induced population growth can be distributed across a number of different locations. Due to this geographical distribution of the workforce, project induced population growth in any one home base location is predicted to be minor - less than 1% of the total population of the location. Any potential impacts associated with population growth will be diluted, rather than concentrated in a single area. The project has a low risk of generating any discernible and additional demand on community facilities and services in the home base locations given the size of the predicted project induced population growth in each home base location.

It is inevitable that the non-resident workforce will generate demand for a number of services e.g. policing, medical, and financial whilst residing at the on-site accommodation village. Police from Clermont or Charter Towers may be required to serve notices on employees at the mine site, or visit employees to provide emergency information. Workers may require medical attention, prescriptions for specialist health services, basic medical or prescription services whilst on the project site.

To manage these potential demands, the proponent will develop a Project Servicing Strategy. The purpose of the Project Servicing Strategy is to ensure the coordinated delivery of services, including health services, for the project and the project workforce. The proponent is committed to ongoing consultation with the relevant service provision agencies (government and non-government) in the development of the Project Servicing Strategy. Further details of the Project Servicing Strategy are provided in Section 7.5.1.

6.7.1 Impact Management

The proponent has defined the following key management outcomes for community infrastructure and services:

- Local emergency service personnel are fully informed of the project timing and have the necessary equipment and personnel to respond to project related off-site incidents;
- Local Governments within the Areas of Influence remain informed of project workforce labour sourcing practices, including the size of the workforce, in order to enable proactive strategic planning for population growth; and
- Demand for off-site services that is generated by the non-resident workforce whilst accommodated on site is minimised.

The following management actions are proposed to manage any potential impacts on community facilities and services in the project Areas of Influence. Measures to support the provision of emergency services are also identified in Section 6.6.9.

Management Action 34
The proponent will develop a Project Servicing Strategy for the commencement of the CEW Phase. The Project Servicing Strategy will apply to all phases of the project.

Management Action 35
The proponent will keep local governments in the home base locations informed of project labour sourcing strategies and associated workforce numbers through regular face-to-face engagement. Where significant project induced permanent resident population growth is identified the proponent will support the affected local government in responding to any demand generated by the population.

6.8 HOUSING AND ACCOMMODATION IMPACTS

Given the use of a non-resident long distance commuting workforce for both the CEW and operations phase of the project, there is a low risk that the project would adversely impact housing markets and short term accommodation supply in the Local or Regional Area, or in the potential home base locations. Appendix B provides an overview of the housing markets in the Local and Regional Area and the potential home base locations. The potential for impacts are discussed in relation to the construction and operations phase in the following sections.

6.8.1 Construction Phase Impacts

Short-Term Accommodation

There will be no requirement to house the CEW phase workforce in existing accommodation in the Local Area as the on-site workers accommodation village will be available to all CEW phase workers. The use of an on-site worker accommodation facility significantly reduces any potential for the CEW phase of the project to generate demand for short term accommodation in the Local and Regional Area. Experience in the Bowen Basin during the mining boom showed that sustained high levels of demand for short-term accommodation can result in reduced accessibility to accommodation for tourists due to either a lack of available rooms and/or inflated room prices. In a number of cases sustained demand for short-term accommodation has also resulted in the transition of low cost caravan parks to short-term motelling.

A logistics study has been undertaken for the project. The logistics study indicates that the majority of goods for the CEW phase will be sourced from within the Regional Area predominantly the regional centre of Townsville. Given the travel time from Townsville to the project site it is likely that the project may generate periodic demand for short term accommodation in Charters Towers. Charters Towers has a generous range of short-term accommodation options (Appendix B) reflecting its role as a tourist destination. Hotels and motels within the Charters Towers Township are largely utilised by corporate travellers, while the caravan parks and camping sites throughout the LGA are frequented primarily by “grey nomads” and driving tourists. The Charters Towers Visitor Information Centre reported during EIS consultation that an estimated average of 150,000 tourists visit the LGA each year. While there has been a slight drop in tourists visiting the township in 2014, this has not been as severe as in other Queensland regions and demand has remained strong. Despite strong demand, it was reported that there is surplus capacity in short-term accommodation, especially within the hotels and motels in Charters Towers Township.

Given the supply of short-term accommodation in Charters Towers and the existing surplus, there is a low risk that the project will reduce accessibility to short-term accommodation options for the tourist industry either through reduced availability or inflated room prices.

Demand for Housing

Increased economic activity associated with the CEW phase activities may attract some people to the Local Area, for example to work in local businesses servicing construction activities. This may affect Charters Towers and Clermont, and to some extent Moranbah, but is not likely to lead to population growth in excess of that already forecast for these towns. This is because the population projections undertaken by OESR factor in the effects of major projects.

Given the nature of the anticipated CEW phase housing demand, the project has a low risk of impacting housing for low income earners and Indigenous people.

In the larger centres of Charters Towers, Townsville and Mackay, any additional residents due to the project, would only comprise a very small proportion of existing population.

6.8.2 Operations Phase Impacts

Housing Demand

Project induced permanent resident population growth is the primary driver of demand for housing and accommodation. The size and geographical distribution of the project induced population growth has already been described in Section 6.2. Under a worst case scenario where all project employees are new residents of the home base locations, then the project is anticipated to result in less than 1% population growth in the workforce home base locations. The size of this population growth means that any impacts on housing markets (including changes in housing and rental affordability and availability) in the home base locations are unlikely to be discernible. There is a low risk that project induced population growth in the project Areas of Influence will impact on access to housing for Indigenous people or low-income individuals and families.

Increased economic activity associated with the proposed mine may create additional employment opportunities in businesses located within the Local and Regional Area, which provide support services to the mining sector. There are existing businesses in Clermont and Charters Towers that currently provide services to the proponent as part of exploration activities. An initial analysis of small business capability in the nearby centres of Clermont and Charters Towers was undertaken for the SIA (Appendix D). The findings of the capability assessment indicate that there are a number of businesses in the Local Area with capacity to provide goods and services to the project. It is expected that businesses in the Local Area will continue to be engaged to provide goods and services during the operations phase of the project which may lead to an increased requirement for local business employees and consequently housing.

Given the nature of the anticipated CEW phase housing demand, the project has a low risk of impacting housing for low income earners and Indigenous people.

Short-Term Accommodation

The project has a low risk of impacting short-term accommodation demand in the Local and Regional Area or home base locations during the operations phase of the project. Any demand is likely to be associated with new residents moving into the area and using short-term accommodation whilst they find suitable permanent housing.

6.8.3 Impact Management

The findings of the SIA indicate that there is a low risk that the project will have any discernible impact on the housing market and short term accommodation provision in the project Areas of Influence. Despite this, the proponent will take undertake a number of actions to ensure that the project does not adversely impact housing and short-term accommodation supply in the project Areas of Influence.

Management Action 36

The proponent will keep local governments in the home base locations informed of project labour sourcing strategies and associated workforce numbers through regular face-to-face engagement. Where significant project induced permanent resident population growth is identified, the proponent will support the affected local government in responding to any housing demands generated by the population. This may include assisting the respective local government to identify and prepare land for subdivision and development.

Management Action 37

The Queensland State Government currently plays an active role in addressing cumulative impacts in regional resource towns. The proponent will engage at regular intervals with the State Government to ensure the State Government remains informed of project labour sourcing strategies and associated workforce numbers.

6.9 CUMULATIVE IMPACTS

There are currently no operating mines in the Galilee Basin. Table 23 summarises the mines and related projects approved, or in the approvals pipeline, that are located in the Northern Galilee Basin. The location of these projects is shown in Figure 2.

Table 23
Proposed Northern Galilee Basin Projects

Project	Proponent	Local Government Area	Expected construction commencement	Peak production	Peak Operations employment
CCM&RP	Adani Mining Pty Ltd	Isaac Charters Towers	2016	60 Mtpa (ROM)	3,800
China Stone	MacMines Austasia Pty Ltd	Isaac	2016	55 Mtpa (ROM)	3,391
Moray Power Project (MPP)	Moray Power Pty Ltd	Isaac	2015	150 MW	50

The potential cumulative social impacts of the project are, therefore, related to the adjacent CCM&RP and the associated Moray Power Project (MPP) which is proposed to supply power to the CCM&RP. The MPP has a peak construction workforce of 400 people and operations workforce of 50 people. Workers are proposed to be housed in the CCM&RP accommodation village, on a FIFO basis, similar to the CCM&RP. Due to the relatively small workforce and the short construction phase timing (2 - 3 years), potential additional cumulative social impacts from the MPP are considered to be relatively minor in comparison to the CCM&RP and Project China Stone.

While the recent slowdown in the mining industry has led to a decrease in the severity of the cumulative impacts associated with mining, the project's socio-economic impacts have been conservatively assessed in a context of high mining-sector growth. Given the long-term nature of the project (in the order of 50 years) and the cyclical nature of mining, it is considered likely that a period of high mining-sector growth will again occur during the mine life. The conservative approach to the assessment of socio-economic impacts therefore identifies the most significant potential socio-economic impacts of the project.

Table 24 provides an analysis of the potential significant cumulative socio-economic impacts of the project. The analysis considers unmitigated impacts. An SIA section reference is provided for relevant management responses that are already being implemented to manage the project's socio-economic impacts and will also assist to manage potential cumulative impacts.

Table 24
Potential Cumulative Socio-economic Impacts

Cumulative Impact	Description	SIA Cross Reference to Management Response
Non-resident worker (NRW) population growth	Approximately 7,200 NRW are anticipated to be employed at the CCM&RP and the project once both are operational. This is equal to approximately 38% of the projected NRW population in the Bowen Basin in 2021 based on QGSO (2015) Series C projections.	Section 6.2.4
Permanent resident population growth	Both the CCM&RP and the project propose non-resident workforces based on a non-resident, long distance commuting workforce. It is likely that some of the CCM&RP workforce will reside in the same home base locations as those proposed to be used for the project. Subsequently there is a low risk that a home base location may experience a cumulative population increase as a result of Galilee Basin projects. However, it is not possible to quantify this impact for the reasons presented in Section 6.2.	Section 6.2.4
Labour Supply and Labour Draw	From a cumulative perspective the CEW phase of the project is likely to overlap with the latter stages of the construction phase for the nearby CCM&RP. Both projects are similar in size and components, have significant sized construction workforces and will likely draw from the same labour pool. As both projects also have significant operations workforces there is a high risk that tight labour market conditions will develop across the Regional Area until such time as the operations phase workforces of both projects stabilise. There is a high risk that this labour demand will also result in moderate labour draw from non-mining sectors.	Section 7.2 and Section 7.4.
Changes in rural character and amenity	Both the CCM&RP and the project are located in an existing rural area. The construction of both projects will significantly and permanently change the rural character of the Surrounding Area. Whilst exploration for both projects has been ongoing for some time, extensive mining has not been undertaken in the surrounding Area. This change in rural character is an inevitable part of the transition from a rural landscape to a mining landscape.	Section 6.6.9
Demand for community infrastructure and services	The CCM&RP and the project will place increasing pressure on transport networks and emergency services in the Local and Regional Area.	Section 7.5.1, Section 7.5.2, Section 7.6

Cumulative Impact	Description	SIA Cross Reference to Management Response
Housing	The CCM&RP and the project have a low risk of generating demand for permanent housing or short-term accommodation in the Local Area. This is because both projects are located in a remote area and will be predominantly FIFO operations. Any potential housing impacts would be more likely to occur in the home base locations. Any demand for housing will be associated with project induced population growth, which has been described in Section 6.2. Both projects involve the dispersal of workforce at a number of home base locations. Given the similarities in the project workforces and their home base locations, cumulative population growth in home base locations is likely to be less than 2%, which would have a low risk of adversely impacting the housing market.	Section 6.8.3

Consultation did not identify any evidence of longitudinal cumulative impacts. The Townsville Region, in particular the communities of the Charters Towers LGA have not been subject to successive periods of consultation in relation to resource projects.

6.10 SUMMARY OF IMPACTS AND MANAGEMENT MEASURES

The proponent has developed a range of strategies to avoid, manage or enhance the predicted socio-economic impacts of the project. Strategies have been designed to operate as a cohesive collection of procedures. As such, several strategies may address one impact, and several impacts may be addressed by each strategy. Table 25 shows which strategies and project design features address which impacts.

Table 25
Summary of Impacts and Key Management Strategies

Impacts	Management Strategies													
	Accommodation Village Design	Project Employment Conditions	Infrastructure Upgrades	Workforce Recruitment Strategy Recruitment Plan	TSP	IPP	Workforce Diversity Policy	Employee Wellbeing Plan	Workforce Code of Conduct	Project Servicing Policy	TMP	LIPS	SCS	ERMP
Economic														
Economic growth		✔										✔		
Population and Demography														
Resident population growth		✔		✔									✔	
Demographic change													✔	
NRW population growth	✔			✔									✔	
Employment and Labour Market Dynamics														
Employment		✔		✔	✔	✔	✔						✔	
Indigenous employment				✔	✔	✔	✔						✔	
Labour supply				✔	✔								✔	
Labour draw				✔	✔								✔	
Skills enhancement					✔								✔	
Employee Health and Wellbeing														
Health implications of employment conditions	✔							✔	✔	✔				
Regional Development														
Increased supply chain opportunities												✔	✔	
Increased economic activity		✔										✔		
Other market impacts	✔		✔											
Increased real wage		✔										✔		
Improved infrastructure and services	✔		✔							✔			✔	
Community Liveability														
Increased traffic and reduced road safety		✔	✔						✔	✔	✔			
Ongoing demand on emergency services	✔		✔					✔		✔			✔	✔
Change in rural character													✔	
Change in accessibility			✔							✔				

Impacts	Management Strategies													
	Accommodation Village Design	Project Employment Conditions	Infrastructure Upgrades	Workforce Recruitment Strategy Recruitment Plan	TSP	IPP	Workforce Diversity Policy	Employee Wellbeing Plan	Workforce Code of Conduct	Project Servicing Policy	TMP	LIPS	SCS	ERMP
Property management practices										✔			✔	
Loss of connection to place													✔	
Reduced community liveability	✔							✔	✔	✔				
Indigenous people and cultural impacts													✔	
Cumulative														
Population growth		✔						✔						
Labour supply and labour draw				✔	✔								✔	
Changes in rural character/amenity													✔	
Demand for community Infrastructure and services	✔		✔							✔			✔	✔
NRW population growth	✔												✔	
Demand for housing and accommodation	✔			✔									✔	

7 MANAGEMENT STRATEGIES AND MONITORING APPROACH

This section describes the key plans, policies and procedures that support the management actions described in Section 6, and which the proponent has committed to develop and implement as project planning progresses. This section also describes the approach to monitoring the effectiveness of the proposed management and enhancement actions in achieving the desired management outcomes.

7.1 OVERVIEW

Consistent with the SIA Guideline, the identification of management strategies were based on the following considerations:

- A focus on mitigating direct impacts arising from the project, particularly those identified as high risk in the impact assessment;
- Adopting adaptive management principles in order to be responsive to changes to the social context given the anticipated life of the mine;
- Ensuring alignment with existing management strategies considered by stakeholders as 'benchmarks' established through earlier mine approvals including the CCM&RP and Kevin's Corner Project;
- Ensuring alignment with identified local, regional and state planning initiatives and opportunities; and
- Feedback from the stakeholder engagement process. Management strategies were informed through consultation conducted with key government regulators and service providers, IRC, CTRC, Townsville City Council, regional FIFO Coordinators, economic development groups and members of the Charters Towers and Clermont communities.

7.2 RECRUITMENT AND TRAINING

7.2.1 Recruitment Plan

Prior to the commencement of the CEW Phase, the proponent will develop a project Recruitment Plan in consultation with the DET and the Department of Employment. The project Recruitment Plan will deliver a targeted recruitment approach, informed through the findings of the Labour Market Study (Appendix D) conducted in 2013 as part of project planning, and supplemented by more recent labour market analysis to be undertaken following project approval.

The 2013 Labour Market Study was designed to inform the project workforce assumptions and identify regions within Queensland which had labour market capacity to support project recruitment, based on the following indicators:

- Unemployment rate;
- Qualifications of the unemployed;
- Unemployed looking for full-time work; and
- Proportion of persons employed in the mining sector.

Ongoing monitoring of these indicators will inform targeted recruitment of the project workforce beyond the development stages of the project. This strategy will enable the selection of labour source locations to minimise the strain placed on these labour markets.

7.2.2 Indigenous Participation Plan

Indigenous employment is a key area of focus for the proponent, and increasing the Indigenous representation on the project to match Indigenous representation in the wider Australian population is an identified target. Through a range of strategies, the proponent aims to increase Indigenous participation in both the project workforce and the resources sector more broadly. Prior to the commencement of the CEW phase the proponent will develop an IPP in consultation with the DATSIP. The IPP will include the following key commitments:

- Dedicated Indigenous liaison role for the project;
- A requirement for all contractors and subcontractors engaged on the project to have existing Indigenous employment standards, or adopt the proponent's Indigenous employment standards for the duration of their engagement;
- Aiming to achieve Indigenous representation on the project matching Indigenous representation in the wider Australian population;
- The development of an Indigenous community engagement strategy; and
- Investigate extending established Indigenous training initiatives such as those provided by recognised Indigenous training organisations e.g. Myuma and Jenagar.

7.2.3 Workforce Diversity Policy

The proponent is committed to increasing the participation of under-represented groups in project employment opportunities. The long lifespan of the project enables a more long-term, sustainable approach to employment than commonly adopted for projects with shorter lifespans. The Workforce Diversity Policy will be developed prior to the commencement of the operations phase of the project.

Key outcomes of the policy implementation may include:

- The establishment and annual awarding of a female-only scholarship for engineering or a related field to a Queensland university;
- Project apprenticeship opportunities to target under-represented groups; and
- The inclusion of gender and culture discussions in project employee inductions.

7.2.4 Training and Skilling Plan

A detailed TSP will be prepared prior to the commencement of the CEW phase. The objectives of the TSP are to:

- Demonstrate a planned and coordinated approach to workforce development for the project;
- Increase participation in the mining industry workforce particularly among the under-employed and disengaged, mature-aged workers, Indigenous and other under-represented groups;
- Attract workers with the right skills to the project and retain them by offering access to rewarding employment opportunities;
- Provide flexible, responsive and innovative education and training which enables residents of the Local Area to develop the skills necessary to achieve employment on the project or indirect employment in the Local Area; and
- Enhance the skill base of the Local Area so as to enable industry and small businesses to benefit from the economic opportunities generated by the project.

The TSP will include the following initiatives to achieve the objectives defined above:

- A structured apprentice and trainee program in conjunction with local and regional training providers;
- Specific training targets for proponent and contract workforces;
- Strategies for achieving training targets;
- A New Entrant program specifically designed for those people with no prior experience in the mining sector;
- A policy for granting higher education scholarships relevant to mining, to school leavers in workforce Home Base Locations;
- Partnerships with secondary schools in the Local Area and the DTTC to:
  - Support work experience placements;
  - Deliver career mentoring programs; and
  - Deliver a pipeline of school based apprenticeships and traineeships relevant to the project.

- Engagement with the Queensland Minerals and Energy Academy and the QRC to extend relevant programs to the Local Area; and
- Communications strategy for engaging with relevant stakeholders e.g. FIFO Coordinators in Home Base Locations, government agencies, RTOs to progress the development and implementation of initiatives in the project TSP.

In developing the TSP, the proponent will ensure the components align with the objectives of relevant state and commonwealth resource workforce planning, skill development and training strategies and policies.

7.3 WORKFORCE MANAGEMENT

7.3.1 Employee Wellbeing Plan

The proponent will be subject to the health and safety requirements of the *Coal Mining (Safety and Health) Act 1999* and WHS Act. This will require development of comprehensive, risk based health and safety plans for the mine. Health and safety plans will also be required for all aspects of construction.

For the operations phase, it is recognised that health and safety encompasses the health and wellbeing of workers. The proponent is committed to establishing an Employee Wellbeing Plan, under which a number of initiatives will be enacted.

The objectives of the Employee Wellbeing Plan are to:

- Support a healthy and happy workforce; and
- Increase workforce retention rates amongst FIFO employees.

The key components of the Employee Wellbeing Plan may include:

- The provision of on-site or tele-health mental health and counselling support services;
- Mental health and isolation adjustment support for all employees for their first year of employment;
- Engagement with FIFO Families to establish a MacMines FIFO Families group within the identified Home Base Locations;
- The establishment of an on-site activities calendar, including sporting, recreation and group activities to enhance social network building among the workforce;
- Investigation of roster scheduling to align employees from the same Home Base Location with each other where possible; and
- Fast and reliable internet access and mobile services for all employees to encourage communication with partners and families.

7.3.2 Workforce Code of Conduct

The proponent will develop a Workforce Code of Conduct for each of the project phases.

The Workforce Code of Conduct for each phase will aim to ensure all employees and contractors understand proponent and community expectations of their behaviour in their place of residence and in their place of work.

Each Workforce Code of Conduct will:

- Be applicable without prejudice to all members of the project workforce, including employees, contractors and subcontractors;
- Apply to the project workforce upon entry to the project site or accommodation village, regardless of whether the worker is “on shift”;
- Set standards for personal behaviour;
- Address health and safety compliance; and
- Identify suitable disciplinary measures for breaches of the Workforce Code of Conduct.

The procedures and plans within each Workforce Code of Conduct will aim to ensure:

- Employees, contractors and visitors to the site are provided with a safe and health working environment;
- Fatalities, injuries and illnesses, for all employees, contractors and visitors to the site are prevented; and
- Compliance with relevant laws and standards.

Each Workforce Code of Conduct will include a FFW Plan incorporating a:

- Fatigue Management Procedure – to ensure that travelling time together with any work performed at other sites immediately before arriving on site is taken into account when calculating rostered shift length worked before the commencement of work.
- Drug and Alcohol Management Procedure – to eliminate the hazards in the workplace associated with alcohol and drug use in a way that is consistent and fair to all persons who enter the site.

Each Workforce Code of Conduct will also include a(n):

- Equal Opportunity Policy – To ensure a work environment in which all employees and contractors are treated fairly and with respect.

- Complaints Handling Procedure – To assist employees and contractors to resolve their workplace issues. If during the process of addressing their concerns, they believe they have been treated unfairly, this policy will provide a step by step process to follow to attempt to resolve the concern. The policy aims to have employee concerns addressed promptly, fairly and competently.
- Behavioural Management Procedure – To ensure all employees and contractors are aware of the proponent's expectations in relation to standards of behaviour; and to ensure inappropriate behaviour is addressed and corrected.

7.3.3 Social Management Procedure for Contractors

A Social Management Procedure will be developed for the project and will apply to all contractors engaged during both the CEW phase and operations phases. The objective of the Social Management Procedure is to ensure all contractors engage in their activities in a social responsible manner. All contractors will be required to prepare a contractor social management plan detailing how the contractor proposes to support the proponent's objectives in relation to:

- Workforce management;
- Employee health and wellbeing;
- Community health and wellbeing;
- Recruitment and training;
- Regional development;
- Community infrastructure and services provision; and
- Social Amenity.

7.4 REGIONAL DEVELOPMENT

Prior to the commencement of the CEW phase the proponent will develop a LIPS which will incorporate the QRC Code of Practice, the proponent's AIPP and a tailored Local Content Plan.

7.4.1 Local Industry Participation Strategy

The proponent recognises the opportunity to support local businesses and is committed to partnering with local stakeholders to encourage the sustainability of the local area.

As part of the LIPS, the proponent will:

- Develop a Local Content Plan (Section 7.4.2);
- Ensure early and ongoing engagement of local industry;

- Promote procurement opportunities to local industry (including effective communication of scope of works and tender opportunities);
- Promote capability requirements to local industry;
- Identify capable local industry;
- Engage with contractors or subcontractors on the basis of the most competitive tender proposal; and
- Report annually to the QRC on the effectiveness of the LIPS in complying with the QRC Code of Practice.

The LIPS will detail the strategies for assessing the capacity and cost-effectiveness of sourcing goods and services from the local, regional and wider state economy during the pre-construction, construction, operation and rehabilitation phases of the project.

7.4.2 Local Content Plan

The purpose of the Local Content Plan is to:

- Enable industry and businesses within the Local Area, fair and equitable access to project procurement opportunities; and
- Ensure early and ongoing engagement of local industry.

The Local Content Plan will include actions to:

- Identify capable local industry;
- Assist local industry and businesses within the Local Area to develop appropriate capabilities to tender for procurement opportunities. This may be through sponsorship of capability workshops and procurement training provided by the Queensland government through agencies such as the ICN;
- Inform local industry of project procurement opportunities (including effective communication of scope of works and tender opportunities); and
- Assist local industry and businesses to promote capability requirements.

The proponent notes that the CTRC is seeking to develop a system and agreement with industry which enables small engineering companies in the Charters Towers LGA to bid for, and supply, major mining and agricultural contracts. The CTRC is currently in discussions with Adani Mining and Townsville Enterprise Limited in relation to creating a simplified procurement procedure for small business. The proponent will engage with the CTRC and other relevant stakeholders during the development of the Local Content Plan to ensure project initiatives build on the outcomes sought by the CTRC in relation to supply chain development.

During EIS consultation to inform the Business Capability Audit (Appendix E), business owners and operators in the Local Area identified a number of initiatives to support local business participation in the project supply chain.

These initiatives, which will be considered in the development of the Local Content Plan for the project, include:

- Establish a regular meeting (quarterly) with the CTRC to keep the local government informed of the progress of the project to inform investment decisions in the town;
- Appoint a single point of contact in MacMines for local businesses to contact in relation to procurement opportunities;
- Establish formal and regular communications with local businesses in Charters Towers and Clermont to keep local business owners informed of project progress and upcoming procurement opportunities;
- Establish a formal process for the timely notification of local businesses of project procurement opportunities. This may take the form of an online local procurement database, where businesses can register their interest and receive advance notice of procurement opportunities; and
- Develop a publicly available local procurement policy which outlines the following:
  - Advertising of tenders;
  - Payment terms;
  - Point of contact for procurement enquiries;
  - How to divide large tenders into smaller work packages; and
  - Instructions on completing paperwork and regulations.

7.5 COMMUNITY LIVEABILITY

The proponent has defined the following key management outcomes for Community Liveability:

- Minimise the risk of accidents along the Gregory Developmental Road and Flinders Highway during the CEW phase;
- Local emergency service personnel are fully informed of the project timing and have the necessary equipment and personnel to respond to project related off-site incidents;
- Project construction and operations does not place additional pressure on emergency service and health service providers; and
- Project induced population growth in workforce home base locations does not reduce accessibility to emergency services for the existing population.

The following policies, plans and procedures will be prepared by the proponent to achieve the desired management outcomes:

- Project Servicing Policy;
- TMPs; and
- SCS.

7.5.1 Project Servicing Strategy

The purpose of the Project Servicing Strategy is to ensure the coordinated delivery of services, including health services, for the project and the project workforce. The proponent is committed to ongoing consultation with the relevant service provision agencies (government and non-government).

Consultation has been undertaken with relevant representatives of the following service providers to date:

- Medicare Local (Townsville);
- QH (Townsville and Charters Towers);
- QFES (Townsville and Charters Towers);
- QPS (Charters Towers, Clermont and Mackay); and
- QAS (Mackay).

The Project Servicing Strategy will seek to outline the roles and responsibilities of all services required for the project. The strategy may include:

- The provision of an on-site nurse-led practice;
- The provision of tele-health facilities for the project workforce;
- The provision of suitable facilities for visiting medical specialists and allied health services.
- Arrangements for the use of the project airstrip by emergency services during emergencies;
- Arrangements for the use of mine site safety and rescue equipment by emergency services when necessary;
- Provision of up-to-date workforce figures, inventory lists of emergency and medical equipment and vehicle lists to QPS, QFES and QAS on an annual basis;
- Provision of on-site security; and
- Provision of dedicated remote services room on-site, for use by service providers.

7.5.2 Traffic Management Plan

The proponent is committed to reducing the risk of traffic incidents and minimising road disruptions during the CEW phase. Traffic management issues associated with the CEW phase will be addressed through a TMP. The TMP will be developed in consultation with CTRC and TMR and may include commitments to:

- Engage with the CTRC and regional road groups to establish a public notification system for traffic delays;
- Investigate ways in which vehicle load dimensions can be minimised in order to decrease the number of ODV movements required;
- Issue advance notice to the CTRC of traffic movements expected to impact on traffic flows in the area; and
- Plan vehicle movements to minimise impact on Charters Towers residents, including the scheduling of movements to pass through the township in off-peak times.

7.6 STAKEHOLDER COMMUNICATION STRATEGY

The proponent is committed to increasing the public benefit of the project through a consultative process. Prior to the commencement of the CEW phase, the proponent will develop a comprehensive SCS. The SCS will continue during the CEW phase and be updated as necessary for the operations phase of the project. This section provides an outline of the SCS.

The objectives of the SCS will include to:

- Demonstrate the proponent's commitment to open and transparent communications with communities of the Local Area about project activities;
- Continue to enhance the stakeholder relationships initially established during the preparation of the Project China Stone EIS;
- Progress the development of key strategies and plans designed to enhance the delivery of benefits to the local area and manage any potential adverse impacts of the project on the local area; and
- Ensure a coordinated approach to project communications.

The communication and engagement approach will be designed to achieve the SCS objectives. The SCS will focus on developing and maintaining strategic partnerships and actively collaborating with government and Adani Mining to ensure a coordinated approach to infrastructure upgrades and delivery.

Potential communications tools and techniques to achieve these objectives include:

- Membership of relevant community development groups in the local area;
- A dedicated community liaison role for the local area;
- Face-to-face stakeholder meetings with local, regional and state government stakeholders and community groups as required;
- A comprehensive stakeholder database and records of consultation;
- Email updates on the project's progress will be distributed regularly to key stakeholders;
- Regular project newsletters reporting on project progress and achievements towards the desired outcomes for impact management will be developed and distributed in the local area; and
- Regular updating of the project website.

Table 26 identifies the key stakeholder groups for the project, their key issues and the proposed methods of engagement. The frequency of this engagement will vary with the timing of infrastructure implementation and consultation with stakeholders regarding other socio-economic impacts.

Table 26
Summary of Proposed Stakeholder Engagement

Stakeholder	Area of Project Interest	Consultation Method	Timing
Landowners Within the Project Site			
Landowners within the project site	• Land access agreements.	Face-to-face meetings	Prior to CEW
Landowners Within the Surrounding Area			
Landowners with properties adjacent to the project site	• Potential amenity impacts arising from dust, noise, vibration and light from project CEW phase.	Face-to-face meetings	Ongoing during CEW
Landowners surrounding the project site and along the Gregory Developmental Road	• Traffic delays and road upgrades. • Placement and timing of infrastructure upgrades.	Face-to-face meetings	Ongoing during CEW
		Project newsletters	Annually during CEW
Local Area Communities			
Charters Towers Residents and Clermont Residents	• Project schedule. • Size of workforce. • Project workforce accommodation strategy. • Project Local Content Plan. • Service provision at the on-site accommodation village. • Employment and training.	Project newsletters	Annually during CEW
		Presentations to relevant organisations e.g. Charters Towers Chamber of Commerce and Mines	As necessary

Stakeholder	Area of Project Interest	Consultation Method	Timing
Commonwealth Government			
Department of Employment	• Employment, education and training opportunities associated with the project. • Opportunities to partner with the proponent to: – Enhance education and training service provision in the local area; and/or – Participate in employee training and recruitment. • Recruitment strategies.	Face-to-face meetings	As required during project planning and CEW
State Government Agencies and Departments			
DATSIP	• Design and implementation of IPP.	Project status meetings	As required during project planning and CEW
		Project newsletters	Annually during CEW
QFES, QAS and QPS	• Design and implementation of Project Servicing Policy. • Monitoring of project impacts on emergency services in the local area. • Size of future service demand generated by the project. • Placement and timing of infrastructure upgrades.	Planning meeting on managing construction activities	During project planning and prior to commencement of CEW
		Provide data to support emergency response planning	Ongoing during CEW
		Project status meetings	Annually from grant of ML
QH	• Health service provision at the on-site accommodation village.	Planning meeting to discuss health service provision at the on-site accommodation village	During project planning and prior to commencement of CEW
		Project newsletters	Annually during CEW
		Progress meetings	Annually until operations commence
DET	• Employment, education and training initiatives and opportunities for partnering with the proponent at the local level.	Project newsletters	Annually during CEW
		Progress meetings	Annually during CEW
QGSO	• Data reporting for Bowen Basin Population Reports.	Provision of data	Annually during CEW
TMR	• Development and implementation of Traffic Management Plan. • Placement and timing of infrastructure upgrades.	Face-to-face meetings	During project planning and prior to commencement of CEW

Stakeholder	Area of Project Interest	Consultation Method	Timing
Local Government			
IRC	• Project workforce accommodation strategy. • Project Local Content Plan. • Infrastructure upgrades	Project newsletters	Annually during CEW
		Face-to-face meetings	Ongoing during CEW as required
CTRC	• Project workforce accommodation strategy. • Project Local Content Plan. • Infrastructure upgrades.	Project newsletters	Annually during CEW
		Face-to-face meetings	Ongoing during CEW as required
Local Government Authorities in Home Base Locations	• Project workforce accommodation strategy. • Timing of recruitment strategies for construction and operations • Infrastructure and service demands	Face-to-face meetings	Ongoing during CEW as required
Industry Groups			
RAAG	• Journey management and driver fatigue.	Face-to-face meeting	Prior to commencement of CEW
		Project newsletters	Annually during CEW
Charters Towers Chamber of Commerce and Mines	• Project progress. • Local Content Plan.	Project newsletters	Annually during CEW
Clermont Community and Business Group	• Project progress. • Local Content Plan.	Project newsletters	Annually during CEW
Education and Training Providers			
Charters Towers and Clermont Schools Dalrymple Trade Training Centre Tec-NQ Advance Cairns Myuma Jenagar	• Employment, education and training opportunities associated with the project. • Opportunities to partner with the proponent to: – Enhance education and training service provision in local area; and/or – Participate in employee training and recruitment. • Recruitment strategies.	Partnership discussions	Prior to commencement of CEW
Community Facility and Service Providers			
Emergency Service providers in the Local Area	• Design and implementation of Project Servicing Policy. • Monitoring of project impacts on emergency services in the local area. • Size of future service demand generated by the project. • Placement and timing of infrastructure upgrades.	Planning meeting on managing CEW activities	Prior to commencement of CEW
		Provide data to support emergency response planning	Ongoing during CEW
		Project status meetings	Annually from grant of ML

Stakeholder	Area of Project Interest	Consultation Method	Timing
Community service and facility providers in home base locations	• Project workforce accommodation strategy. • Community and workforce integration. • Timing of recruitment strategies for construction and operations.	Project newsletters	Annually during CEW
FIFO Families	• Development of Employee Wellbeing Plan. • Support groups in home base locations	Project newsletters	Annually during CEW
		Partnership discussions	Prior to commencement of CEW

7.6.1 Complaints and Grievances

The proponent will establish a complaints and grievances system for receiving, managing, investigating and responding to stakeholder complaints in a timely and respectful manner. The complaints and grievances system will be underpinned by a commitment to openness, transparency and accountability. The purpose of the procedure is to provide a formal process whereby interested and affected stakeholders can submit complaints regarding construction or operational aspects of the project and can, through a defined process, and within a predefined timeframe receive a response or resolution of the complaint.

The procedure will be implemented prior to the commencement of the CEW phase.

7.6.2 Evaluation and Review

The effectiveness of the SCS will be evaluated by the proponent on an annual basis and amendments made as necessary.

7.7 MONITORING AND REPORTING

7.7.1 Monitoring

This section presents the monitoring framework for the SIA. The monitoring framework is designed to measure the success of the identified management actions in achieving the proponent's desired management outcomes for each of the identified moderate to high risk impacts. This approach enables the management measures to be adapted if they are not reaching the desired outcomes, as evidenced through annual progress reporting.

Table 27 presents the draft monitoring strategy for the project. Key Performance Indicators (KPIs) are identified for each desired outcome. These KPIs are designed to measure progress towards the achievement of the desired outcome, rather than the corresponding management measures. This will enable flexible and adaptive management measures to be

applied to achieve the desired outcome where monitoring shows that satisfactory progress is not being attained. These KPIs are designed to provide an ongoing baseline for the monitoring of project impacts and allow for the tracking of key indicators across time.

Potential sources of data for the KPIs and suggested frequency of monitoring are also identified. Consultation with key stakeholders may be necessary to complete the ongoing monitoring of the baseline and enable effective management of impacts. Stakeholders who may be partnered with in order to ensure achievement of the desired outcomes are also identified.

Table 27
Monitoring Framework

Desired Outcome	KPI	Data Source	Frequency	Partners
Population and Demography				
Local Government Authorities are informed and can proactively plan for potential project induced population growth in home base locations	% of workforce residing in home base locations	Project employment records	Six monthly during peak recruitment phases e.g. CEW Phase and initial Operations Phases.	Local Government Authorities in home base locations
	Number of project employees relocating to home base locations to take up FIFO roles on the project	Project employment records	Six monthly during peak recruitment phases e.g. CEW Phase and initial Operations Phases.	Local Government Authorities in home base locations
Employment and Labour Market Dynamics				
Recruitment and training programs respond to existing and anticipated skill shortages of relevance to the project, and in doing so minimise labour force impacts on the non-mining sector	% of project workforce in key shortage occupations recruited through training programs	Project employment records, Department of Employment skills shortage publications	Annually	DET, Department of Employment
	Project workforce turnover rate compared to average for Queensland coal mining sector	Project employment records, QGSO statistics	Annually	QGSO, DET
Participation of under-represented groups in the mining industry is encouraged	% workforce Indigenous, female, PWD, under 25 or over 50 years of age	Project employment records	Annually	Workforce, DATSIP, RTOs
	Turnover rate for selected labour groups	Project employment records	Annually	Workforce, DATSIP

Desired Outcome	KPI	Data Source	Frequency	Partners
Training and skilling programs associated with the project produce benefits in the form of skill enhancement, particularly for residents of the Charters Towers LGA	Number of employees recruited through project related training and skilling programs	Project employment records	Every two years	Workforce, DET, Department of Employment, RTOs
	Number of persons engaged in industry related training and skilling programs in Charters Towers LGA	Project employment records	Every two years	Workforce, DET, Department of Employment, RTOs, CTRC
	% of persons successfully completing industry related training and skilling programs in Charters Towers LGA	Project employment records	Every two years	Workforce, DET, Department of Employment, RTOs
Employee Health and Wellbeing				
Workforce health and wellbeing is proactively supported whilst on shift roster and living at the accommodation village.	Use of accommodation village recreation facilities	Project employment records	Annually	Workforce
	Annual workforce satisfaction survey	Project employment records	Annually	Workforce
The health and wellbeing of an employee's family is supported in the Home Base Locations during periods when family members are on shift roster and away from home.	Feedback from isolation adjustment and support meetings	Project employment records	Annually	Workforce
	Proportion of outgoing employees who cite family reasons for turnover.	Project employment records	Annually	Workforce
	Feedback from project-specific family support groups	FIFO Families	Annually	Workforce, FIFO Families
Regional Development				
Local, regional and state benefits of the project are maximized.	Contribution of the mining sector to economic growth	Economic development publications	Annually	CTRC, IRC, QGSO, QRC
Small and local businesses are given full, fair and reasonable opportunity to tender for and win project procurement contracts.	Record of advertisement of project procurement opportunities	Project procurement records	Annually	Local businesses, business groups in Local Area, CTRC, IRC
	Number of applications for procurement opportunities from local businesses	Project procurement records	Annually	Local businesses, business groups in Local Area, CTRC, IRC
	Number, proportion and value of project procurement contracts with businesses in the Local Area	Project procurement records	Annually	Business groups in Local Area, CTRC, IRC
	Distribution of procurement guideline	Project procurement records	Annually	Business groups in Local Area, CTRC, IRC

Desired Outcome	KPI	Data Source	Frequency	Partners
Project FIFO arrangements support sustainable population growth in regional centres.	Number of workforce residing in each home base location	Project employment records	Annually	Workforce, relevant local councils
Infrastructure upgrades and service provision associated with the project provide ongoing tangible benefits to the surrounding community.	Records of consultation with emergency services, local landholders and local governments regarding the physical infrastructure upgrades	Project consultation records	Annually	Emergency services, local landholders, IRC, CTRC
	Number of landholders with improved land access as a result of road upgrades	Project consultation records	Annually	Surrounding landholders, TMR, CTRC, IRC
	Number of additional users of the project telecommunications infrastructure	Project infrastructure records	Annually	Communications provider, CTRC, IRC
	Records of services provided on site	Project infrastructure records	Annually	Service providers
	Records of local residents' use of project services	Project infrastructure records	Annually	Surrounding landholders, TMR, IRC, CTRC
	Records of investigation into provision of project services to local residents	Project consultation records	Annually	Surrounding landholders, service providers
Community Health and Wellbeing				
Minimise the risk of accidents along the Gregory Developmental Road and Flinders Highway during the CEW phase	Number of project related traffic incidents along the Gregory Developmental Road	Traffic records, project vehicle records	Annually	Emergency Services in Clermont and Charters Towers, TMR
Project construction and operations does not place additional pressure on emergency service and health service providers.	Number of project related emergency call-outs in the Surrounding Area	Traffic records, project records	Annually	Emergency services in Clermont and Charters Towers
	Feedback from health and medical services in the Local Area	Project consultation records	Annually	Health services in Clermont and Charters Towers

Desired Outcome	KPI	Data Source	Frequency	Partners
Social Infrastructure and Service Provision				
Local emergency service personnel are fully informed of the project timing and have the necessary equipment and personnel to respond to project related off-site incidents.	Evidence of support for additional emergency services funding e.g. letters of support	Project consultation records	Annually	Emergency services in Clermont and Charters Towers
	Frequency of consultation with local emergency service providers	Project consultation records	Annually	Emergency services in Clermont and Charters Towers, CTRC, IRC
	Records of notice of changes in road traffic conditions issued to emergency services and the general public	Project consultation records	Annually	Emergency services in Clermont and Charters Towers, CTRC, IRC
	Records of ongoing consultation with QPS regarding road safety and escort duties	Project consultation records	Annually	QPS, TMR
	Reported capacity issues from emergency services in Charters Towers and Clermont	Project consultation records	Annually	Emergency services in Clermont and Charters Towers
	Records of ongoing consultation with emergency service providers	Project consultation records	Annually	Emergency services in Clermont and Charters Towers
	Fire coverage maps show no decrease in coverage	QFES maps	Every two years	QFES, local landholders
	Record of consultation with emergency services to train employees as emergency services volunteers	Project consultation records	Annually	Emergency services in Clermont and Charters Towers
Landholder and Amenity Impacts				
Impacts on landholdings outside of the project site are minimised.	Records of consultation with local landholders regarding amenity impacts	Project consultation records	Annually	Surrounding landholders
The amenity changes associated with the project do not unduly distress surrounding landholders.	Number of complaints lodged regarding amenity impacts	Project complaints records	Annually	Surrounding landholders, CTRC, IRC
Housing and Accommodation				
Project induced impacts on the housing market in the local and regional area and within home base locations are minimised.	% of workforce residing in home base locations	Project employment records	Six monthly during peak recruitment phases e.g. CEW Phase and initial Operations Phases.	Local Government Authorities in home base locations
	Number of project employees relocating to home base locations to take up FIFO roles on the project	Project employment records	Six monthly during peak recruitment phases e.g. CEW Phase and initial Operations Phases.	Local Government Authorities in home base locations

7.7.2 Reporting

The proponent will report on an annual basis to relevant stakeholders from the commencement of the CEW phase and for two years following the commencement of mining operations. The annual report will:

- Describe the actions to inform the communities of the Local Area about project impacts and show that community concerns about project impacts have been taken into account when reaching decisions;
- Describe the actions to enhance local and regional employment, training and development opportunities; and
- Describe the actions to avoid, manage or mitigate project-related impacts on local community services, social infrastructure and community safety and wellbeing.

The proponent will also report annually to the QRC on the effectiveness of the LIPS in complying with the QRC Code of Practice.

8 CONCLUSIONS

This SIA has been informed by a thorough examination of qualitative and quantitative data, as well as a tailored consultation process designed to allow for stakeholder responses to the project.

The project will be located in a remote area, with limited direct impacts. The negative impacts of the project on the socio-economic characteristics of the Local Area are related to the requirement for a large project labour force, and the necessary change in land use from rural agricultural land to a mining operation. These impacts include:

- Draw of labour;
- Change in rural character of the Surrounding Area;
- Decreased road safety; and
- Increased demand for emergency services.

It is likely that land use impacts will occur following the commencement of construction of the CCM&RP and as such will be largely cumulative in nature and constitute a continuation of land use rather than a change in land use. However, the socio-economic impacts of the project have been conservatively assessed as independent of the CCM&RP.

The project specific impacts are largely positive, and relate to the strengthening of the local and regional economies through:

- Creation of employment opportunities;
- Increased workforce diversity;
- Growth in local and regional supply chains;
- Increased local government revenue;
- Increased Queensland GRP;
- Improved infrastructure in the local area; and
- Growth in resident populations.

With the implementation of a range of management commitments, the negative impacts of the project are considered to have a low risk ranking. Additional measures have been identified to enhance the positive impacts of the project and ensure the greatest benefits from the project are achieved at a local, regional and state level.

* * *

for
HANSEN BAILEY

Bronwyn Pressland
Principal Social Planner

Peter Hansen
Director

9 REFERENCES

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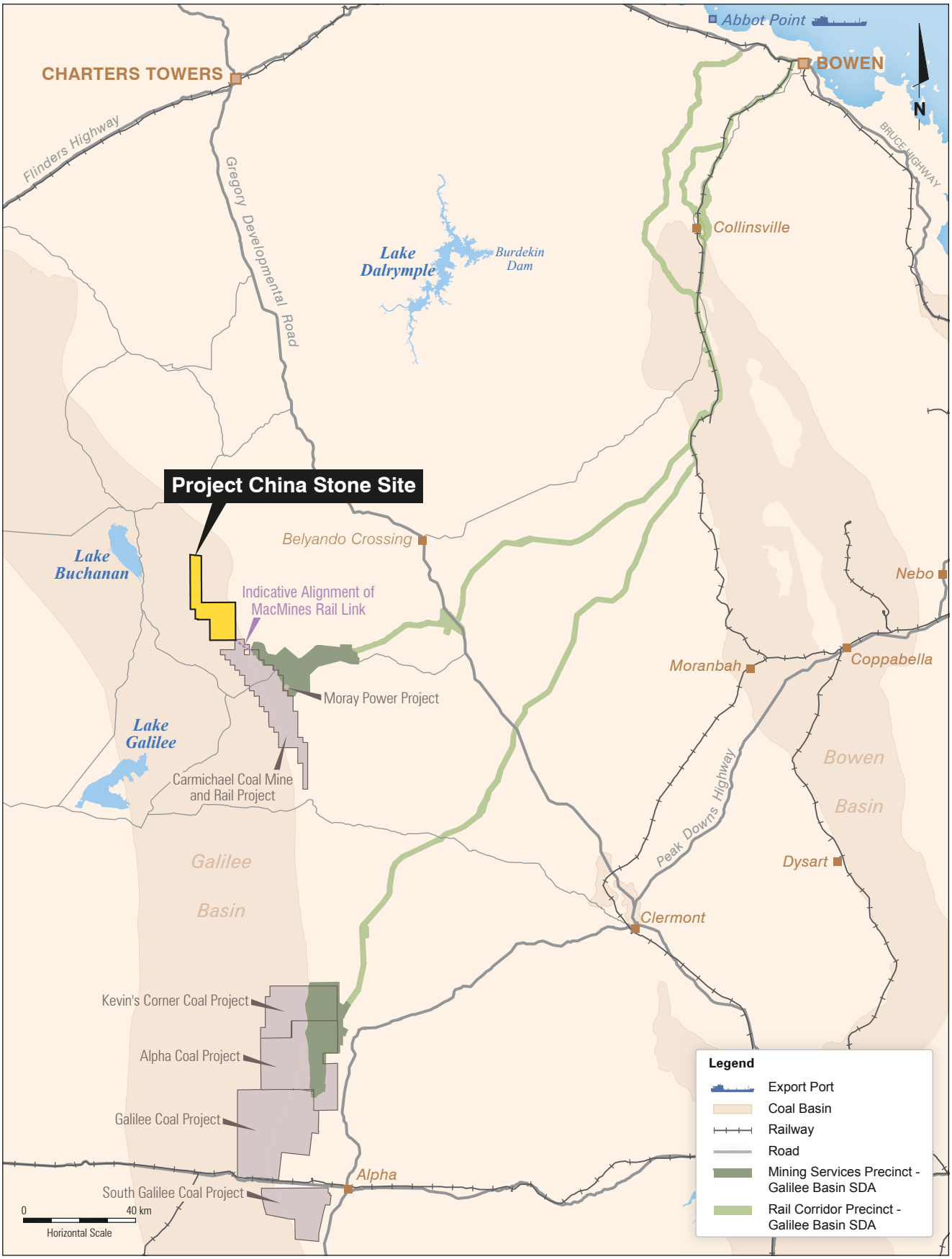
FIGURES

PROJECT CHINA STONE

MACMINES AUSTASIA | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Project Location

FIGURE 1



PROJECT CHINA STONE

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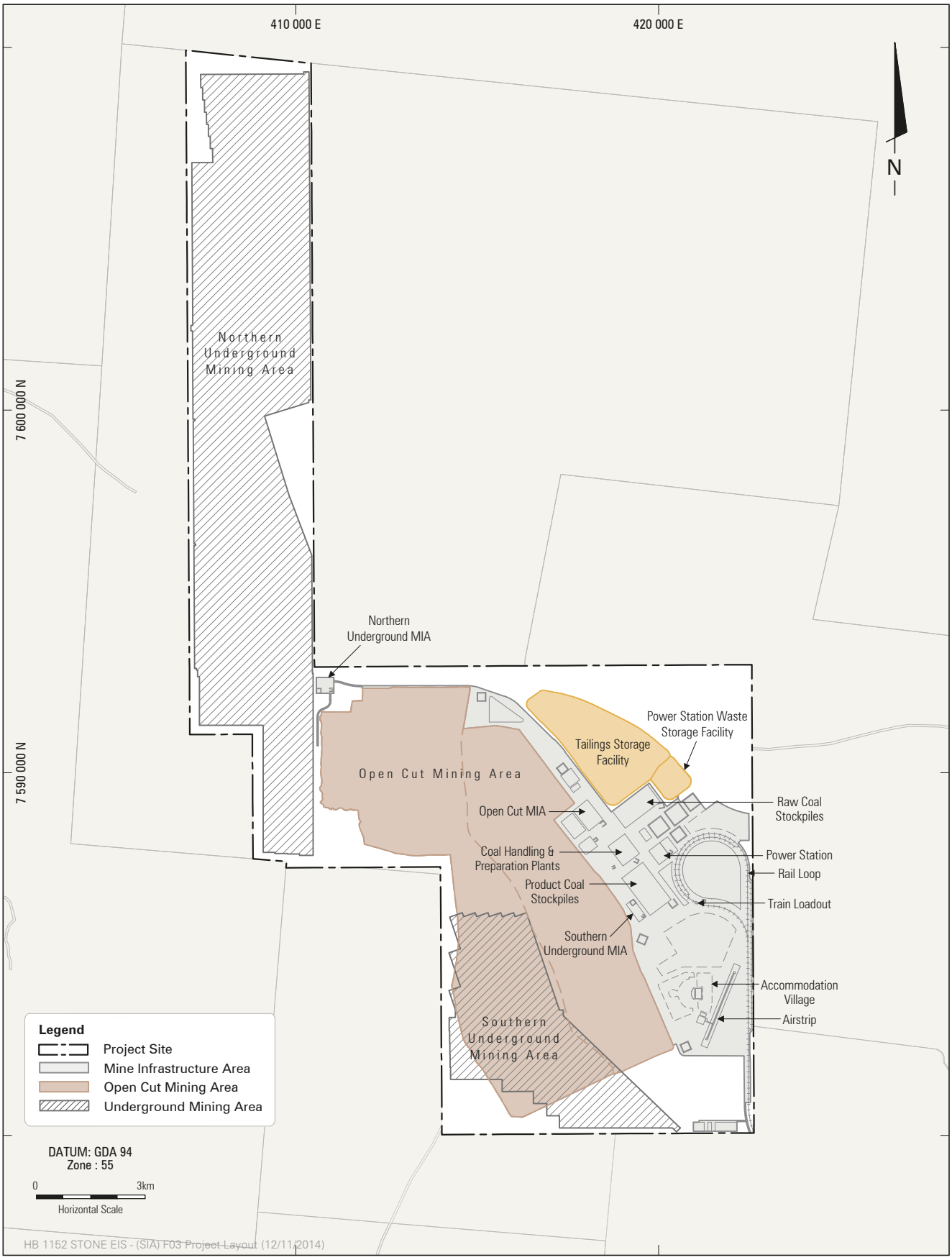
Galilee Basin Developments

FIGURE 2



PROJECT CHINA STONE

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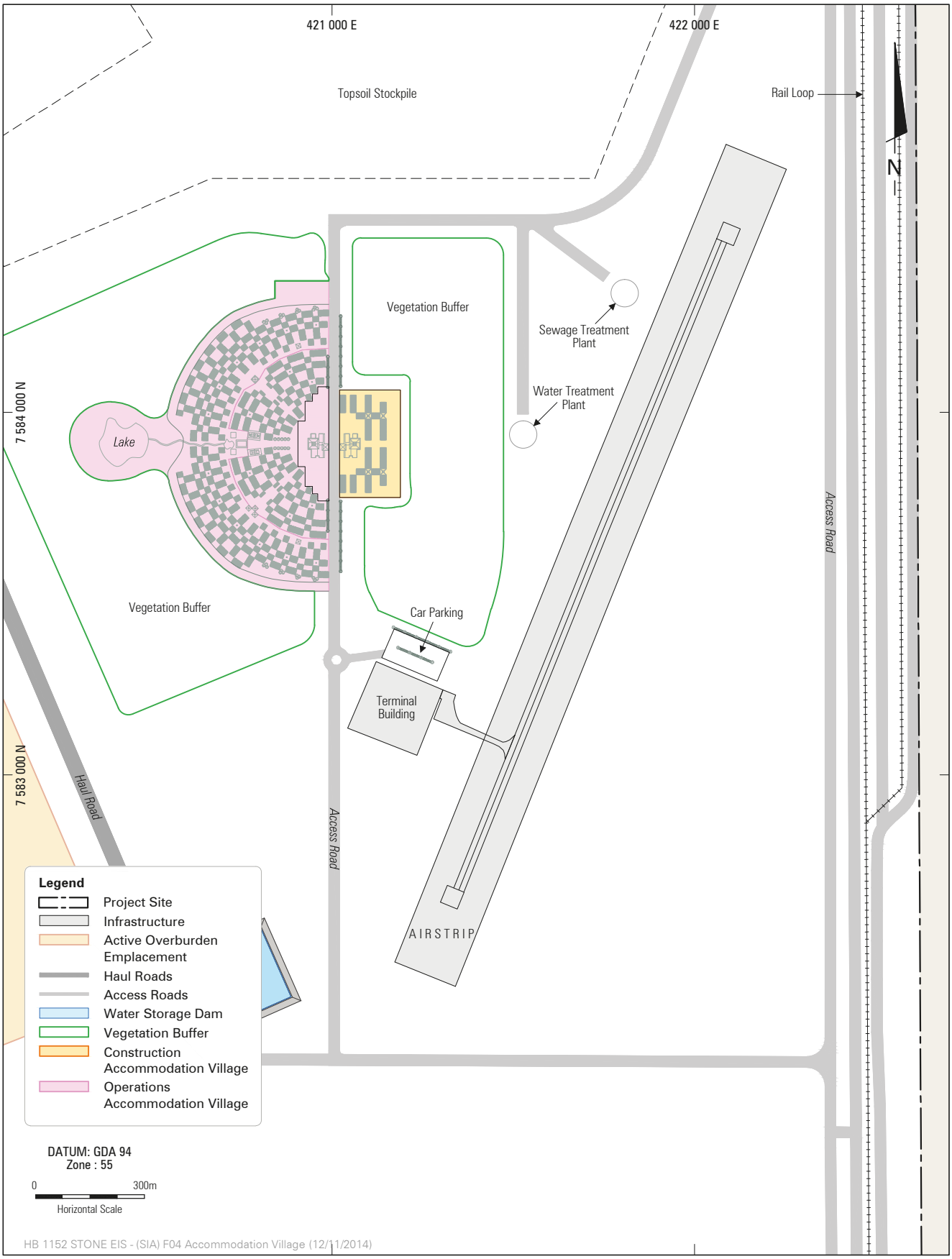
Project Layout

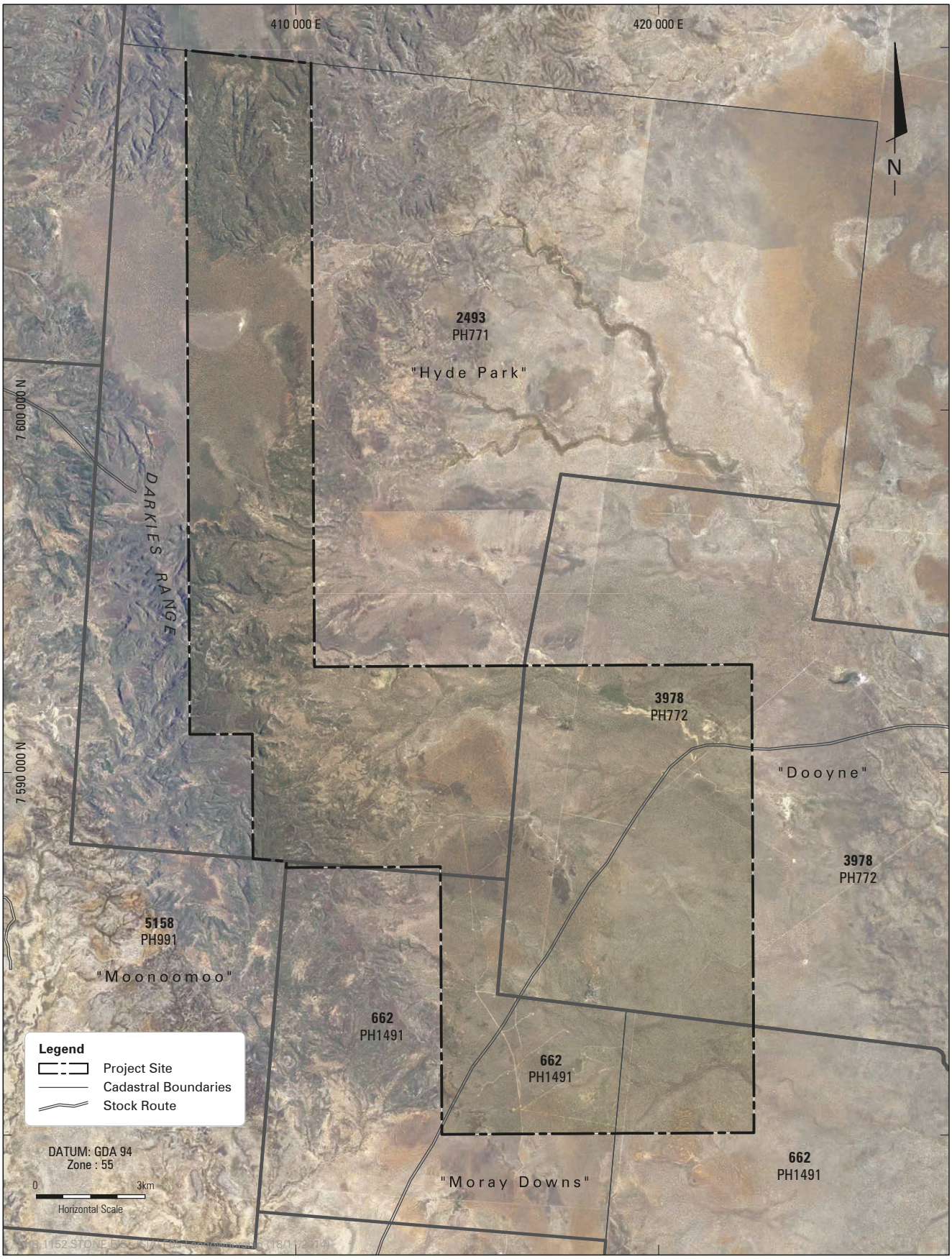
FIGURE 3



PROJECT CHINA STONE

Project Layout - Accommodation Village and Airstrip Detail

FIGURE 4



PROJECT CHINA STONE

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Land Ownership

FIGURE 5

PROJECT CHINA STONE

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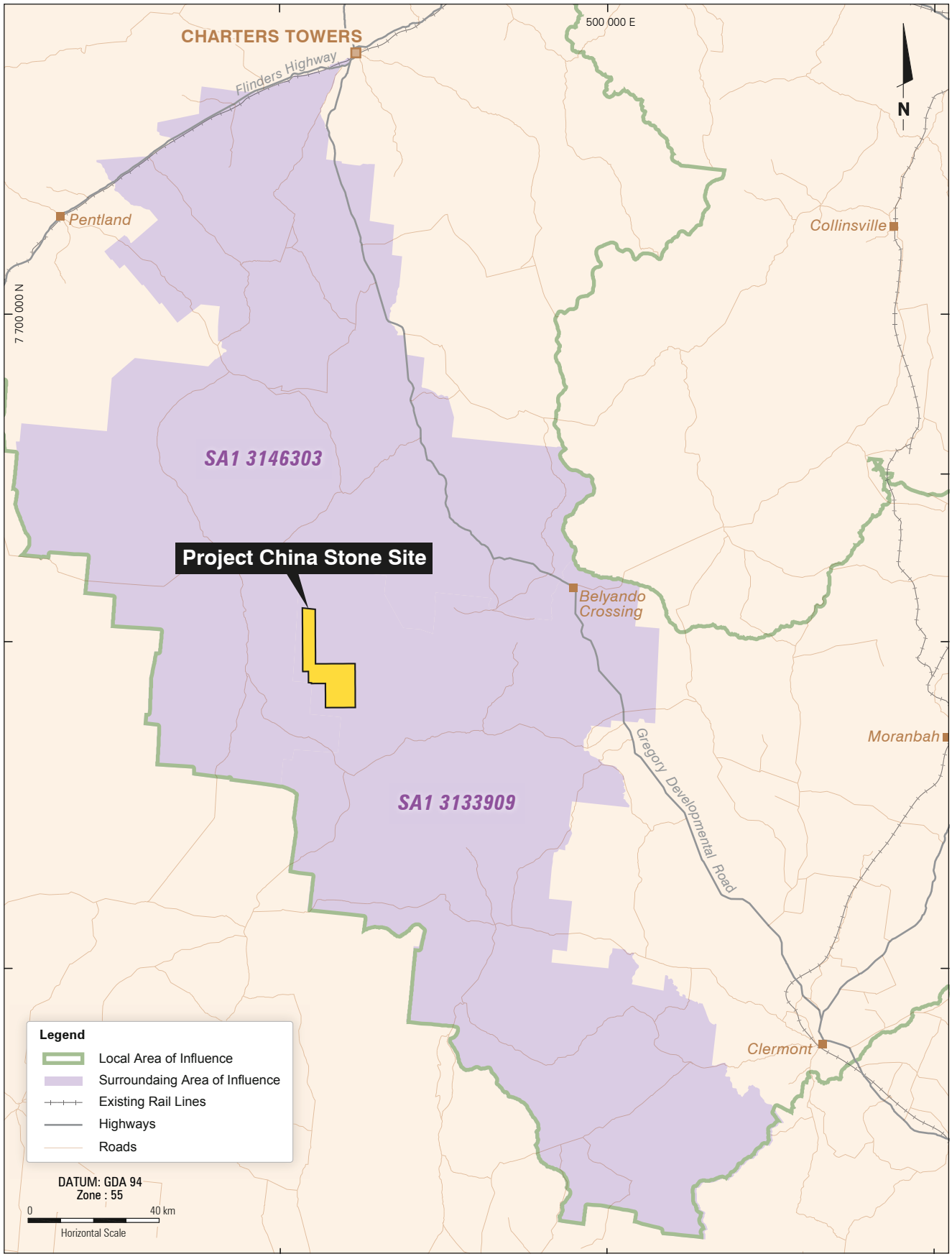
Local Area

FIGURE 6



PROJECT CHINA STONE

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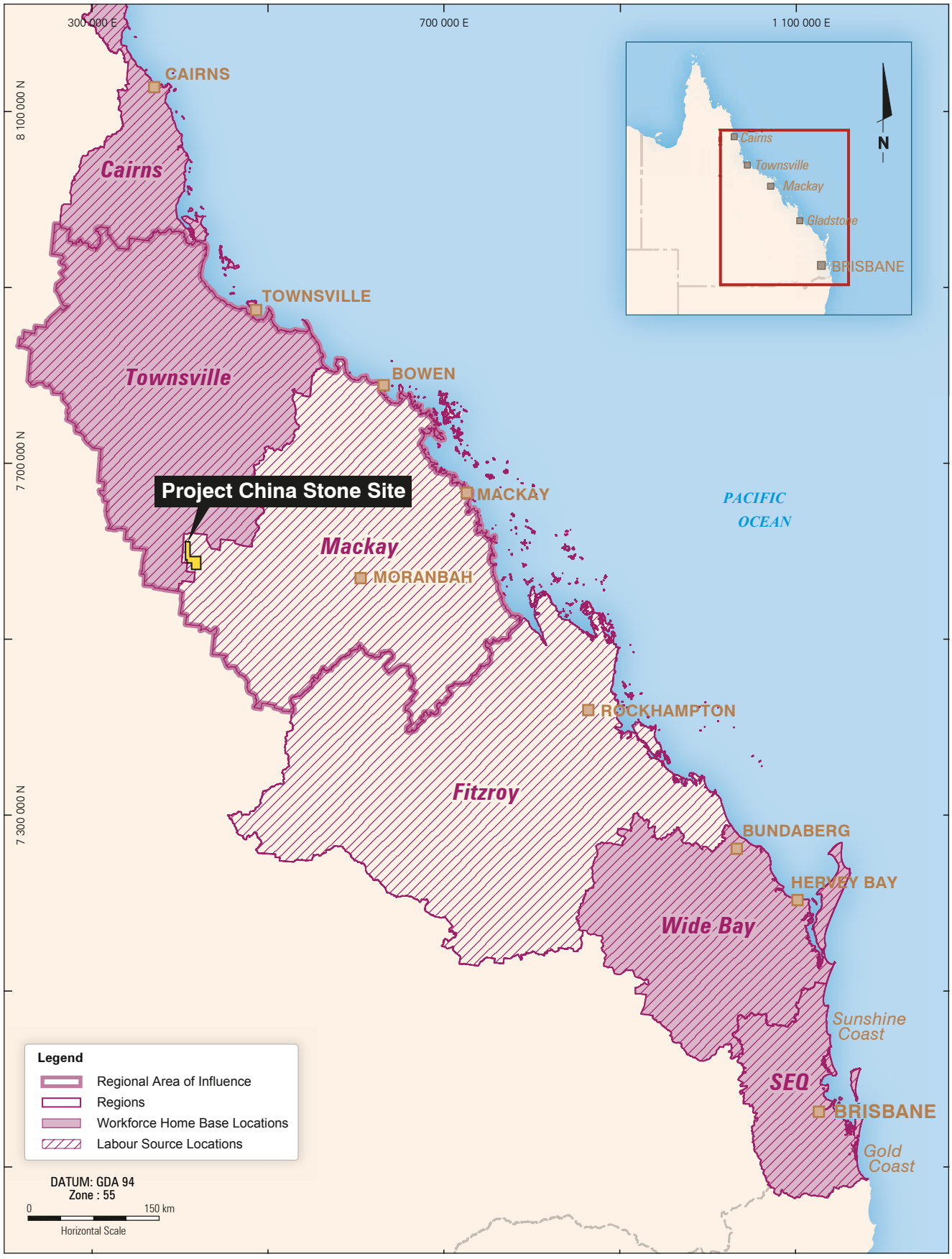
Surrounding Area

FIGURE 7



PROJECT CHINA STONE

MACMINES AUSTASIA | Hansen Bailey ENVIRONMENTAL CONSULTANTS

Statistical Regions

FIGURE 8

APPENDIX A

Economic Impact Analysis Report

COMMERCIAL IN CONFIDENCE

REPORT

Project China Stone

Economic Impact Assessment

Prepared for
Hansen Bailey on behalf of MacMines Austasia Pty Ltd

27 August 2014

THE CENTRE FOR INTERNATIONAL ECONOMICS
www.TheCIE.com.au

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Contents

TABLES

GRAPHS

FIGURES

Abbreviations/Glossary

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ABS	Australian Bureau of Statistics
BAU	business as usual
CEW	construction and early works
CGE	computable general equilibrium
CIE	Centre for International Economics
DR	Decommissioning and Rehabilitation Phase
EIA	economic impact analysis
EIS	Environmental Impact Statement
FTE	full-time equivalent
GDP	gross domestic product
GRP	gross regional product
GSP	gross state product
IMF	International Monetary Fund
LGA	local government area
Mtpa	million tonnes per annum
P1	Operations Phase 1
P2	Operations Phase 2
SA4	statistical area level 4
the project	Project China Stone
UNDP	United Nations Population Division

Introduction

The Centre for International Economics (The CIE) has been engaged by Hansen Bailey on behalf of MacMines Austasia Pty Ltd to conduct an economic impact assessment (EIA) of Project China Stone (the project) as part of the Environmental Impact Statement (EIS). This report describes the methodology used in the assessment and presents the results of that assessment.

The information used to estimate economic impacts in the report was current at the time of modelling (June 2014). Projected impacts of the project may change as further information becomes available. Further, the benefits described are based on the assumption that shareholder and government approval is granted. Overall, this report provides estimates of the order of magnitude of the general flows of benefits including employment, regional income and value added.

Project Description

The project is located wholly within the Isaac local government area (LGA) and adjacent to the Charters Towers LGA. The project site is remote and located approximately 260km by road from the township of Clermont in the Isaac LGA and approximately 285km by road from the township of Charters Towers in the Charters Towers LGA. The local area for the EIA includes both Isaac and Charters Towers LGAs and the region includes both Mackay Statistical Area Level 4 (SA4) and Northern SA4.

Modelling has been conducted under the assumption that construction and early works (CEW) for the project commence in 2016, and that the total capital expenditure during the 5-year CEW phase will be approximately $5.2 billion. Some capital expenditure will continue into Operations Phase 1, which begins in 2020, bringing the total capital expenditure for the project to close to $6.7 billion. Operations Phase 1 will last from 2020 through to 2045, with average coal production of 28.8 million tonnes per annum (Mtpa). Operations Phase 2 will extend from 2046 to 2063, with average coal production of approximately 5.1 Mtpa. The decommissioning and rehabilitation phase will last 4 years starting from 2064.

The evaluation of the economic impacts of the project on the state, regional and local economies has been undertaken using a general equilibrium modelling framework. The modelling shows that the project will provide significant economic benefits to the economy at each of these levels.

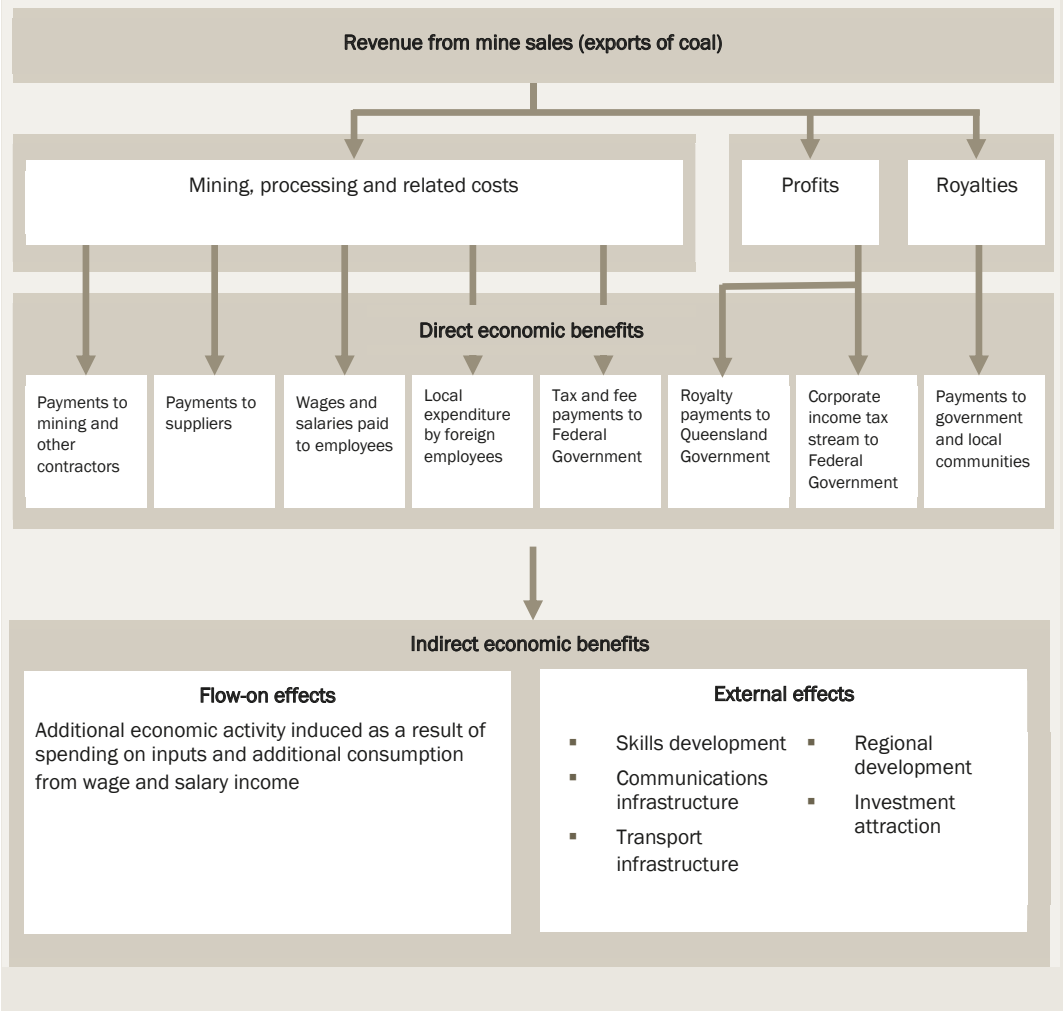
The following sections of this report detail the methodology, assumptions and findings of the economic impact analysis.

Methodology

Sources of Benefits

The key sources of economic benefits from the project essentially follow a pattern that is typical for large mining projects. Figure 1 illustrates the key pathways of benefits.

Figure 1 Sources of Economic Benefits



The ultimate source of benefits is coal export revenue, some of which is repatriated in the form of profits to the project shareholders and some of which is retained in the Australian economy through a variety of mechanisms including:

- Direct spending on Australia goods (materials) and services needed for the construction and operation of the project;
- Direct employment in the project (construction and/or operations) activities; and
- Government (at various levels) revenues through a variety of taxes and royalties.

These initial direct benefits will be further distributed throughout the economy through the flow-on linkages between upstream and downstream economic activities.

Further indirect benefits will arise through the actual use of government taxation and royalty revenues. Productive spending of these revenues has the potential to lead to sustained income increases and increased standard of living through improved services and infrastructure.

In addition, the training and business development encouraged by the project will also yield long-term productivity benefits for the region.

Overall, the careful use of government revenue and royalty payments (to build productive infrastructure, for example) along with training will ensure that the benefits from the project will extend well beyond its life, and will be received by future generations within Queensland.

Computable General Equilibrium Model

The economic impacts of the project have been estimated using a computable general equilibrium (CGE) model of the Australian economy, the CIE-Regions model.

A CGE modelling approach was selected for this project as it is superior to conventional input-output multiplier analysis. Input-output analysis involves several key assumptions which limit its suitability for analysing large-scale projects, including:

- No change in technology or labour productivity;
- Fixed import shares;
- Unlimited input factors such as labour, capital, land and natural resources; and
- Fixed prices.

Importantly, these assumptions mean that input-output analysis does not consider the trade-off between resources such as capital and labour which occurs as a result of the movement of these inputs from other areas of the economy to the project. As a result, the economic impacts estimated through input-output modelling are often overstated:[1]

> Abuse primarily relates to overstating the economic importance of specific sectoral or regional activities. It is likely that if all such analyses were to be aggregated, they would sum to much

---

1 Gretton, Paul 2013, *On input-output tables: uses and abuse*, Staff Research Note, September, Productivity Commission, Canberra, p1, available at http://www.pc.gov.au/__data/assets/pdf_file/0008/128294/input-output-tables.pdf

more than the total for the Australian economy. Claims that jobs 'gained' directly from the cause being promoted will lead to cascading gains in the wider economy often fail to give any consideration to the restrictive nature of the assumptions required for input-output multiplier exercises to be valid. In particular, these applications fail to consider the opportunity cost of both spending measures and alternate uses of resources, and may misinform policy-makers.

CGE modelling is able to overcome these limitations by allowing for supply restrictions and price movements such that the trade-off in the use of economic resources is inherent within the model. This enables a more accurate estimation of the net economic impacts of a project.

Input-output modelling is commonly used to assess the impacts of small to medium sized projects, where the focus of impacts is often regional or sub-regional. Regionally, inputs such as labour are often relatively mobile and thus the limitations of input-output are less salient. However, input-output modelling is considered inadequate for large-scale projects, which have capacity to affect the broader state economy.

CGE modelling involves constructing a business-as-usual (BAU) scenario and identifying the impacts of the project relative to the BAU scenario.

Below we discuss the proposed CGE model, CIE-Regions, and the evaluation framework, including the BAU scenario.

The CIE-Regions Model

The CIE-Regions model is a general equilibrium model of the Australian economy. It was developed by the Centre for International Economics based on the publicly available MMRF-NRA model developed by the Productivity Commission (2006).

Some of the key features that make this model especially suited for the analysis presented in this report are that it:

- provides a detailed account of industry activity, investment, imports, exports, changes in prices, employment, household spending and savings and many other factors;
- identifies 58 industries and commodities (Table 1);
- accounts for Australia's six states and two territories as distinct regions including specific details about the budgetary revenues and expenditures of each of the eight state and territory governments and the Australian Government (the government finances in CIE-Regions align as closely as practicable to the Australian Bureau of Statistics (ABS) government finance data);
- accounts for differing economic fundamentals in the states (for instance, the mining boom in Western Australia and Queensland); and
- can produce results on employment and value added at a regional level (11 regions in Queensland are identified, Table 2); and
- includes a detailed treatment of Federal and state taxes including GST, company tax, income tax and royalties.

Table 1 Industries in the CIE-Regions model

	Industry		Industry
1	Livestock	30	Electricity generation - hydro
2	Crops	31	Electricity generation - other
3	Forestry	32	Electricity supply
4	Fishing	33	Gas supply
5	Coal	34	Water and sewerage services
6	Oil	35	Construction
7	Gas	36	Wholesale trade
8	Iron ore	37	Retail trade
9	Other metal ores	38	Mechanical repairs
10	Other mining	39	Hotels, cafes and accommodation
11	Food, beverage and tobacco	40	Road passenger transport
12	Textiles, clothing and footwear	41	Road freight transport
13	Wood products	42	Rail passenger transport
14	Paper products	43	Rail freight transport
15	Printing	44	Pipeline transport
16	Petroleum products	45	Ports services
17	Chemicals	46	Transport services
18	Rubber and plastic products	47	Water freight transport
19	Other non-metal mineral products	48	Ship charter
20	Cement and lime	49	Air passenger transport
21	Iron and steel	50	Air freight transport
22	Other non-ferrous metals	51	Communication services
23	Metal products	52	Finance
24	Transport equipment	53	Business services
25	Other equipment	54	Ownership of dwellings
26	Other manufacturing	55	Government administration and defence
27	Electricity generation - coal	56	Education
28	Electricity generation - gas	57	Health
29	Electricity generation - oil	58	Other services

Source: CIE-Regions database

Table 2 Queensland regions identified in the CIE-Regions model

Region	Note
Brisbane (including Gold Coast and Sunshine Coast)	
Moreton	
Wide Bay-Burnet	
Darling Downs	
South West	
Fitzroy	
Central West	
Mackay	Included as part of the region for this evaluation, containing hosting locality – Isaac LGA
Northern	Included as part of the region for this evaluation, containing Charters Towers LGA
Far North	
North West	

Source: CIE-Regions database

Data Sources

There are a number of data sources used in the preparation of this report. Unless otherwise stated, the following data sources for the analysis should be assumed:

- Australian Government and international organisations: for example, the ABS provides population projections to 2101 while the International Monetary Fund (IMF) provides global economic outlook to 2018;
- Historical data: for example, historical performance of productivity improvement by sector provides some indication of future developments; and
- Expert opinions and/or global model projections: for example, export demand for Australian goods and services may be informed by a general equilibrium model of the global economy

Evaluation Framework

Constructing the business as usual projection of economic growth

In order to estimate the economic effects of the project, a BAU or 'without-project' scenario was constructed using relevant international, national, state and regional data. Factors affecting the BAU scenario include:

- productivity by industry;
- population growth;
- economic growth; and

- external demand for goods and services.

The assumptions employed in the formation of the BAU scenario are detailed in the next chapter.

Modelling the impact of the proposed Project China Stone

The following basic descriptive and financial information about the project was obtained from the proponent:

- the location of the project, and the boundaries of potentially affected areas (for estimating the impacts);
- the duration of the project and the length of each of the project phases;
- annual expenditure on capital and operations by major cost categories such as wages, materials and transportation;
- annual employment estimates;
- the proportion of procurement in Australia, Queensland, and local regions;
- annual coal production and assumed prices; and
- annual royalty estimates.

The information was organised and entered into the CIE-Regions model.

The project has been defined as having four phases, including:

- one CEW Phase;
- two Operations Phases; and
- one Decommissioning and Rehabilitation Phase.

These phases represent different types of activities from the viewpoint of economic modelling. The CEW Phase is modelled as higher investment demand from the coal mining sector, resulting in a higher level of construction and associated activities. The Operations Phases are modelled as a higher level of mining activity caused by higher export demand. The Decommissioning and Rehabilitation Phase are modelled as reduced labour supply available for the state economy.

It is assumed that the labour market in Queensland is tight, but that supply is not completely fixed. Specifically, a steep, upward-sloping labour supply curve is assumed such that the rise in real wage rate caused by the project is about 90 per cent of the rise that would occur under a completely fixed labour supply (that is, a vertical labour supply curve) scenario. This assumption is reasonable because the with-project scenario is an addition to the BAU projection with normal economic growth including employment growth. Given the fact the labour market is already tight in the BAU case, it would be more difficult to recruit more people to fill the jobs directly and indirectly created by this project.

Identifying economic impacts of the project at national and state level

National and state economic impacts of the project are identified by imposing the project information as additional shocks to the baseline projection. Model-generated results are then expressed as percentage deviations from the baseline. For example, employment results are expressed as a percentage change from the employment levels in the baseline.

For this analysis, the national level is the whole of Australia, and the state level is the whole of Queensland. It is preferable to present some of these percentage change results as their absolute change in levels, e.g. increase in total employment in the state and/or regions.

There are four typical sets of variables used to measure the economic impacts of the project at a state and national level:

- gross domestic product (GDP), gross state product (GSP) and gross regional product (GRP) – measuring the change in aggregate economic activity in the nation, state and regions, respectively;
- national and regional employment;
- household consumption at national, state and regional level – providing an indicator of net economic welfare changes; and
- changes in the Federal and state government revenues.

As these results are generated by a general equilibrium model, they represents the full net economic impacts (including both direct and indirect effects).

Identifying economic impacts of the project at regional and local level

Identifying regional and local impacts requires apportioning the state impact into relevant regions and local areas. It is important to distinguish between places of economic activities and places where additional income/benefits accrue. For example, the coal mining activity will take place in the Isaac LGA, however as a majority of employment and supplies come from outside the area, and the associated income would accrue to the sourcing areas and regions.

For the analysis presented here, the regional level comprises the Mackay and Northern SA4s and the local level comprises the Isaac and Charters Towers LGAs.

Assumptions

Project Assumptions

Table 3 provides the annual average of key variables of the project for each of the four stages – CEW Phase, Operations Phase 1 (P1), Operations Phase 2 (P2) and Decommissioning and Rehabilitation Phase (DR).

Table 3 Annual average of key project information

		CEW	P1	P2	DR
		2016-20	2021-46	2047-64	2065-68
Production of coal	million tonnes	11.74	28.76	5.10	0.00
Sale value	$m	1,097.83	2,689.48	477.26	0.00
Employment	head	3,249	3,119	1,221	234
Capital expenditure	$m	1,040.04	249.08		
Operating expenditure	$m	862.91	1,908.48	352.20	0.00
Royalties	$m	76.84	188.26	33.41	0.00
Profit before tax	$m	-884.36	535.25	91.65	0.00

Source: Hansen Bailey

As discussed in the previous chapter, an important task of this evaluation is to identify the local and regional impacts based on the state impacts estimated from the CIE-Regions modelling. The local and regional impacts will be determined by the share of employment and expenditure sourced locally.

The Isaac LGA and Mackay SA4 are already heavily influenced by mining. For this project, it is assumed that the majority of labour will be sourced from outside these areas.

The location of the project is remote within the Isaac LGA, and given the existing traffic conditions and road infrastructure in the area, it is likely that the majority of supplies for the project will be purchased in the Northern SA4 and transported down to the site.

Table 4 summarises the shares of employment and expenditure sourced from local areas, regions and the state for each of the four stages. Because the purpose is to distribute the state impact to local areas and regions, the sourcing shares in the table are related to employment and expenditures/supplies from Queensland. In other words, a 100 per cent share for the state does not necessarily mean all of the employment and/or expenditures will be from Queensland.

Table 4 Sources of employment and supplies in Queensland

	CEW 2016-20	P1 2021-47	P2 2048-64	DR 2065-68
Employment				
Local (Charters Towers and Isaac LGAs)	6.7%	0.9%	0.8%	0.9% [a]
Region (Mackay and Northern SA4s)	100.0%	25.8%	25.0%	25.4% [a]
State (Queensland)	100.0%	100.0%	100.0%	100.0% [a]
Expenditure				
Local (Charters Towers and Isaac LGAs)	7.4%	0.7%	0.4%	
Region (Mackay and Northern SA4s)	95.8%	73.6%	55.1%	
State (Queensland)	100.0%	100.0%	100.0%	

[a] Assumes average of Operation Phases

Source: Hansen Bailey and CIE assumptions

Business-as-usual Assumptions

World economic growth

As discussed in the previous chapter, world economic growth is a major demand side input into the BAU modelling for the Queensland economy. The world economic growth assumptions are made outside the formal modelling and based on historical data as well as projections from respected sources such as the International Monetary Fund (IMF).[2]

For the BAU projection, the following assumptions have been made:

- IMF projections are adopted for the period between 2013 and 2018;
- A gradual convergence to 3 per cent growth for all economies over the following 82 years to 2100 is the assumed.

Table 5 summarises the assumed economic growth for major global economies.

Table 5 Average rate of assumed global economic growth

	2013-18	2018-25	2025-40	2045-67
	%pa	%pa	%pa	%pa
Australia	2.78	3.04	3.03	3.02
China	7.14	6.31	5.60	4.46
India	5.99	6.54	5.77	4.55
US	2.69	2.25	2.35	2.58
European Union	1.47	1.87	2.02	2.34
Rest of Asia	2.62	2.98	2.98	2.99
Rest of the World	3.35	3.79	3.65	3.40

Source: CIE assumptions

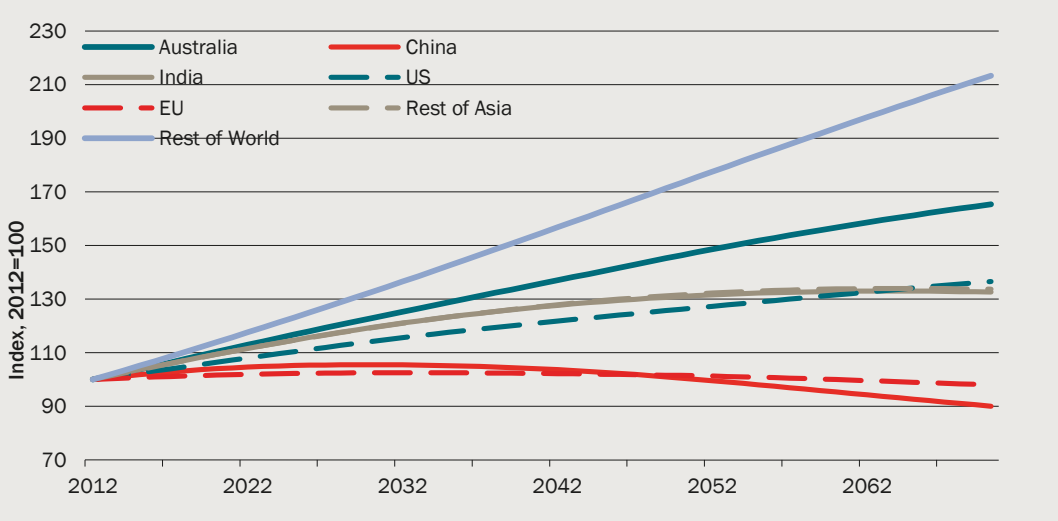
2 International Monetary Fund (IMF), 2014, *World Economic Outlook Database*, April, available at http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/index.aspx

Population growth

Population growth assumptions are drawn from the United Nations Population Division (UNPD)[3] and the ABS[4].

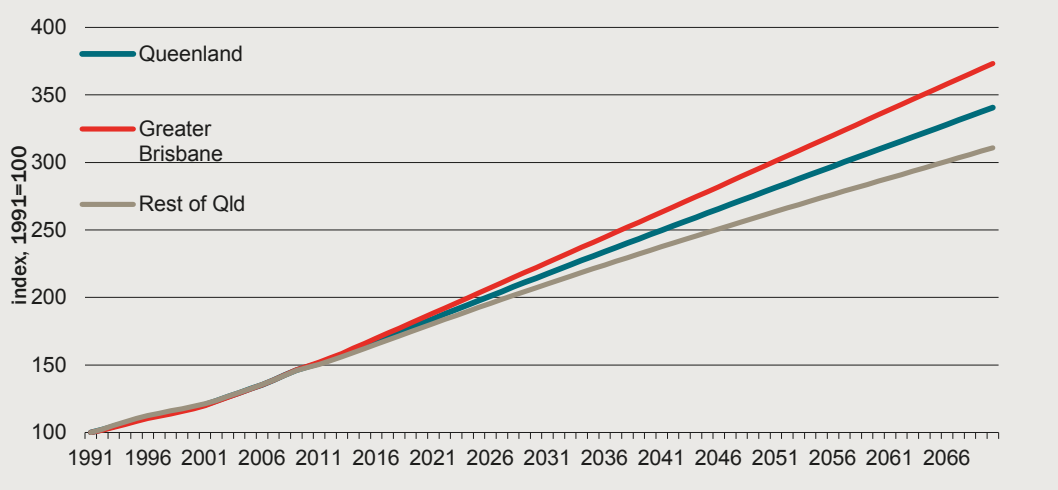
Graph 1 shows the index of population (with 2012 set at 100) for the major world economies. These projections are drawn from the UNPD's population projections using the medium fertility assumption.

Graph 1 Assumed population growth



Data source: UN Population Division

Graph 2 Queensland population index



Data source: ABS

3 United Nations, Department of Economic and Social Affairs, Population Division 2013, *World Population Prospects: The 2012 Revision*, DVD Edition.

4 ABS 2013, *Population Projections, Australia, 2012 (base) to 2101*, Cat.No.3222.0

Graph 2 shows the population index (1991=100) for the Greater Brisbane region, rest of Queensland and Queensland as a whole between 1991 and 2070. It is evident that Queensland's population will concentrate onto the Greater Brisbane region – the annual growth rate in the Greater Brisbane region is projected to be 0.3 percent higher than that in the rest of Queensland.

Productivity improvement

Productivity improvement assumptions are drawn primarily from the historical performance estimated by the ABS[5] and Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)[6]. The ABS estimates productivity improvements for major industry groups while ABARES focuses on agricultural industries.

There is significant variation in productivity growth across industries.

The agriculture productivity estimates by ABARES are generally lower than those provided by the ABS because of differences in methodology, industry coverage and data sources. We use the ABARES estimates of agricultural productivity as a base to scale the ABS estimates of productivity in other industries. This is based on personal communications and past industry experience as well as practical computational considerations. Other rules applied to establish the productivity assumption include:

- the growth rate (scaled) of the past decade continues to 2018;
- the productivity growth rate gradually reverts to pre-boom productivity growth (scaled) from 2018 to 2030; and
- after 2030 growth gradually converges over 50 years to 1 per cent per annum.

Table 6 summarises the assumptions of industrial productivity growth.

Table 6 Annual productivity growth assumption – percent per annum

	2013-18	2018-25	2025-40	2040-68
Agriculture	0.13	0.19	0.30	0.54
Mining	0.02	0.07	0.22	0.48
Manufacturing	0.06	0.11	0.22	0.47
Utilities	-0.07	-0.01	0.19	0.45
Construction	0.12	0.16	0.23	0.47
Services	0.09	0.14	0.24	0.49

Source: CIE assumptions based on ABS/ABARES data

5 ABS 2013, *Estimates of Industry Multifactor Productivity*, Cat. No.5260.0.55.002

6 Deads, B., D. Mobsby, N. Thompson and A. Dahl 2013, *Australian grains: Outlook for 2013-14 and industry productivity*, ABARES report prepared for the Grains Research and Development Corporation, Canberra, November.
Dahl, A, R. Leith and E. Gray 2013, 'Productivity in the broadacre and dairy industries', *Agricultural commodities*, **3**(1)**,** March, pp200-220.

Queensland and Regional Economies

Table 7 shows the employment by industry in Australia, Queensland and the related local regions estimated from the 2011 ABS Census data. Table 8 reports the industrial value added and gross domestic (state and regional) product estimated according to the 2011 Census data and the National and State Accounts data.

Table 7 Employment and industrial share, 2011

	Australia	Queensland	Mackay	Northern	Isaac	Charters Towers
Total employment (FTE)	8,205,800	1,687,446	72,613	76,231	20,299	2,477
Industrial share (%)						
Agriculture	2.81	3.17	5.16	3.85	5.04	1.49
Coal	0.61	1.68	16.78	0.02	50.87	0.00
Other mining	1.62	1.60	3.16	1.55	6.75	3.03
Manufacturing	10.19	9.61	8.59	9.80	2.38	3.79
Utilities	1.06	1.14	0.67	1.59	0.44	0.88
Construction	9.41	10.36	10.11	8.66	10.14	6.79
Services	74.29	72.45	55.53	74.52	24.39	84.03

Source: 2011 ABS Census

Totals may not equal 100% due to rounding

Table 8 Industrial value added and gross domestic, state and regional product, 2011

	Australia	Queensland	Mackay	Northern	Isaac	Charters Towers
Total industrial value added ($m)	1271372	243355	14328	10310	6734	292
Industrial share (%)						
Agriculture	2.50	2.76	3.29	3.58	1.91	1.59
Coal	2.82	5.68	41.58	0.08	74.98	0.00
Other mining	7.45	5.41	7.84	5.62	9.94	12.58
Manufacturing	8.03	8.00	5.22	8.70	0.86	3.86
Utilities	2.51	2.60	1.11	3.88	0.44	2.47
Construction	7.96	9.49	6.77	8.46	4.04	7.61
Services	68.75	66.05	34.19	69.69	7.83	71.89
Net taxes ($m)	135,300	24,589	1,448	1,042	680	29
GDP/GSP/GRP ($m)	1,406,672	267,944	15,776	11,351	7,414	321

Source: CIE estimates based on 2011 ABS Census and ABS National and State Accounts

Totals may not equal 100% due to rounding

It can be seen from Table 7 and Table 8 that the broad industrial structure in Queensland is similar to the national structure, except that mining in Queensland is more concentrated in coal production.

Industrial structure varies significantly across regions. For example, coal mining accounts for over 41 percent of industrial value added in the Mackay SA4 while it has a negligible effect in the Northern SA4. This variance is even more significant across local areas;

there is no coal mining in Charters Towers LGA while it accounts for about three quarters of industrial value added in the Isaac LGA.

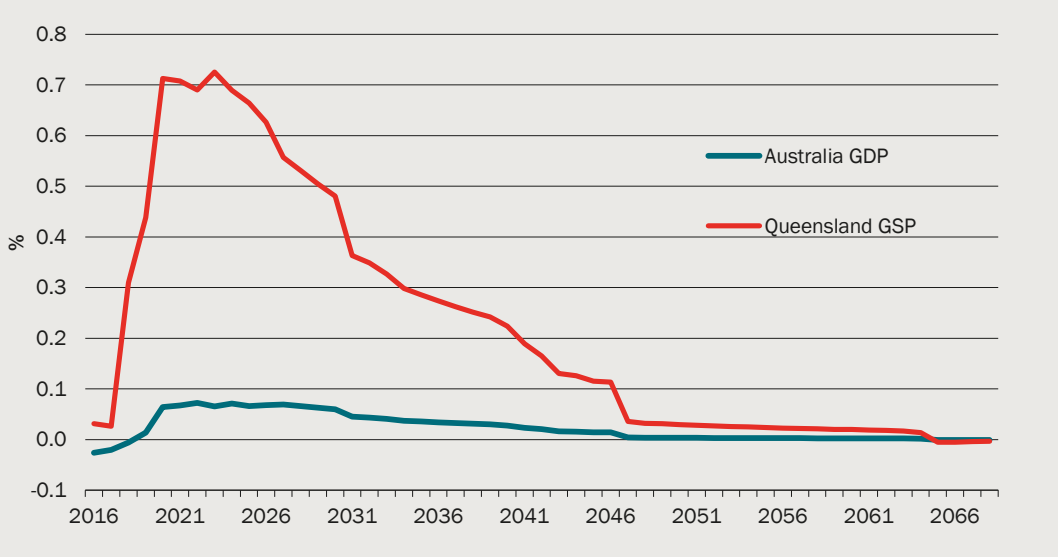
Economic impacts

National and State Economic Impacts

Graphs 3, 4 and 5 depict the impact of the project on GDP/GSP, real wage rate and real household consumption. These results are all expressed as a percentage change from the BAU level.

The project is expected to have a large positive impact on the Queensland economy; GSP will be 0.7 percent above the BAU GSP level in the early 2020s (early years of P1). The percentage change will then fall over time due to two factors – falling project production and a rising BAU GSP level.

Graph 3 Impact on GDP and GSP Percent change relative to BAU

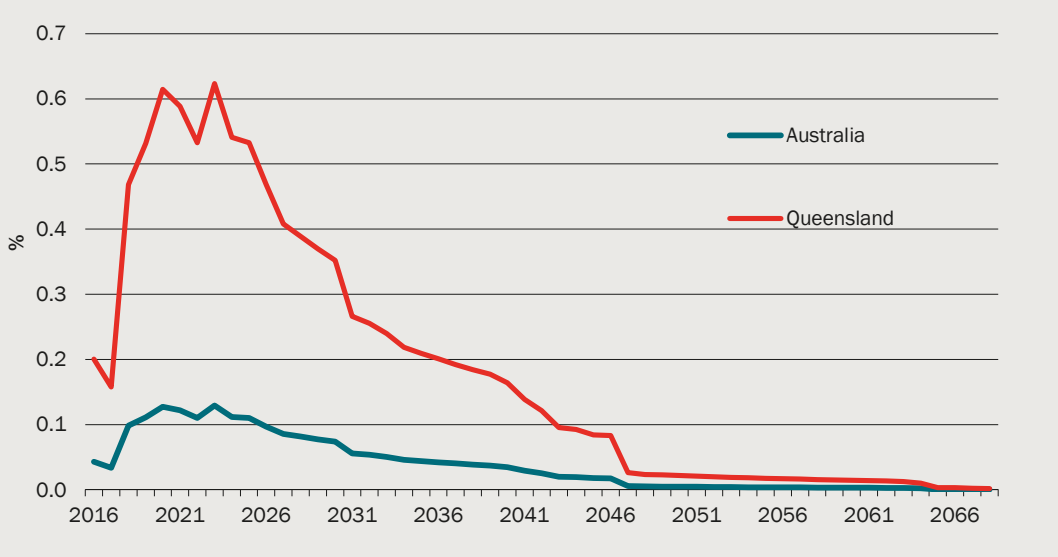


Note: Percentage change from the BAU level

Data source: CIE-Regions simulations

The employment market in Queensland is assumed to be tight in simulating the impact of the project, and thus the higher economic activity drives up the real wage– up to 0.6 per cent higher than the BAU level during the late CEW Phase and early P1 Phase (Graph 4). For similar reasons – lower labour demand from the project and higher baseline level – the percentage increase in the real wage rate (relative to BAU) falls over time.

Graph 4 Impact on real wage rate Percent change relative to BAU

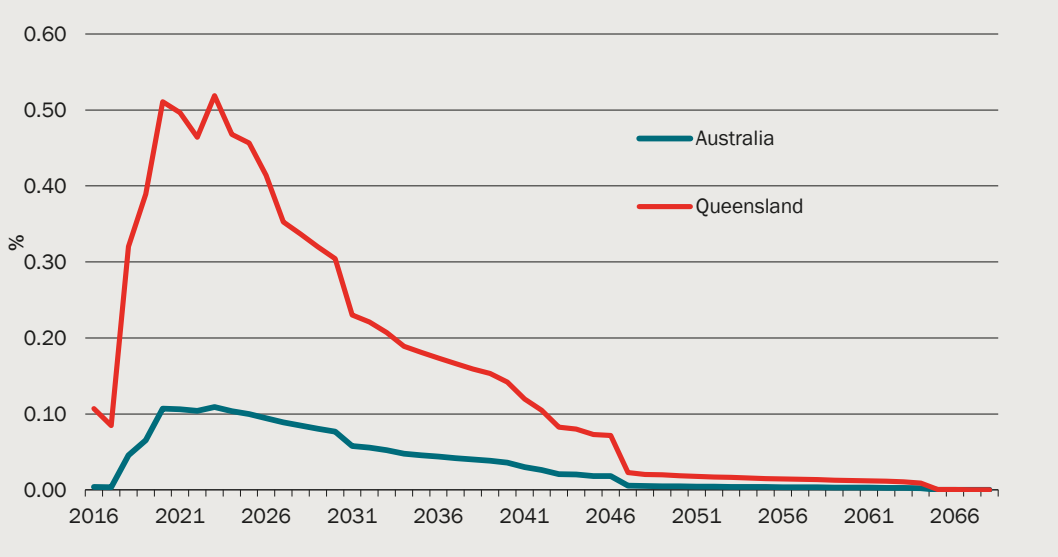


Note: Percentage change from the BAU level
Data source: CIE-Regions simulations

A higher wage rate leads to higher income and in turn, higher household consumption, which is one of the measures of net economic welfare change.

Real household consumption in Queensland is expected to increase up to 0.5 per cent above the BAU level (Graph 5).

Graph 5 Impact on real household consumption Percent change relative to BAU



Note: Percentage change from the BAU level
Data source: CIE-Regions simulations

Table 9 reports the impact of the project on national and Queensland industrial output and Table 10 reports the impact on national and Queensland industrial employment. Both tables show annual average percentage changes from BAU levels.

Higher activity in one industry usually has two opposite impacts on other industries. First, it may attract resources from other industries through higher input prices such as wages, rental and so on, leading to contraction in other industries. Second, it may present higher demand from the booming industry for goods and services from other industries.

Table 9 Impact on industrial output Percent change relative to BAU

	CEW	P1	P2	DR
National				
Agriculture	-0.22	-0.10	-0.01	0.00
Coal	2.19	2.99	0.19	0.00
Other mining	-0.88	-0.37	-0.02	0.00
Manufacturing	-0.19	-0.15	-0.01	0.00
Utilities	-0.04	0.01	0.00	0.00
Construction	0.52	0.06	0.00	0.00
Services	-0.01	0.02	0.00	0.00
Queensland				
Agriculture	-0.52	-0.20	-0.01	0.00
Coal	3.29	4.80	0.32	0.00
Other mining	-0.32	0.56	0.05	-0.01
Manufacturing	-0.43	-0.32	-0.02	-0.01
Utilities	-0.13	0.10	0.01	-0.01
Construction	2.33	0.18	-0.01	0.00
Services	-0.09	0.08	0.01	0.00

Note: Annual percentage change above BAU level

Source: CIE-Regions simulations

Table 10 Impact on industrial employment Percent change relative to BAU

	CEW	P1	P2	DR
National				
Agriculture	-0.37	-0.19	-0.01	0.00
Coal	2.38	3.30	0.22	0.08
Other mining	-0.93	-0.40	-0.02	-0.01
Manufacturing	-0.22	-0.17	-0.01	0.00
Utilities	-0.08	-0.02	0.00	0.00
Construction	0.53	0.05	0.00	0.00
Services	-0.04	-0.01	0.00	0.00
Queensland				
Agriculture	-0.94	-0.43	-0.02	-0.01
Coal	3.59	5.31	0.35	0.13
Other mining	-0.57	0.44	0.04	-0.01
Manufacturing	-0.53	-0.41	-0.02	-0.01
Utilities	-0.32	-0.09	0.00	-0.01
Construction	2.34	0.15	-0.01	0.00
Services	-0.18	-0.04	0.00	0.00

Note: Annual percentage change above BAU level

Source: CIE-Regions simulations

Tables 9 and 10 suggest that the first effect dominates for this project. For example, output and employment in construction during the CEW and P1 Phases and coal mining during the CEW, P1 and P2 Phases rises while output and employment in other industries falls (all relative to BAU). This is largely due to the conservative assumption in this analysis that the scope for increases in the labour supply is limited.

The assumption of limited labour supply in Queensland reinforces the first effect because with a limited labour supply, higher demand from construction or coal mining drives the wage rate even higher compared to the case where there is no limit on labour supply.

Regional and Local Economic Impacts

Regional and local impacts overview

Table 11 reports the annual average increase in industrial value added in the evaluation region (Mackay and Northern SA4s) and local area (Isaac and Charters Towers LGAs), and Table 12 reports the annual average increase in industrial employment. They are the absolute value change ($m or FTE employment) from the BAU level, measuring the change in economic activity in a particular area. Because they are economic activity measures, they are counted according to the places where the activities occur. For example, the project is located in Isaac LGA, and its employment is counted as coal industry employment in the area, no matter where the employees are recruited from and where they may reside.

Table 11 Average annual increase in industrial value added, $m

	CEW	P1	P2	DR
Region	***1,280.5***	***1,635.8***	***253.3***	***4.0***
Agriculture	0.7	1.1	0.1	0.0
Coal	638.6	1419.2	231.1	4.0
Other mining	26.9	54.4	8.5	0.0
Manufacturing	6.3	8.3	2.2	0.0
Utilities	2.6	3.7	0.3	0.0
Construction	540.0	53.1	0.0	0.0
Services	65.5	96.0	11.1	0.0
Local	***1,195.7***	***1,503.1***	***235.4***	***4.0***
Agriculture	0.1	0.2	0.0	0.0
Coal	638.6	1419.2	231.1	4.0
Other mining	12.9	25.3	3.7	0.0
Manufacturing	0.3	0.4	0.1	0.0
Utilities	0.2	0.2	0.0	0.0
Construction	540.0	52.8	0.0	0.0
Services	3.6	5.0	0.5	0.0

Note: Annual average increase from the BAU level

Source: CIE-Regions simulations

Table 12 Average annual increase in industrial employment, FTE

	CEW	P1	P2	DR
Region	***3,731***	***3,810***	***1,291***	***234***
Agriculture	0	3	0	0
Coal	777	2940	1221	234
Other mining	54	104	15	0
Manufacturing	43	42	6	0
Utilities	5	6	0	0
Construction	2472	221	0	0
Services	380	494	48	0
Local	***3,307***	***3,251***	***1,232***	***234***
Agriculture	0	0	0	0
Coal	777	2940	1221	234
Other mining	26	49	7	0
Manufacturing	3	3	0	0
Utilities	0	0	0	0
Construction	2472	220	0	0
Services	29	38	4	0

Note: Annual average increase from the BAU level

Source: CIE-Regions simulations

Because some of the employees and supplies are sourced from outside of the region, the labour supply constraint is relaxed while estimating the regional and local impacts on other sectors. It appears that the second, positive effect dominates without the constraint – industries other than coal and construction will see a small positive impact.

Other economic impacts

Table 13 summarises the effect of the project on industrial value added, net taxes, GSP, employment and real wages at the state, regional and local levels.

Value added

Value added measures the increased value of a good or service resulting from the application of inputs such as capital or labour. Value added shows the increased value to the economy achieved through the redistribution and application of resources. Value added for the local and regional areas are higher than value added for the state because resources are reallocated to the project within the local and regional areas from areas outside of the local and regional areas. This means that value added within the local area shows the value of the product created in that area, minus the costs of inputs acquired from that area. As a portion of the inputs are acquired from outside the local area, these inputs are not accounted for in the estimation of value-added. However, as it is assumed that the majority of inputs will be sourced from Queensland, the value-added for the state level is lower, reflecting the higher level of resource trade-off.

Net taxes

Net taxes are calculated at a state and national level, then apportioned to the regional and local area on a per capita basis.

GSP and GRP

GSP and GRP are measures of economic activity and show the project's direct and indirect impact on the state, regional and local economies in which the activity takes place. The figures for GRP are higher than the figure for GSP as the increased economic activity in the local and regional areas will be offset slightly at the state level by decreased economic activity in the state due to resource transfers.

Employment

As previously stated, employment is counted in the area in which the person is employed, not the area in which they reside. Therefore, 100% of the project workforce is counted as employed in the local area. Because the impacts area cumulative across regions, 100% of the workforce is also employed in the region and the state. However, the employment impacts of the project are net employment from a baseline, so they represent new employment (from unemployed persons or new entrants into the labour force), not transfers of employment (persons moving jobs). This is a key distinction between the CGE model and an input-output analysis, which counts employment regardless of whether that employment is new employment or a transfer.

New employment is lower at the state level than at the local and regional level because the increase employment experienced as a result of the project is partially offset by a transfer of jobs within the state. This is consistent with the assumption that labour will move from other areas in Queensland to take up employment on the project (and therefore employment within the local and regional area).

Real wages

The real wage increase is a result of the increased demand for labour and the tight labour market assumptions employed for this economic analysis. The real wage increase is the same across the local, state and regional areas as real wage rates are a product of inflation and any changes to the real wage will be reflected equally across the nation with little to no variance between areas.

Regional income

Regional income shows the level of income accruing in a region, regardless of where the income is generated. As such, sourcing matters for the estimation of impact on regional income. Less than 10 per cent of project employment and expenditure will occur in the Charters Towers and Isaac LGAs. As a result, the increase in regional income is significantly smaller than the increase in GRP in these areas. In contrast, a significant portion of project employment and expenditure will be sourced from the Mackay and

Northern SA4s (over 95 per cent during the CEW phase), the change in regional income is closer to the change in GRP at the regional level.

Table 13 Summary of state, regional and local impacts

		CEW	P1	P2	DR
Queensland					
Industrial value added	$m	864.6	1374.2	166.1	-44.4
Net taxes	$m	87.4	138.8	16.8	-4.5
GSP	$m	951.9	1513.0	182.9	-48.9
Employment	FTE	2764	2082	194	-54
Real wage	%	0.39	0.28	0.02	0.00
Mackay and Northern					
Industrial value added	$m	1280.5	1635.8	253.3	4.0
Net taxes	$m	83.7	102.2	9.4	0.0
GRP	$m	1364.2	1738.0	262.8	4.0
Employment	FTE	3731	3810	1291	234
Real wage	%	0.39	0.28	0.02	0.00
Regional income	$m	1253.0	1022.6	128.0	2.1
Isaac and Charters Towers					
Industrial value added	$m	1195.7	1503.1	235.4	4.0
Net taxes	$m	6.5	1.0	0.1	0.0
GRP	$m	1202.2	1504.1	235.5	4.0
Employment	FTE	3307	3251	1232	234
Real wage	%	0.39	0.28	0.02	0.00
Regional income	$m	100.8	42.7	5.6	0.0

Note: Annual average increase from BAU level

Source: CIE-Regions

APPENDIX B

Baseline Statistical Profile

PROJECT CHINA STONE

SIA BASELINE STATISTICAL PROFILE

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June 2015

For:

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

ABBREVIATIONS LIST

ABS	Australian Bureau of Statistics
BRC	Bundaberg Regional Council
CCHAOS	Clermont Community Housing and Other Services
CRC	Cairns Regional Council
CTNC	Charters Towers Neighbourhood Centre
CTRC	Charters Towers Regional Council
DSDIP	Department of State Development, Infrastructure and Planning
EIS	Environmental Impact Statement
ERP	Estimated Resident Population
FCRC	Fraser Coast Regional Council
FTE	Full Time Equivalent
GC	Gold Coast
GCCC	Gold Coast City Council
GCCSA	Greater Capital City Statistical Area
GRP	Gross Regional Product
IRC	Isaac Regional Council
LGA	Local Government Area
M	Million
MIW	Mackay, Isaac, Whitsunday
N/A	Not available
NRW	Non-resident Worker
OESR	Office of Economic and Statistical Research
QAS	Queensland Ambulance Service
QFRS	Queensland Fire and Rescue Service
QGSO	Queensland Government Statistician's Office
QPS	Queensland Police Service
RDA	Regional Development Australia
RFDS	Royal Flying Doctor Service
RTA	Residential Tenancies Authority
SA1	Statistical Area Level 1
SA4	Statistical Area Level 4
SCRC	Sunshine Coast Regional Council
SEQ	South-East Queensland
SHS	State High School
SIA	Socio-Economic Impact Assessment
TCC	Townsville City Council
The project	Project China Stone
TNQ	Townsville and North-West Queensland
UCL	Urban Centre/Locality
WAV	Worker accommodation village
WBB	Wide Bay Burnett

PROJECT CHINA STONE
SIA BASELINE STATISTICAL PROFILE

for
MacMines Austasia Pty Ltd

1 INTRODUCTION

This report presents qualitative data and comparative statistics for the Areas of Influence of Project China Stone (the project). This report supports the discussion in Section 5 and 6 of the Project China Stone Socio-Economic Impact Assessment Report (SIA).

1.1 SCOPE

This report does not contain all data used in the SIA but offers supporting information to the socio-economic baseline presented in Section 6 of the *Socio-Economic Impact Assessment Report* (Appendix N), and includes comparisons between relevant geographic locations. Information is only presented for indicators relevant to the assessment of identified direct socio-economic impacts. In circumstances where the project, given current project planning, is not anticipated to have any direct impact, information provided is limited.

This report contains a description of the following socio-economic characteristics of the project Areas of Influence:

- Community demographics;
- Housing and accommodation;
- Social infrastructure accessibility; and
- Economic vitality and employment.

1.2 DOCUMENT STRUCTURE

The SIA is structured as follows:

- Section 1 – Introduction (this section) – describes the purpose and scope of the document, defines the SIA Areas of Influence and provides a brief explanation of the methodology adopted for baseline profiling;
- Section 2 – Baseline Statistical Profile – presents the socio-economic baseline of the project Areas of Influence; and
- Section 3 – References.

1.3 METHODOLOGY

1.3.1 Data Sources

A variety of quantitative and qualitative sources were used in the development of this report. The principal quantitative sources included:

- Australian Bureau of Statistics (ABS) data;
- Statistics from the Queensland Government Statistician's Office (QGSO), formerly known as the Queensland Office for Economic and Statistical research (OESR);
- Department of Employment; and
- Local government websites.

Qualitative sources included:

- The findings of consultation with stakeholders for the Environmental Impact Statement (EIS);
- Local, state and federal government publications; and
- Websites and publications from relevant industry groups and organisations.

1.3.2 Project Areas of Influence

Due to the remote location of the project site and the use of a non-resident and long-distance commuting workforce, the potential impacts of the project will occur across a range of locations. The SIA has been conducted for a number of statistical areas, identified for their relationship to the project as well as their geographical proximity to the project site. These areas are referred to as the project Areas of Influence. Adopting this approach has facilitated the comprehensive assessment of the project's potential impacts. The following areas define the project Areas of Influence.

Surrounding Area
The Surrounding Area includes the project site and the rural landholdings west of the Gregory Development Road between Charters Towers and Clermont. The Surrounding Area is defined as the ABS Statistical Areas Level 1 (SA1s) 3133909 and 3146303.

Local Area
The Local Area comprises the Isaac Local Government Area (LGA), in which the project is located, and the adjoining Charters Towers LGA. The two closest townships to the project are Charters Towers and Clermont, defined by the Charters Towers and Clermont Urban Centre/Localities (UCLs), respectively.

Regional Area

The Regional Area for the project was determined as the area most likely to secure supply chain benefits and economic expenditure from the project. The Regional Area comprises the Townsville Region and the Mackay Region, defined as the Townsville and Mackay Statistical Areas Level 4 (SA4), respectively.

Home Base Locations

Regions were identified as potential home base locations for the project workforce based on the capacity of these regions to attract and support a proportion of the project workforce. These regions included:

- Townsville;
- Cairns;
- Wide Bay; and
- South-East Queensland (SEQ).

The SEQ Region comprises the Gold Coast and Sunshine Coast SA4s, and the Brisbane Greater Capital City Statistical Area (GCCSA).

At the time the SIA baseline was prepared, the Mackay and Fitzroy regions were experiencing sustained population growth driven by significant expansion in the surrounding mining industry. This population growth resulted in housing availability and affordability issues across both regions and in particular the Mackay Region. It also placed considerable pressure on existing services and facilities as well as labour supply for non-mining sector businesses. At the time of writing, and due to the presence of these existing cumulative impacts, these two regions were not considered suitable home base locations for the project workforce. The slow-down in the mining industry and the corresponding reduction in the number of mine employees across the Mackay and Fitzroy Regions has had a dramatic impact on housing availability and affordability, suggesting that these areas may now have an existing supply of suitable labour and capacity to accommodate a proportion of the workforce for the project. However, the cyclical nature of the mining industry suggests that, into the future, these regions will again experience sustained population growth coupled with high demand for housing, services and facilities. To this end, the proponent has committed to updating the project labour study closer to the commencement of the construction and early works phase in order to inform project workforce recruitment and logistics planning.

2 BASELINE STATISTICAL PROFILE

This section presents the supporting statistical and qualitative data relevant to the assessment of potential socio-economic impacts.

2.1 COMMUNITY DEMOGRAPHICS

2.1.1 Population and Population Growth

Table 1 presents population and population growth data for the project Areas of Influence. Notable trends in the data include:

- A decline in the population of Charters Towers UCL between 2006 and 2011, and negative projected population growth between 2011 and 2036;
- Nil projected population growth between 2011 and 2036 for the Charters Towers LGA;
- High population growth anticipated in both the Mackay and SEQ Regions from 2011 to 2036; and
- Steady projected population growth (3%) anticipated in the Townsville Region between 2011 and 2036.

Table 1
Population and Population Growth

Geographic Location	Population 2011	Average Annual Growth Rate 2006-2011 (%)	Projected Population 2036	Expected Average Annual Growth Rate 2011-2036 (%)
Surrounding Area	679	N/A	N/A	N/A
Mackay Region	166,811	1.8	284,281	3.3
Isaac LGA	22,588	2.1	36,676	2.9
Clermont SA2[a]	3,805	1.2	5,698	2.4
Clermont UCL	2,177	2.7	N/A	N/A
Townsville Region	217,897	1.6	361,098	3.0
Charters Towers LGA	12,169	0.3	12,459	0.0
Charters Towers UCL	8,234	-0.2	8,207	-0.1
Townsville LGA	174,529[b]	2.6[b]	314,360	3.7
Cairns Region	224,436	1.5	346,269	2.4
Wide Bay Region	273,267	1.1	385,119	1.9
SEQ Region	2,880,547	N/A	4,895,091	3.2
Brisbane GCSA	2,065,996	2.4	3,441,127	3.0
Gold Coast SA4	507,642	2.0	922,267	3.7
Sunshine Coast SA4	306,909	1.5	531,697	3.4
Queensland	4,332,739	1.7	7,095,177	2.9

Source: ABS 2013; OESR 2011, QGSO 2013c

Notes:

a) Data is presented for the Clermont SA2, which comprises the township of Clermont and surrounding rural areas, as there are no population projections available for the Clermont UCL.

b) Data is presented for the Townsville SA3 as data is not available at an LGA level.

2.1.2 Age and Gender Distribution

Table 2 presents key demographic data for the project Areas of Influence. Notable trends occurring at a regional level and evident in Table 2 include:

- A high proportion of males in the population of the Mackay and Townsville Regions when compared with the Queensland population;
- A significantly higher proportion of Indigenous persons in the population of the Townsville and Cairns Regions compared to the Queensland population; and
- A high proportion of people aged over 65 years in the Wide Bay Region when compared to other regions of interest.

The following trends are evident at a local level:

- A high proportion of Indigenous persons in the Charters Towers LGA when compared to other areas of interest; and
- A higher proportion of persons aged less than 15 years in the Charters Towers and Isaac LGAs, and the Charters Towers and Clermont UCLs compared to other areas of interest.

Table 2
Demographic Summary Statistics 2011

Geographic Location	Population (%)				
	Male	**Indigenous**	**Median Age**	**<15 years**	**>65 years**
Surrounding Area	50.2	3.1	n/a	34.2	5.2
Mackay Region	52.4	4.1	35	21.4	10.1
Isaac LGA	55.6	2.7	31	25.3	4.0
Clermont UCL	51.4	3.3	32	22.0	11.0
Townsville Region	50.0	7.0	34	21.0	11.0
Charters Towers LGA	50.1	7.9	38	22.7	15.4
Charters Towers UCL	48.6	10.0	37	23.0	17.0
Cairns Region	49.8	10.3	37	21.3	12.2
Wide Bay Region	49.3	3.9	43	19.8	19.8
SEQ Region	49.1	1.8	NA	19.7	12.9
Brisbane GCCSA	49.3	2.0	35	20.0	11.8
Gold Coast SA4	48.9	1.3	38	18.6	14.6
Sunshine Coast SA4	48.4	1.5	42	19.0	18.2
Queensland	49.6	3.6	36	20.2	13.2

Source: ABS 2013

2.1.3 Indigenous Population

In 2011 the Local Area had an Indigenous population of 1,564 persons of which 962 resided in the Charters Towers LGA and 602 resided in the Isaac LGA. The Indigenous population of the Local Area constitutes 4.5% of the total population of the Local Area.

In 2011 the Regional Area had an Indigenous population of 22,259 of which the vast majority (15,411) were located in the Townsville Region. Table 3 presents the size of the Indigenous population in the project Areas of Influence.

Table 3
Indigenous Persons, 2011

Census Geographic Area	2006			2011		
	Indigenous Persons	Total Pop.	% of Total Pop.	Indigenous Persons	Total Pop.	% of Total Pop.
Local Area:						
- Charters Towers LGA	828	7,979	10.4	962	12,169	7.9
- Isaac LGA	-	-	-	602	22,588	2.7
Regional Area:						
- Mackay Region	5,480	150,175	3.6	6,848	166,811	4.1
- Townsville Region	8,224	143,328	5.7	15,411	217,897	7.1
Queensland	127,578	3,904,532	3.3	155,825	4,332,739	3.6

Source: ABS 2013

Indigenous Population Age Structure

The age structure of the Indigenous population residing in the Local and Regional Areas of Influence is presented in Table 4**.** The Indigenous population of the Local and Regional Areas of Influence exhibits similar age structure characteristics as the Indigenous population of Queensland. A significantly higher proportion of the Indigenous population of the Isaac LGA is aged between 25 years and 44 years compared to the Charters Towers LGA, the Regional Area and Queensland. This is likely attributable to the presence of the mining industry and the associated job opportunities.

Table 4
Age Distribution 2011 – Proportion of Indigenous Persons (%)

Age Cohort	Charters Towers LGA	Isaac LGA	Mackay Region	Townsville Region	QLD
0-4 years	7.4	9.8	7.5	7.2	6.9
5-14 years	15.3	15.5	13.9	13.9	13.3
15-19 years	7.3	5.4	6.4	7.6	6.8
20-24 years	4.8	6.9	6.6	7.6	6.8
25-34 years	10.8	18.4	14.7	13.8	13.5
35-44 years	13.4	17.3	14.6	14.1	14.3
45-54 years	12.8	14.2	14.9	13.6	13.7
55-64 years	12.7	8.5	10.9	10.8	11.6
65 years and over	15.4	4.0	10.1	11.0	13.2
Total Indigenous Population (No.)	962	602	6,848	15,411	155,825

2.1.4 Full Time Equivalent Population

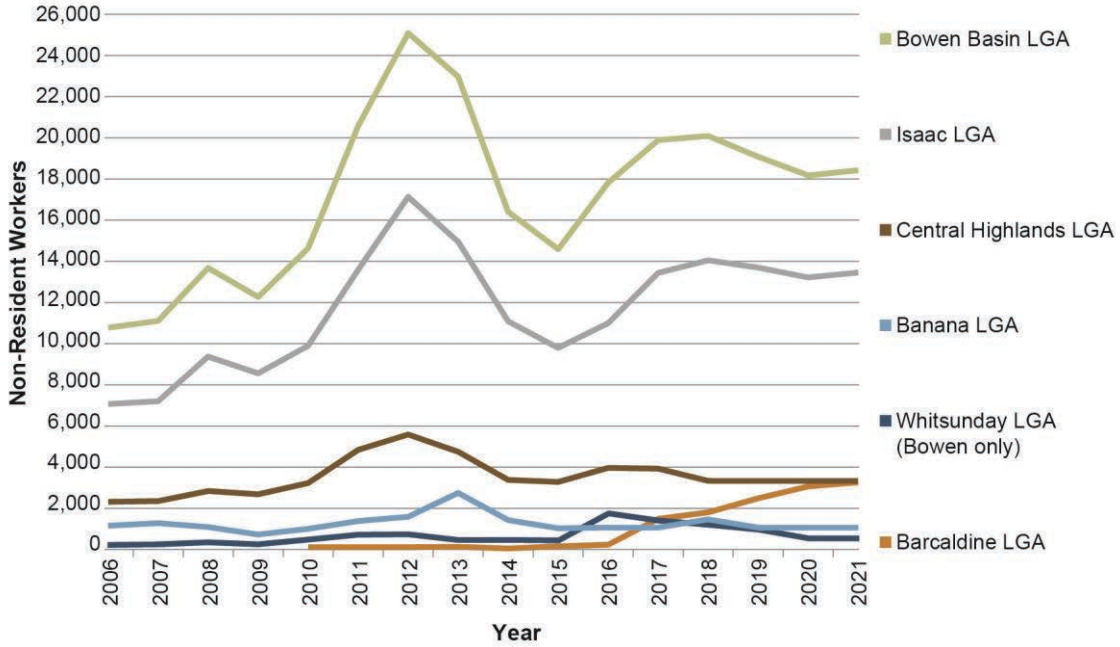
The full-time equivalent (FTE) is a measure of the estimated resident population (ERP) and the non-resident worker (NRW) population in a location. The ABS provides annual ERP numbers for LGAs and key locations within LGAs. The QGSO provides estimates of NRW population and FTE estimates for the following LGAs and component communities:

- Barcaldine;
- Isaac;
- Central Highlands;
- Banana; and
- Whitsunday (Bowen only).

Estimates of Non-resident Workers

Graph 1 presents the estimated number of non-resident workers (NRWs) in these LGAs up to 2014, and the predicted number of NRWs from 2015-2021. The QGSO predicts a decline in NRW population for the Isaac LGA off the back of a marked peak of 17,000 in 2012. This is consistent with the decline in the mining industry following the end of the mining boom, during which many mining companies had a heavy reliance on NRWs. The NRW population for the Isaac LGA is expected to increase after 2015 and become steady by 2017, due to the timing of several large mining projects including the Carmichael Coal Mine and Rail Project. The size of the non-resident workforce in neighbouring LGAs of Whitsunday and Central Highlands is significantly smaller than the Isaac LGA. The high number of NRWs projected for the Barcaldine LGA is likely attributed to the timing of the Alpha Project, China First Project, South Galilee Coal Project and Kevin's Corner Project, all of which are expected to have a heavy reliance on NRWs.

Graph 1
QGSO Estimates of Non-Resident Workforce



Source: QGSO estimates, 2010 to 2014; QGSO projections, 2015 to 2021

Estimates of FTE Population

The OESR does not produce FTE estimates for the Townsville Region or the Mackay Region. However FTE population estimates are available for the Isaac LGA and for the Whitsunday LGA – Bowen only. In 2014 the Isaac LGA had an FTE population of 35,540 persons including 11,085 NRW. At the same time the Whitsunday LGA (Bowen only) had an FTE population of 14,090 including 465 NRW. Within the Isaac LGA, Clermont had an FTE population of 2,440 including 10 NRW. The OESR does not produce FTE population estimates for the Charters Towers LGA or Charters Towers Township.

2.1.5 Family Structure

Table 5 and Graph 2 summarise the family structures in the project Areas of Influence. The following trends are evident in Table 5:

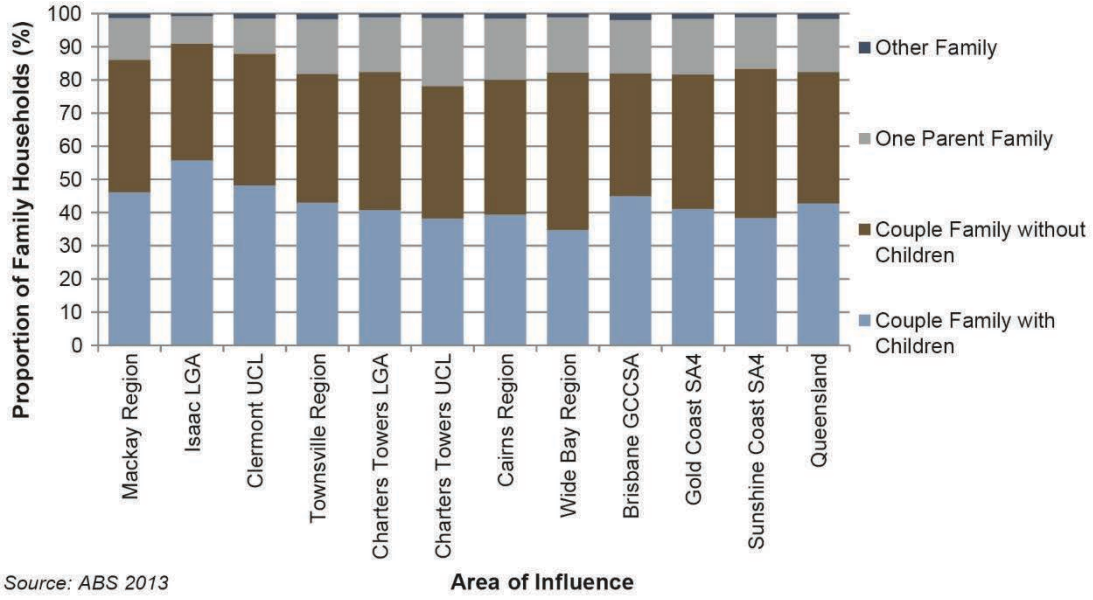
- Clermont UCL and the Isaac LGA have significantly higher proportions of couple families with children than all other areas of interest;
- The Wide Bay Region has a significantly higher proportion of couple families with no children; and
- Charters Towers UCL has the highest proportion of one parent families.

Table 5
Family Structure Statistics, 2011

Geographic Location	Couple Family with Children	Couple Family without Children	One Parent Family	Other Family	Children per Family
	% Family Households				
Surrounding Area	29.3	n/a	n/a	n/a	2.4
Mackay Region	46.1	39.9	12.7	1.2	1.9
Isaac LGA	55.8	35.1	8.4	0.7	2.0
Clermont UCL	48.2	39.7	10.7	1.5	1.9
Townsville Region	43.0	38.8	16.5	1.7	1.9
Charters Towers LGA	40.8	41.5	16.6	1.1	2.0
Charters Towers UCL	38.2	39.9	20.6	1.4	1.9
Cairns Region	39.4	40.6	18.6	1.5	1.9
Wide Bay Region	34.8	47.4	16.7	1.1	1.9
Brisbane GCCSA	45.0	37.0	16.1	2.0	1.9
Gold Coast SA4	41.1	40.5	16.9	1.5	1.8
Sunshine Coast SA4	38.4	45.0	15.5	1.1	1.8
Queensland	42.8	39.5	16.1	1.7	1.9

Source: ABS 2013

Graph 2
Family Structure, 2011



Source: ABS 2013

2.2 HOUSING AND ACCOMMODATION

2.2.1 Households and Household Structure

Table 6 illustrates household structure and occupancy rates across the project Areas of Influence. Table 6 shows that in 2011:

- Charters Towers UCL comprises 2,856 households, of which 70% were family households, 26.4% were lone person households and 3.4% were group households (shared households of unrelated people); and
- Clermont UCL comprises 769 households, of which 69% were family households, 26.8% were lone person households and 3.9% were group households.

Table 6
Household Structure and Occupancy

Geographic Location	Households	Household Structure (%)			Household Occupancy Rate
		Family	Lone Person	Group	
Surrounding Area	218	76.0	19.4	4.6	3.1
Mackay Region	56,065	75.2	20.9	3.9	2.7
Isaac LGA	6,651	77.6	18.9	3.5	2.9
Clermont UCL	769	69.0	26.8	3.9	2.5
Townsville Region	76,541	72.6	22.7	4.7	2.6
Charters Towers LGA	4,213	72.1	25.0	2.9	2.5
Charters Towers UCL	2,856	70.0	26.4	3.4	2.5
Cairns Region	82,283	69.6	26.0	4.4	2.5
Wide Bay Region	104,325	71.8	25.1	3.1	2.4
Brisbane GCCSA	732,491	72.9	21.8	5.2	2.7
Gold Coast SA4	186,438	71.2	22.9	5.9	2.5
Sunshine Coast SA4	116,715	72.6	23.5	3.9	2.5
Queensland	1,547,306	72.4	22.8	4.7	2.6

Source: ABS 2013

Table 6 also highlights the significant number of lone person households in a number of project Areas of Influence including Wide Bay Region, Cairns Region Charters Towers LGA and UCL and Clermont UCL. In Wide Bay the number of lone person households is likely attributable to the presence of sizeable population aged over 65 years (Table 2). In Charters Towers UCL the number of lone person households may be attributable to the availability and cost of housing coupled with the sizeable population of retired graziers.

Across the project Areas of Influence, the smaller areas of the Isaac LGA and the Surrounding Area had the largest proportions of family households. The prevalence of

families in the Isaac LGA can be attributed to the dominance of the mining industry and the popularity of centres such as Moranbah as family friendly locations for permanent residency.

Household Occupancy Rates

The Surrounding Area has a significantly higher household occupancy rate than Queensland but a small number of family households. This is likely due to the rural setting and the use of farm labour from outside the family. The Mackay Region has a higher household occupancy rates than other regions in Queensland, though this is likely due to a combination of a large proportion of family households and shared accommodation for mining workers in mining centres such as those in the Isaac LGA. Brisbane GCCSA also has a higher occupancy rate than Queensland, though this is to be expected given the densely populated nature of this area. Some urban areas, such as the Charters Towers and Clermont UCLs, and Gold Coast SA4 have a lower occupancy rate than Queensland.

2.2.2 Dwelling Structure

Table 7 details the dwelling structure across the project Areas of Influence. All project Areas of Influence, with the exception of Brisbane GCCSA, have high rates of unoccupied private dwellings compared to Queensland.

Table 7
Dwelling Structure 2011

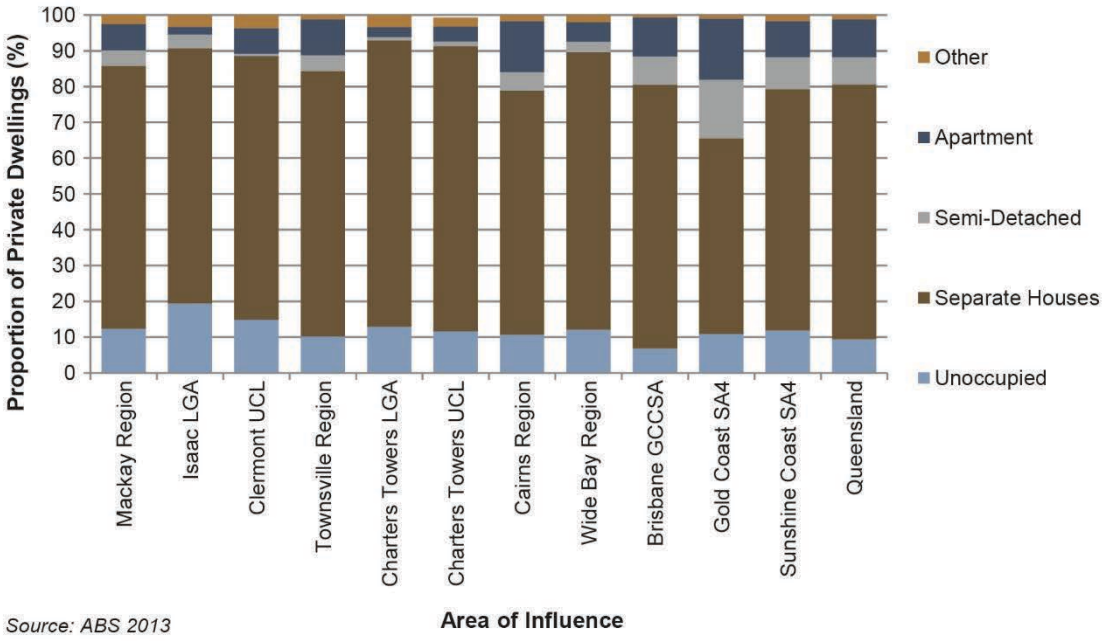
Geographic Location	Total Dwellings	Unoccupied Private Dwellings	Dwelling Structure (%)			
			Separate Houses	Semi-Detached[a]	Apartment[b]	Other
Mackay Region	71,407	14.1	83.6	5.0	8.4	2.8
Isaac LGA	10,016	24.0	88.3	4.7	2.7	4.1
Clermont UCL	1,047	17.4	86.5	0.8	8.4	4.3
Townsville Region	92,413	11.3	82.5	4.9	11.2	1.3
Charters Towers LGA	5,518	14.8	91.8	1.0	3.2	3.9
Charters Towers UCL	3,640	13.2	90.8	1.5	4.7	2.9
Cairns Region	102,510	11.9	76.3	5.8	15.9	1.9
Wide Bay Region	127,906	13.7	88.1	3.3	6.2	2.3
Brisbane GCCSA	821,059	7.3	79.0	8.5	11.7	0.7
Gold Coast SA4	226,409	12.2	61.3	18.4	19.1	1.1
Sunshine Coast SA4	141,952	13.5	76.5	10.1	11.5	1.9
Queensland	1,826,449	10.3	78.5	8.4	11.7	1.3

Source: ABS 2013
Notes:

a) Semi-Detached, Row or Terrace House, Townhouse
b) Flat, Unit or Apartment

In 2011, the Isaac LGA had a significantly higher proportion of unoccupied private dwellings compared to all other areas of interest. This is likely due to the high number of NRWs in the Isaac LGA, many of whom were unlikely to be on roster and therefore may not have been at their rented accommodation in the Isaac LGA on the night of the Census.

Graph 3
Dwelling Structure, 2011



Source: ABS 2013

The dominant housing structure across the project Areas of Influence is separate houses. Charters Towers LGA has the largest proportion of separate houses of the project Areas of Influence highlighting a potential lack of housing diversity.

The Gold Coast SA4 has a lower proportion of separate houses and higher proportion of apartments and units than all other areas of interest.

2.2.3 Housing Costs

Table 8 presents housing costs for the project Areas of Influence, based on 2011 Census data. The Mackay Region and Gold Coast SA4 have substantially higher median mortgage repayments compared to the other areas of interest and to Queensland. It is well known that a number of urban centres in the Mackay Region, namely Moranbah, recorded the highest median sale prices in Australia during the mining boom. The Charters Towers LGA and UCL, and the Wide Bay Region present substantially lower housing costs.

Table 8
Housing Costs 2011

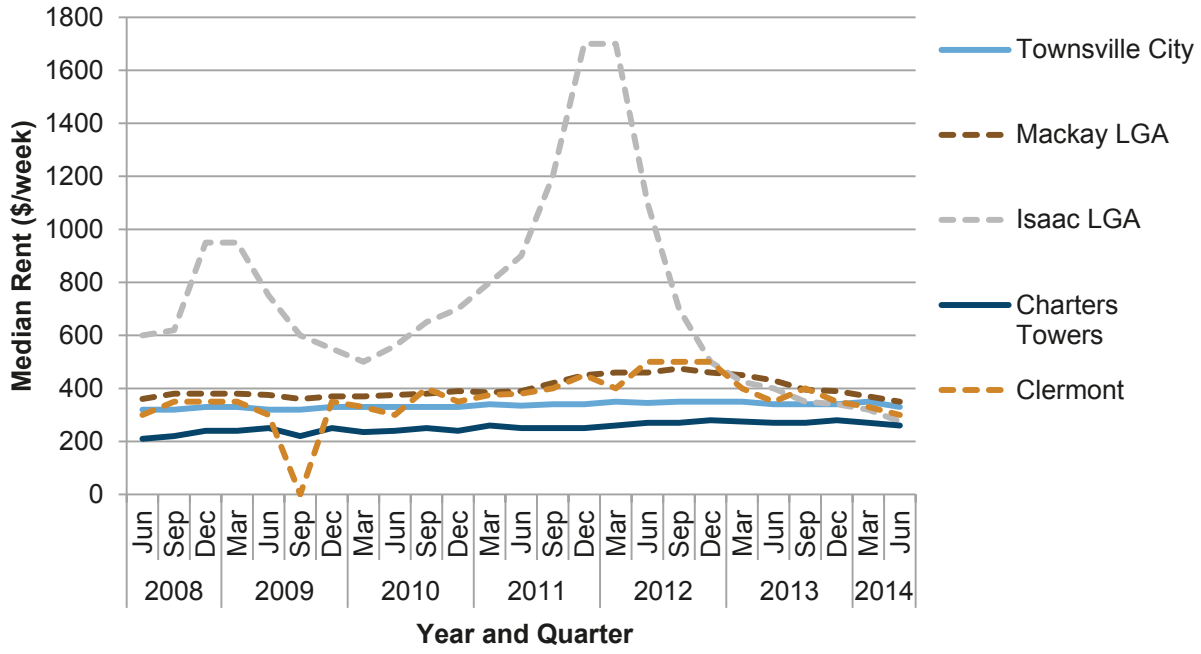
Geographic Location	Median Mortgage Repayments ($/month)		Median Rent ($/week)	
	2006	2011	2006	2011
Mackay Region	1,300	2,013	160	270
Isaac LGA	1,146	1,907	52	63
Clermont UCL	NA	1,517	NA	100
Townsville Region	1,150	1,733	170	260
Charters Towers LGA	901	1,350	120	170
Charters Towers UCL	867	1,369	130	190
Cairns Region	1,170	1,647	175	240
Wide Bay Region	910	1,322	160	220
Brisbane GCCSA	1,300	1,950	220	325
Gold Coast SA4	1,506	2,058	270	350
Sunshine Coast SA4	1,300	1,863	245	320
Queensland	1,300	1,850	200	300

Source: ABS 2013

The Isaac LGA has a significantly lower median weekly rent in both 2006 and 2011, due to the subleasing of rental properties by mining companies. In many mining towns, it is common practice for a mining company to hold the head lease of a property, then sub-let the property to an employee for a significantly reduced rent. The mining company pays a substantial bond to the Residential Tenancies Authority (RTA), and the employee in turn pays a nominal bond to the RTA. The ABS only records rent paid by the final tenant of a property (Table 8), whereas the RTA records both the head lease bond and the sub-lease bond and is hence more representative of the real rental market conditions.

Bond data from the RTA offers a more up-to-date and accurate picture of what is actually being paid for rental accommodation. For example, while ABS Census data indicates that the median rent for the Isaac LGA in 2011 was $63 per week, RTA data indicates that the median rent for a three-bedroom house in the Isaac LGA in June quarter 2011 was over $900 per week (RTA 2014). Graph 4 presents median rents for a three-bedroom house for selected areas between 2008 and 2014.

Graph 4
RTA Median Rent for Selected Areas, 2008 - 2014



Source: RTA 2014
Note: The RTA collates median rental data by postal areas, not ABS statistical regions. As such, some areas correlate to the SIA Areas of Influence while some are only rough approximations.

The median rents, as shown in Graph 4, for the Mackay Region, Isaac LGA and Clermont were typically higher than the median rents for Townsville City and Charters Towers throughout the period June quarter 2008 to June quarter 2014. Graph 4 also demonstrates the stability of rental market in Townsville City and Charters Towers, and the relative volatility of the Isaac LGA and Clermont rental markets.

2.2.4 Mortgage and Rental Stress

Table 9 details mortgage and rental stress in 2011 across the project Areas of Influence. Housing stress (either mortgage or rental) is indicated where a household spends more than 30% of its income on either a mortgage or rental.

Table 9 shows that the large coastal centres experience greater mortgage and rental stress than smaller rural townships and LGAs. However, it should be noted that as housing stress is a measure of both income and housing prices, and while housing prices may be extremely high in one area, incomes in that area may also be high, leading to low housing stress.

Table 9
Mortgage and Rental Stress, 2011

Geographic Location	Rental Stress		Mortgage Stress	
	Households under Stress	Proportion of Households (%)	Households under Stress	Proportion of Households (%)
Mackay Region	4,373	7.8	4,261	7.6
Isaac LGA	359	5.4	146	2.2
Clermont UCL	43	5.6	25	3.2
Townsville Region	7,960	10.4	5,894	7.7
Charters Towers LGA	286	6.8	303	7.2
Charters Towers UCL	274	9.6	163	5.7
Cairns Region	10,368	12.6	7,406	9.0
Wide Bay Region	11,998	11.5	8,138	7.8
Brisbane GCCSA	85,702	11.7	73,249	10.0
Gold Coast SA4	31,507	16.9	24,609	13.2
Sunshine Coast SA4	16,106	13.8	13,305	11.4
Queensland	184,129	11.9	150,088	9.7

Source: ABS 2013

2.2.5 Social and Community Housing

The Charters Towers Neighbourhood Centre (CTNC) manages emergency and crisis housing and administers a community housing program on behalf of the Queensland Government in Charters Towers. The CTNC manages 34 community houses in Charters Towers Township.

There are approximately 125 government houses in Charters Towers and Pentland, managed by the Department of Housing and Public Works.

Clermont Community Housing and Other Services (CCHAOS) manage two emergency accommodation units, one emergency house and four low-income units in Clermont. During consultation for the project, CCHAOS representatives indicated that emergency and crisis accommodation in Clermont is almost permanently full; there is high demand for low-income and emergency accommodation due to high numbers of retiring graziers in the township.

2.2.6 Temporary Accommodation

Temporary accommodation includes tourist accommodation such as motels, serviced apartments and caravan and camping sites, as well as short-term or periodic accommodation such as mining camps.

In the context of the project, it is only relevant to understand the supply of short term accommodation in the following locations within the project Areas of Influence, due to the largely FIFO nature of the workforce and the remoteness of the project site:

- Surrounding Area; and
- Local Area (Charters Towers LGA and Isaac LGA).

Tourist Accommodation

There are 22 accommodation providers in the Charters Towers LGA. In Charters Towers Township, there are nine motels, two hotel/motels, two pubs with accommodation, and three caravan parks with cabins. Hotels and motels within the Charters Towers Township are largely utilised by corporate travellers, while the caravan parks and camping sites throughout the LGA are frequented primarily by "grey nomads" and driving tourists. The Charters Towers Visitor Information Centre reported during EIS consultation that an estimated average of 150,000 tourists visit the LGA each year. While there has been a slight drop in tourists visiting the township in 2014, this has not been as severe as in other Queensland regions and demand has remained strong. Despite strong demand, it was reported that there is surplus capacity in short-term accommodation, especially within the hotels and motels in Charters Towers Township.

Short-term and tourist accommodation in Clermont is provided in six hotels/motels and a single caravan park. Fluctuations in the NRW population of Clermont have previously resulted in pressure on these accommodation providers, however the closure and downsizing of mines in the Bowen Basin, including Blair Athol near Clermont, has resulted in a lessening of pressures on these establishments. Consultation for the project indicated that there is ample vacancy in short-term accommodation in Clermont.

Table 10
Tourism Accommodation Provision

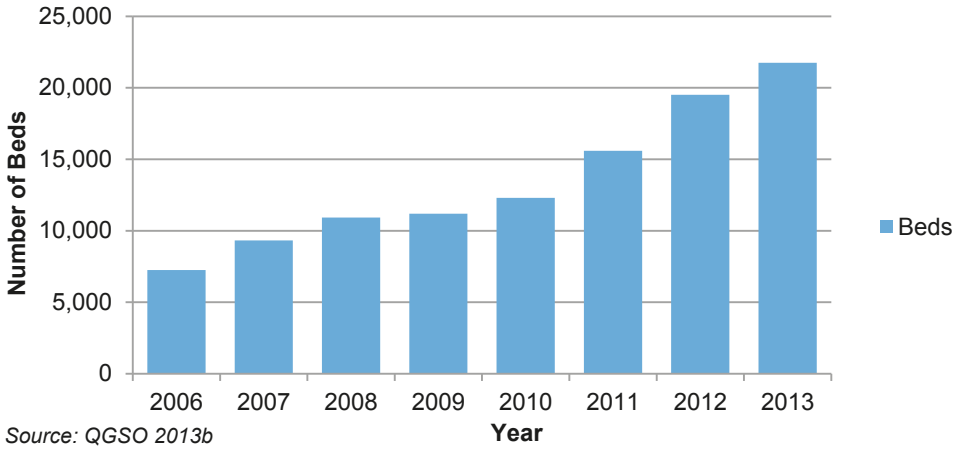
Geographic Location	Estimated No. of Establishments	Estimated No. of Rooms
Surrounding Area	1	N/A
Charters Towers LGA	22	421
Isaac LGA	24	1,375

Source: QGSO 2013a, Personal Communications

Purpose Built Workforce Accommodation

Worker accommodation villages (WAVs) are common throughout mining communities in Queensland. There are no WAVs within the Charters Towers LGA. In contrast, there are over 21,000 beds in WAVs in the Isaac LGA. This is due to the significant mining development in the Isaac LGA. The number and size of WAVs have steadily increased in the Isaac LGA since 2006, as shown in Graph 5.

Graph 5
Worker Accommodation Village Beds 2006-2013



Source: QGSO 2013b

2.2.7 Recent Housing Growth

Table 11 presents a summary of residential building approvals granted in all project Areas of Influence between 2006 and 2013. Table 11 shows the relative size of the level of residential development in each of the LGAs. In 2011, both the number and value of total residential building in the Isaac LGA peaked at $51.3 million. This peak coincides with a peak in the mining boom and a corresponding peak in demand for housing in Moranbah and surrounding communities. Conversely, the number and value of residential building in Charter Towers LGA has fluctuated between 2006 and 2011, peaking in 2008. Clearly the mining boom that affected housing demand and supply across Bowen Basin communities between 2006 and 2012 did not have a marked effect on Charters Towers LGA.

Table 11
Residential Building Approvals 2006-2013

Geographic Area	2006	2007	2008	2009	2010	2011	2012	2013
Isaac LGA								
Private Dwelling units	n/a	132	74	80	161	207	n/a	n/a
Total Dwelling units	n/a	134	124	89	165	212	n/a	n/a
Total Building value ($m)	n/a	47.9	43.2	28.8	37.7	51.3	n/a	n/a
Charters Towers LGA								
Private Dwelling units	n/a	43	52	51	49	32	n/a	n/a
Total Dwelling units	n/a	43	52	51	57	36	n/a	n/a
Total Building value ($m)	n/a	12.3	14.5	13.5	18.4	11.2	n/a	n/a
Mackay Region								
Private Dwelling units	1,628	1,709	1,290	1,266	1,284	1,427	2,433	2,075
Total Dwelling units	1,648	1,742	1,354	1,331	1,461	1,451	2,448	2,091
Total Building value ($m)	637	765	749	956	790	683	1,173	1,071

Geographic Area	2006	2007	2008	2009	2010	2011	2012	2013
Townsville Region								
Private Dwelling units	2,023	2,625	2,006	1,440	1,380	1,257	1,712	1,633
Total Dwelling units	2,085	2,675	2,117	1,812	1,748	1,373	1,778	1,732
Total Building value ($m)	1,032	1,170	1,079	1,189	861	942	1,030	711
Cairns Region								
Private Dwelling units	2,922	3,203	1,945	1,286	1,017	760	806	788
Total Dwelling units	2,944	3,247	1,969	1,440	1,258	785	809	792
Total Building value ($m)	989	1,152	1,345	733	669	775	413	432
Wide Bay Region								
Private Dwelling units	3,110	3,474	2,702	2,165	1,911	1,376	1,415	1,263
Total Dwelling units	3,148	3,508	2,750	2,231	2,290	1,379	1,419	1,270
Total Building value ($m)	814	933	843	909	748	465	442	618
Brisbane GCCSA								
Private Dwelling units	15,397	19,012	16,000	13,606	16,928	14,372	13,285	17,921
Total Dwelling units	15,687	19,445	16,431	14,386	18,135	14,617	13,321	18,108
Total Building value ($m)	7,023	9,613	11,151	7,776	8,789	8,382	6,632	9,024
Gold Coast SA4								
Private Dwelling units	6,484	7,587	5,719	3,554	3,153	2,453	2,245	3,530
Total Dwelling units	6,524	7,601	5,759	3,608	3,273	2,484	2,248	3,532
Total Building value ($m)	2,862	3,144	3,195	3,606	1,531	1,481	1,176	1,798
Sunshine Coast SA4								
Private Dwelling units	3,172	3,712	3,386	2,377	2,739	1,973	1,565	2,520
Total Dwelling units	3,205	3,779	3,442	2,432	2,822	1,983	1,565	2,521
Total Building value ($m)	1,257	1,621	1,472	1,203	1,130	1,109	674	1,967

Source: QGSO 2014a

2.2.8 Residential Land Supply

Region

This section provides a brief assessment of the residential land supply in the project Areas of Influence and is based on data provided in Table 12.

The Wide Bay Region has low land costs and housing costs compared to other regions of interest. It also has a larger median lot size, indicating substantial capacity to accommodate residential growth.

The Mackay Region has noticeably higher land and housing costs than other regions of interest with the exception of the SEQ Region.

Table 12
Residential Development Statistics 2012

Geographic Location	Broadhectares for Development (ha)	Dwellings	Median Size of Lots Registered (m^2)	Median Price per m^2 of Vacant Land ($)	Detached Dwelling Sales – Median Price ($)
Mackay Region	3,430	21,000	641	300	415,000
Townsville Region	5,020	NA	550	267	348,000
Cairns Region	7,160	27,000	630	177	340,000
Wide Bay Region	12,300	31,000	828	126	282,000
SEQ Region	39,530	455,000	450	419	430,000

Source: OESR 2013b

Local Area

Charters Towers Regional Council (CTRC) identifies the freeing of land for residential and industrial development as a major goal in the Economic Development Plan (CTRC 2013). Current land development in Charters Towers meets forecast demand. Current residential developments in Charters Towers Township include the Cunningham Industrial Estate (11 lots) and a 300-lot residential subdivision.

Clermont has a surplus of available housing, with new housing constructed during the mining boom, currently vacant. A recent development of housing at McDonald's Flat Road offers approximately 80 units of housing, of which there are numerous vacancies. It is understood that a second stage of this project is currently being constructed. In addition, the Isaac Regional Council (IRC) has constructed three affordable housing units in Clermont at the Griffith Affordable Housing Precinct, and developed a land bank of residential land for future release if demand rises in the area.

2.2.9 Future Dwelling Projections

The predicted future demand for dwellings in the project Areas of Influence is presented in Table 13.

Table 13
Dwelling Predictions, 2011-2036

Geographic Area	Total Private Dwellings						Average Annual Change (%)
	2011	2016	2021	2026	2031	2036	
Mackay Region	67,028	75,940	85,090	94,268	104,155	114,643	2.84
Isaac LGA	9,191	10,569	11,994	13,364	14,766	16,206	3.05
Townsville Region	89,566	100,211	112,055	124,126	136,742	149,800	2.69
Charters Towers LGA	5,013	5,053	5,090	5,112	5,124	5,127	0.09

Geographic Area	Total Private Dwellings						Average Annual Change (%)
	2011	2016	2021	2026	2031	2036	
Cairns Region	97,499	106,931	117,864	128,732	139,832	150,982	2.19
Wide Bay Region	121,670	133,085	144,915	156,099	167,026	177,637	1.84
Brisbane GCCSA	814,170	915,056	1,024,263	1,132,791	1,244,491	1,358,598	2.67
Gold Coast Region	222,645	251,491	287,302	323,384	361,583	401,746	3.22
Sunshine Coast Region	137,876	153,940	173,831	194,099	215,244	237,129	2.88
Queensland	1,779,461	1,989,682	2,221,781	2,453,722	2,693,572	2,939,500	2.61

Source: QGSO 2014b,c

Future dwelling demand is predicted to be low in the Charters Towers LGA, with an annual average increase of less than 1%. Dwelling demand in the Isaac LGA is expected to be higher than the Queensland average, with an annual growth rate of over 3%. The Mackay Region is anticipated to grow at a faster rate than the Townsville Region. This rate of growth, combined with the available broadhectare land in the Mackay Region compared to the Townsville Region (Table 12) suggests housing market strain is more likely to be felt in the Mackay Region than the Townsville Region between 2011 and 2036.

2.3 SOCIAL INFRASTRUCTURE ACCESSIBILITY

This section describes the current and future provision of community infrastructure (facilities and services) in the project Areas of Influence. The discussion focuses on:

- The infrastructure of most relevance to the assessment of project socio-economic impacts; and
- The infrastructure located in the closest communities to the project site, being Clermont within the Isaac LGA, and Charters Towers within the Charters Towers LGA.

2.3.1 Emergency Services

Emergency service providers in both Clermont and Charters Towers have responsibility for servicing the Surrounding Area. Consultation with emergency services revealed that emergency response from one township or the other depended on the distance to the incident and the availability of responders. Of the two townships, Charters Towers has the larger emergency service units in terms of employees and equipment.

Fire Services

Charters Towers has a permanent Queensland Fire and Rescue Service (QRFS) station manned by both full-time staff and volunteers. Charters Towers is located in the Townsville Region of the QFRS. Clermont is located in the Central Region of the QFRS and has an auxiliary QFRS station, staffed primarily by volunteers.

The project site and Surrounding Area is also covered by a volunteer Brigade from Rural Fire Service Queensland.

Police Services

Charters Towers has a Queensland Police Service (QPS) station with 18 full-time uniformed staff, including:

- Two staff in Criminal Investigation Branch;
- Three staff in Stock and Rural Crime Investigative Squad;
- One Juvenile and Child Protection & Investigator;
- Two staff in Traffic Branch;
- One Police and Citizen's Youth Club Manager; and
- One school-based Police Officer.

Charters Towers Police have four marked police vehicles and two unmarked police vehicles.

Clermont Police Station has five staff and a single vehicle. During consultation, representatives of Clermont QPS indicated that the lack of police vehicles suitable for dirt roads, such as those that service the project site, makes remote servicing difficult for Clermont QPS. QPS staff work in two eight-hour shifts daily, and on weekends must remain close to town on call.

Ambulance Services

Queensland Ambulance Service (QAS) in Charters Towers services an area of approximately 60,000 square km and has a staff of nine. The QAS in Clermont has four full-time staff and two vehicles. QAS staff members in both townships work day shifts and are on call at night. Both townships are serviced adequately for their size and projected population growth.

Rescue

The Royal Flying Doctor Service (RFDS) delivers primary health care and 24-hour emergency services to rural and remote Australia and has bases throughout Queensland. The two closest bases to the project site are Townsville and Rockhampton. The RFDS base in Townsville has two planes, while the RFDS base in Rockhampton has three (RFDS 2013).

CareFlight operates aero medical services across the eastern coast of Australia and the Pacific Islands, primarily through community helicopters such as RACQ CareFlight and CareFlight Air Ambulances. CareFlight has bases in Mackay and Townsville and provides doctors to the RFDS services in Townsville and Rockhampton (CareFlight 2013).

2.3.2 Health Services

Charters Towers is serviced by a number of medical facilities and services including:

- Two General Practitioner (GP) clinics;
- Optometrist;
- Podiatrist;
- 140-bed aged care complex;
- Public mental health unit; and
- 25-bed public hospital.

The nearest referral hospital to Charters Towers Township is the Townsville Base Hospital which is located 134 km east of the township. The range of health services available in Charters Towers is commensurate with the size of the Township and its role as a regional centre.

The range of medical services in Clermont reflects the small size of the community and the proximity to the larger regional centres of Emerald and Mackay. Clermont has a 16-bed medical facility and a single GP, though the Isaac Regional Council (IRC) is endeavouring to attract more medical staff to the town. The nearest referral hospital for Clermont is the Mackay Base Hospital, 274 km north-east of the township.

2.3.3 Social Support Services

The Charters Towers community has access to a diverse range of locally based social support services. The CTNC is the hub for social service provision to the Charters Towers community, providing a range of services including:

- Community Support Program;
- Family Support Program;
- Disability Support Program;
- Carer Respite Program;
- Healthy Lifestyle Program;
- Mother's Group;
- Government-funded group home for disabled persons requiring 24-hour care; and

- Emergency Relief Program in conjunction with St Vincent de Paul, Uniting Church and the Salvation Army.

The CTNC also manages emergency and crisis housing and administers a Community Housing Program on behalf of the Queensland Government in Charters Towers.

CCHAOS provides a range of community services to Clermont, including:

- Domestic violence counselling;
- Legal aid; and
- Centrelink services.

CCHAOS also manages two emergency accommodation units, one emergency house and four low-income units. During consultation for the project, CCHAOS representatives indicated that emergency and crisis accommodation in Clermont is almost permanently full; there is high demand for low-income and emergency accommodation due to high numbers of retiring graziers in the township.

2.3.4 Education Facilities

Charters Towers
The town maintains a reputation as the education capital of rural north Queensland. There are eight schools, three of which service Prep to Year 7, one services Years 8 to 12 and four schools service Prep to Year 12 (Table 14). Three of these schools are private boarding schools, and there is one state high school (SHS). There are a combined total of over 1,900 students attending schools in the Charters Towers Township per year.

Clermont
In Clermont, there are three schools in total, comprising two Prep to Year 7 and one SHS (Years 8 to 12) (Table 14). Clermont schools educate approximately 450 students in total.

Table 14
Schools in Clermont and Charters Towers

School	Years Offered	Students (2011/12)	Location
St Joseph's School	Prep – Year 7	141	Clermont
Clermont State School	Prep – Year 7	158	Clermont
Clermont State High School	Years 8-12	149	Clermont
Charters Towers Central State School	Prep – Year 7	154	Charters Towers
Millchester State School	Prep – Year 7	273	Charters Towers
Richmond Hill State School	Prep – Year 7	376	Charters Towers

School	Years Offered	Students (2011/12)	Location
Charters Towers School of Distance Education	Prep –Year 12	334	Charters Towers
All Souls Saint Gabriel's School	Prep –Year 12	350	Charters Towers
Columba Catholic College	Prep –Year 12	233	Charters Towers
Blackheath and Thornburgh College	Prep –Year 12	257	Charters Towers
Charters Towers State High School	Years 8-12	379	Charters Towers

The Clermont SHS works in partnership with the Gateway to Industry Schools Program, and runs a Gateway to Agriculture Program from the school's campus. Gateway to Industry Schools are located in a number of communities within the project Areas of Influence. Each Gateway to Industry Program is focused on a specific industry, with some schools hosting multiple programs.

Table 15 summarises which schools in the project Areas of Influence host Gateway to Industry programs.

Table 15
Gateway to Industry Schools

Industry	School	Region
Manufacturing and Engineering	Sarina State High School	Cairns Region
	Ignatius Park College	Townsville Region
	Pimlico State High School	Townsville Region
	Runcorn State High School	Mackay Region
	Mackay State High School	Mackay Region
	Mackay North State High School	Mackay Region
	Mirani State High School	Mackay Region
	Bundaberg State High School	Wide Bay Region
	Bundaberg North State High School	Wide Bay Region
	Gin Gin State High School	Wide Bay Region
	Kepnock State High School	Wide Bay Region
	Biggenden State High School	Wide Bay Region
	Isis District State High School	Wide Bay Region
	Noosa District State High School	SEQ Region
	Bray Park State High School	SEQ Region
	Corinda State High School	SEQ Region
	Forest Lake State High School	SEQ Region
	Kelvin Grove State College	SEQ Region
	Rosedale State School	SEQ Region
	Kings Christian College	SEQ Region

Industry	School	Region
Construction	Caboolture State High School	SEQ Region
	Marsden State High School	SEQ Region
	Nudgee College	SEQ Region
	St Edmunds College	SEQ Region
	Upper Coomera State College	SEQ Region
Manufacturing and Engineering and Minerals and Energy	Marist College Ashgrove	SEQ Region
	Pioneer State High School	Mackay Region
Minerals and Energy	Kirwan State High School	Townsville Region
	Moranbah State High School	Mackay Region
	Dysart State High School	Mackay Region
	Wavell Heights State High School	SEQ Region
	Bundamba State Secondary College	SEQ Region
	Alexandra Hills State High School	SEQ Region

Source: Gateway Schools, 2013

Post-School Education

The Great Barrier Reef Institute of Tertiary and Further Education (TAFE) Charters Towers Campus offers Certificate courses in a number of fields including business management, children's services, tourism, information technology and engineering, as well as a variety of general and short courses.

Clermont previously had a Central Queensland TAFE campus, which offered limited courses. In July 2014, the Central Queensland Institute of TAFE merged with Central Queensland University (CQU) to form Queensland's first dual-sector training institution. As part of the agreement negotiated between Central Queensland TAFE and CQU, the university will assume responsibility for TAFE's campuses across the Central Queensland Region, including the campus in Clermont (Martin 2013). The strategic direction for the provision of vocational education in Clermont is yet to be determined.

2.3.5 Sport and Recreation Services

Local Area

Sport and recreation services play a large role in the Charters Towers community. Local opportunities include AFL, rugby, dance, tennis, lawn bowls, netball, pony club, basketball, gun club, cricket, athletics and squash. Charters Towers has a swimming complex with a 50 m outdoor swimming pool and 25 m heated pool. There are also plans to create a man-made lake, to further encourage recreation and tourism in the area.

The area's climate and availability of land ensure that outdoor sporting and recreation activities are widely accessible, and camping and fishing are common. There are

showground markets held on the 2nd Sunday of each month as well as a Goldfields Ashes cricket tournament and a local rodeo held annually.

Clermont's sporting activities include rugby league, rugby union, bowls, golf, tennis, motocross, netball, bush sports, cricket, polocrosse, pony club, racing club, rifle and pistol, softball, squash, athletics, swimming, power boat and ski club and volleyball. The area is also amenable to camping and bushwalking, and there are opportunities for fossicking and gold prospecting (QH 2013). There is a golf club, bowling club and skate park, as well as a local dam for water sports (CCBG 2012).

2.3.6 Retail and Commercial Services

Local Area

Charters Towers is well serviced in terms of retail and commercial businesses, with three large supermarkets (Coles, Woolworths and BI-LO) and a number of smaller food and produce stores, a Target Country and a wide variety of retail businesses. However, it has been recognised that residents often travel to Townsville for retail and entertainment. The Charters Towers Chamber of Commerce and Mines has recently committed to minimising the leakage of local spending as part of its economic development framework.

There is a wide range of businesses in Charters Towers, including supermarkets, butchers, produce stores, fashion, retail, banks, hairdressers, motor dealerships, travel agent, gifts and hardware. There are a number of mining support businesses in Charters Towers, and the Charters Towers Chamber of Commerce and Mines is placing an increased focus on mining support in its economic development plan.

Clermont's commercial and retail services are limited. The town has a single supermarket and a number of small retail businesses including hairdressers, real estate, banking, boutique clothing and gifts.

2.3.7 Public Transport

The Surrounding Area is remote and is not serviced by any form of public transport. The nearest services are provided via Charters Towers and Clermont and include:

- Air services;
- Bus; and
- Rail.

The Home Base Locations are all serviced by air, bus and rail services.

Air Services

Table 16 summarises the key airports in the workforce Home Base Locations.

Table 16
Airports in Home Base Locations

Airport	Annual Passengers	Current/Predicted Capacity Constraints
Brisbane	21,391,054	Yes – currently under strain; new runway to come online in 2020
Gold Coast	5,746,566	Yes – possible capacity issues during construction and operation for 2018 Commonwealth Games
Townsville	1,664,152	No
Cairns	3,901,000	No
Bundaberg	152,127	No
Hervey Bay	155,959	No

Source: respective airport websites, consultation

Townsville City is home to a major airport with security and facilities to accommodate international flights. The Townsville Airport is serviced by all major domestic air services and operates regular charter flights to mines in Queensland through several smaller carriers.

The Wide Bay Region has two commercial airports, in Hervey Bay and Bundaberg, which offer domestic services to Brisbane, Sydney and regional centres. Consultation with Regional Development Australia Wide Bay Burnett (RDA WBB) noted that both airports have surplus capacity.

The SEQ Region has two major domestic/international airports, Brisbane Airport and Gold Coast Airport, and one smaller domestic airport, the Sunshine Coast Airport. The Brisbane Airport Corporation is constructing a new runway at the Brisbane Airport, to be completed by 2020. The Gold Coast Airport has an unused terminal, with recognised capacity for Fly-In Fly-Out (FIFO) transportation (ABC News 2013).

Charters Towers Township has an airfield which is currently used only for charter flights but has capacity to service a commercial aircraft. During consultation for the project, the CTRC expressed a desire to attract a regional airline to service the airport.

Clermont has a small public airport, with an airstrip capable of landing a Dash-8-100 plane, but has no baggage handling facilities. There are currently no public passenger services running through Clermont Airport.

A number of regional airports are also located in the Mackay and Fitzroy Regions including in the regional centres of Mackay, Rockhampton, Emerald, Moranbah and Proserpine.

Rail Services

Charters Towers is located on The Inlander rail route which connects Townsville to Mount Isa. The Inlander is a Queensland Rail service and operates twice weekly in each direction.

There is no rail service through Clermont.

Bus Services

Douglas Coaches provides a daily (Monday to Friday) coach service between Charters Towers and Townsville. This is not a commuter service. Greyhound Australia operates a coach service, Townsville to Mount Isa and Tennant Creek, four times a week in each direction.

Mackay Transit Bus operates a service daily between Mackay and Emerald via Clermont.

School Bus Services in the Local Area

The provision of school bus services within the Local Area are shown in Table 17 and described in the EIS *Road Impact Assessment Report* (Appendix Q).

Table 17
School Bus Services in the Local Area

Route	Schools	Roads Travelled
Mingela to Richmond Hill SS (P308)	Richmond Hill SS, Charters Towers SHS	Flinders Highway
Mt Leyshon to Charters Towers SHS (S830)	Charters Towers SHS, Millchester SS, Charters Towers Central SS	Gregory Developmental Road, Rocky Creek Road
Kilcummin to Kilcummin SS (P1253)	Kilcummin SS	Kilcummin-Diamond Downs Road
Gemini Mountains to Clermont SS (P706)	Clermont SS, Clermont SHS, St Joseph's	Peak Downs Highway, Gregory Highway

Source: TMR 2014

2.4 LABOUR MARKET CHARACTERISTICS

2.4.1 Current Employment and Unemployment

Table 18 presents a summary of labour force characteristics in the Local Area.

Table 18
Unemployment Rates and Labour Force, 2011– 2015

Location	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Unemployment (Persons)					
Clermont SA2	37	42	49	60	87
Charters Towers SA2	305	456	276	426	549
Isaac LGA	140	152	155	260	392
Charters Towers LGA	339	520	317	489	658
Unemployment Rate (%)					
Clermont SA2	1.8	1.9	2.1	2.5	3.6
Charters Towers SA2	7.5	11.4	7.4	11.8	14.7
Isaac LGA	1.0	1.1	1.0	1.7	2.6
Charters Towers LGA	5.5	8.5	5.6	8.8	11.5
Labour Force (Persons)					
Clermont SA2	2,074	2,177	2,374	2,404	2,422
Charters Towers SA2	4,064	4,000	3,705	3,604	3,729
Isaac LGA	13,656	13,850	14,896	15,243	15,339
Charters Towers LGA	6,198	6,120	5,691	5,537	5,722

Source: Department of Employment 2015

Table 18 shows that:

- The unemployment rate in Charters Towers has increased from 5.5% in 2011 to 11.5% in 2015. At the same time the labour force has decreased from 6,198 people in 2011 to 5,722 in 2015.
- The labour force in the Isaac LGA has experienced a significant increase since March 2011.
- The unemployment rate in the Isaac LGA has doubled between 2011 and 2015, reflecting the slow-down in the mining industry. The unemployment rate remains well below the Queensland unemployment rate of 6.5% (Table 19).

Table 19 presents a summary of labour force characteristics in the Regional Area and Labour Sourcing Regions.

Table 19
Labour Force Characteristics, May 2015

Geographic Location	Labour Force			Unemployed		Participation Rate (%)	
	Persons	Change (Persons/%)		%	% Change	%	% Change
Mackay Region	96,900	-4,800	-4.7	7.1	2.8	72.5	-2.5
Fitzroy Region	116,600	1,800	1.6	6.1	0.3	69.6	0.4
Townsville Region	112,500	4,100	3.7	8.9	2.2	67.3	2.8
Cairns Region	108,300	-1,900	-1.7	7.9	-0.2	60.7	-2.2
Wide Bay Region	101,100	-7,400	-6.8	11.4	2.8	48.0	-2.7
Brisbane GCCSA	1,238,900	2,400	0.2	5.3	-0.7	66.9	-1.1
Gold Coast SA4	295,300	14,700	5.2	5.8	0.1	67.5	2.2
Sunshine Coast SA4	162,800	0	0.0	7.1	0.5	63.5	-0.7
Queensland	2,331,000	15,400	0.7	6.5	0.5	65.6	-0.3

Source: QGSO 2015

At May 2015 the Mackay Region had the highest labour force participation rate of all areas of interest. This is likely due to the dominance of the mining sector in this region. The lowest participation rates were experienced in the Wide Bay Burnett. This is likely associated with the size of the population in Wide Bay Region of retirement age.

With the exception of Gold Coast Region, Brisbane GCCSA and the Fitzroy Region, all regions of interest had unemployment rates above the Queensland unemployment rate of 6.5%. High unemployment rates were experienced in the Wide Bay Region (11.4%), Townsville Region (8.9%) and Cairns Region (7.9). Hence these locations are identified as potential labour source regions for the project.

2.4.2 Labour Force Status of Indigenous People

Table 20 presents labour force data for the Indigenous population of the Local and Regional Area. In 2011 there were 7 unemployed Indigenous people in the Isaac LGA,. In 2011 there were 82 unemployed Indigenous people in the Charters Towers LGA. In the Regional Area there were 1,291 unemployed Indigenous people of which 310 were located in the Mackay Region and 981 in the Townsville Region.

Table 20
Labour Force Status of Indigenous People - 2011 Census

Census Geographic Area	Total Indigenous Labour Force (no.)	Indigenous Unemployed (no.)	
		Number	% of Total Unemployed Persons
Isaac LGA	300	7	1.8
Charters Towers LGA	291	82	14.6
Mackay Region	2,777	310	7.8
Townsville Region	4,927	981	10.6
Queensland	52,800	9,573	10.4

Source: ABS 2013
Count of persons aged 15 years and over

2.4.3 Labour Force Characteristics

This section documents and analyses the following characteristics of the labour force in the Sub Regional Study Area:

- Industry of employment;
- Occupation; and
- Education attainment and qualifications.

Industry of Employment

Table 21 shows employment by industry for the project Areas of Influence. A specialisation in the mining industry is evident in the Mackay Region and in particular the Charters Towers and Clermont UCLs. These areas have a significantly higher proportion of persons employed in the mining industry compared to Queensland.

The Charters Towers UCL has a significantly higher proportion of persons employed in the education and training sector than other areas of interest, reflecting the number of education establishments in the Township. However, Charters Towers UCL has a significantly lower proportion of persons employed in the professional, scientific and technical services and financial and insurance services sectors, which correlates with the low proportion of persons in Charters Towers UCL who hold post-school qualifications (Graph 6), as these sectors often require tertiary education.

Table 21
Employment by Industry, 2011

Industry of Employment	Proportion of Persons Employed (%)							
	Clermont UCL	Charters Towers UCL	Mackay Region	Townsville Region	Cairns Region	Wide Bay Region	SEQ Region	QLD
Agriculture, Forestry and Fishing	1.9	1.5	4.9	3.3	4.8	8.3	0.8	2.7
Mining	30.5	12.9	14.4	3.4	1.8	2.3	1.2	2.6
Manufacturing	4.3	4.2	7.9	8.2	5.6	8.9	8.7	8.4
Electricity, Gas, Water and Waste Services	3.2	0.6	0.9	1.5	1.1	1.6	1.1	1.2
Construction	6.5	6.7	9.7	9.2	8.9	8.2	9.1	9.0
Wholesale Trade	1.7	1.6	3.7	2.8	2.9	2.7	3.9	3.6
Retail Trade	9.2	12.6	9.6	10.6	11.6	12.3	10.7	10.7
Accommodation and Food Services	5.8	7.5	7.6	6.6	9.5	6.9	6.9	7.0
Transport, Postal and Warehousing	4.3	4.8	6.4	4.8	6.1	4.1	5.2	5.3
Information Media and Telecommunications	0.0	0.6	0.6	1.2	0.9	0.8	1.5	1.2
Financial and Insurance Services	0.3	0.9	1.2	1.5	1.5	1.4	3.2	2.7
Rental, Hiring and Real Estate Services	1.4	1.2	1.8	1.5	1.8	1.4	2.0	1.8
Professional, Scientific and Technical Services	1.5	2.2	4.0	4.3	4.5	3.2	7.7	6.5
Administrative and Support Services	3.6	2.3	2.8	2.8	3.5	2.8	3.4	3.2
Public Administration and Safety	4.6	7.6	3.8	10.8	7.6	5.5	6.6	6.7
Education and Training	6.9	13.9	5.5	8.2	7.8	8.4	7.9	7.9
Health Care and Social Assistance	6.9	12.3	7.6	12.1	11.9	14.0	12.3	11.9
Arts and Recreation Services	0.3	0.4	0.5	1.1	1.6	0.7	1.6	1.4
Other Services	4.4	3.6	4.7	3.8	4.0	3.9	3.8	3.9
Inadequately described/Not stated	2.7	2.4	2.5	2.2	2.6	2.5	2.3	2.4
Total	100	100	100	100	100	100	100	100

Source: ABS 2013

Employment Occupation

Table 22 shows the proportion of employed persons in 2011 in the Local and Regional Area by occupation. Specifically, it shows a very high percentage of machinery operators and drivers in the Isaac LGA compared to QLD. This is expected due to the high proportion of persons in these areas employed in the mining industry.

Table 22
Occupation, 2011

Occupation	Percentage (%) of Employed Persons						
	Clermont UCL	Charters Towers UCL	Isaac LGA	Charters Towers LGA	Mackay Region	Townsville Region	QLD
Managers	8	9	12	15	11	11	12
Professionals	12	15	11	12	12	16	19
Technicians & trades workers	22	16	21	16	20	17	15
Community & personal service workers	5	10	5	9	7	12	10
Clerical & administrative workers	11	10	10	9	12	14	15
Sales workers	7	10	5	8	8	9	10
Machinery operators & drivers	22	15	24	15	15	9	7
Labourers	11	13	11	14	12	11	11
Inadequately described/Not stated	2	2	2	2	2	2	2
Total persons (No.)	1,110	3,288	12,067	5,140	84,877	105,991	2,039,276

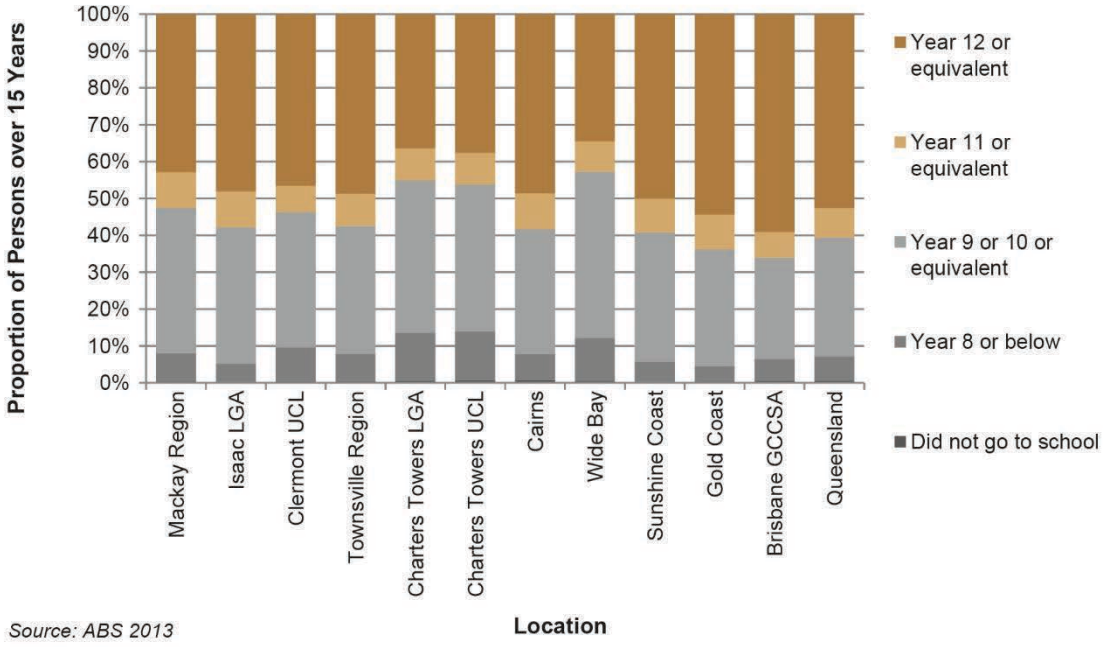
Source: ABS 2013

Educational Attainment

Education is a strong determinant of income and social status. Two indicators of a community's education level are the proportions of people with tertiary qualifications and the average school leaving age. Data relating to post-school qualifications is provided in this section, while information relating to tertiary, secondary and primary education facilities is given in Section 2.3.4.

Graph 6 presents the highest year of school attained by persons over the age of 15 years, across the project Areas of Influence.

Graph 6
Highest Year of Schooling, 2011

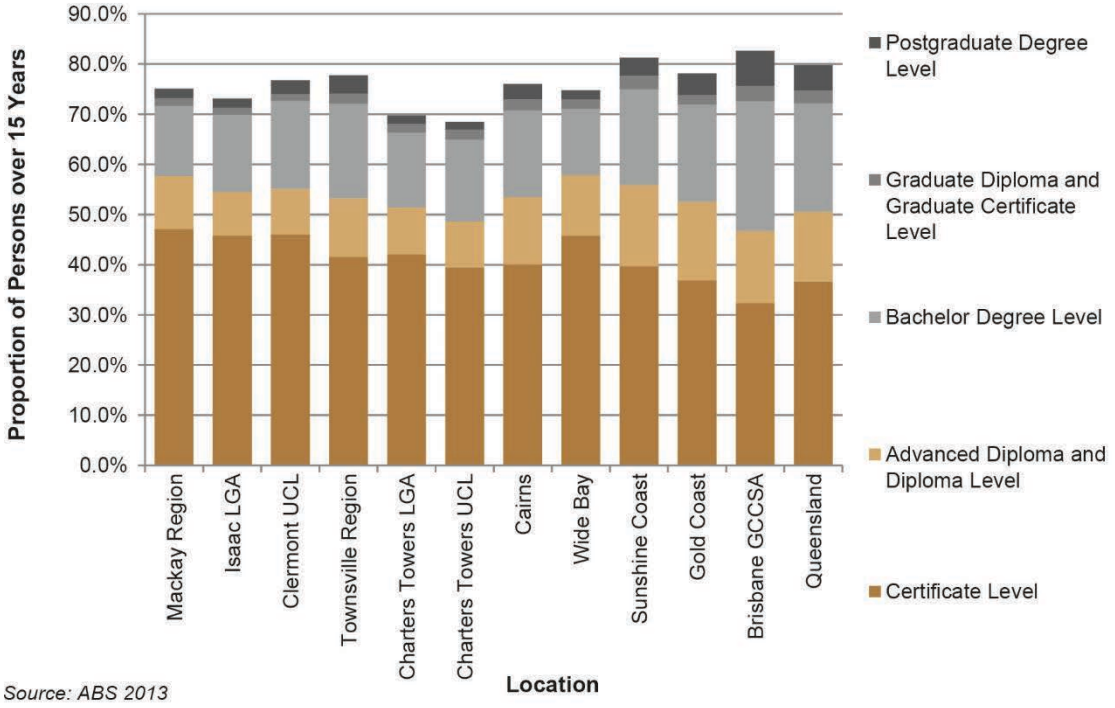


Source: ABS 2013

The Wide Bay and Mackay Regions and Charters Towers and Clermont UCLs had lower levels of educational attainment than Queensland (Graph 6). The Wide Bay Region and Charters Towers LGA and UCL had high proportion of students completing Year 10 as their final year of schooling. In Charters Towers, this may be due to students leaving school to return to rural properties, as well as the emphasis on trades and training in the LGA. In the Wide Bay Region, the high proportion of students finishing school at the end of Year 10 may be due an emphasis on trades and apprenticeships in the region. This is supported by a high proportion of persons with a certificate level qualification in these areas compared to Queensland (Graph 6).

Graph 7 shows the proportion of persons over 15 years of age in the project Areas of Influence who hold a post-school qualification, and the level of that qualification.

Graph 7
Post-School Qualifications, 2011



Source: ABS 2013

The Wide Bay and Mackay Regions, Isaac LGA and Clermont UCL have high proportions of persons with certificate-level qualifications. In the Mackay Region this is likely due to the prevalence of low-skilled mining jobs and a corresponding demand for certificate-qualified workers. The proportion of persons in the Charters Towers LGA and UCL with any post-school qualification is lower than in all other areas of interest. This indicates that despite being a centre for primary and secondary education, Charters Towers does not have a high proportion of residents who have progressed to tertiary education.

2.5 ECONOMIC VITALITY

2.5.1 Gross Regional Product

Table 23 presents the gross regional product (GRP) for the project Areas of Influence from 2000/1 to 2010/11. The Mackay, Sunshine and Gold Coast Regions experienced significant growth between 2001 and 2011, with higher average annual growth during this period than Queensland. The Townsville, Cairns and Wide Bay Regions grew at a slower rate than that of Queensland.

Table 23
Gross Regional Product 2001-2011

Geographic Location	GRP ($M 2010/11)			Average Annual Growth (%)		
	2000/01	2006/07	2010/11	2000/01 to 2006/07	2006/07 to 2010/11	2000/01 to 2010/11
Isaac LGA	N/A	N/A	9,386	N/A	N/A	N/A
Mackay Region	14,486	21,026	22,807	6.4	2.1	4.6
Townsville Region	8,959	11,527	11,923	4.3	0.8	2.9
Charters Towers LGA	N/A	N/A	705	N/A	N/A	N/A
Cairns Region	9,742	12,310	12,286	4.0	0.0	2.3
Wide Bay Region	7,581	10,057	10,209	4.8	0.4	3.0
Brisbane GCCSA	81,554	119,744	129,681	6.6	2.0	4.7
Gold Coast SA4	15,768	24,767	25,312	7.8	0.5	4.8
Sunshine Coast SA4	7,690	11,879	12,600	7.5	1.5	5.1
Queensland	180,444	252,650	269,868	5.8	1.7	4.1

Source: QTT 2013

In all project Areas of Influence, average annual growth was higher in the period 2000-2007 than in 2007-2011, likely due to slower national and international economic conditions as a result of the Global Financial Crisis.

2.5.2 Income

Table 24 shows the median weekly income for individuals, families and households. Median household incomes in the Wide Bay Region and Charters Towers LGA and UCL are significantly lower than all other areas of interest. Clermont UCL, Isaac LGA and the Mackay Region have higher median incomes than any other areas of interest, across all types of income. This is likely the result of high mining sector salaries and localised wage inflation.

Table 24
Income Statistics 2011

Geographic Location	Median Income ($/week)		
	Personal	Family	Household
Mackay Region	709	1,825	1,572
Isaac LGA	1,052	2,671	2,579
Clermont UCL	772	2,259	1,755
Townsville Region	633	1,533	1,295
Charters Towers LGA	487	1,221	979
Charters Towers UCL	487	1,239	982

Geographic Location	Median Income ($/week)		
	Personal	Family	Household
Cairns Region	567	1,294	1,057
Wide Bay Region	407	944	801
Brisbane GCCSA	633	1,615	1,388
Gold Coast SA4	570	1,377	1,173
Sunshine Coast SA4	519	1,219	1,010
Queensland	587	1,453	1,235

Source: ABS 2013

2.5.3 Construction Services Market

Table 25 describes the construction services market in the Townsville Region, Mackay LGA and Isaac LGA. Data is provided from REMPLAN (2012a) for all relevant regions for which there is data. There is no data available for the Mackay Region as a whole, or Charters Towers LGA, hence the Mackay LGA and Isaac LGA have been used.

Table 25
Summary of Construction Services Market in the Regional Area

Region	Employment		Output		Wages	Imports	Exports	Value Added
	No.	%	%	Regional Total	%	%	%	%
Townsville Region	6,500	7.5	11.0	$26.5 B	7.5	8.6	5.3	7.7
Isaac LGA	1,796	9.1	5.8	$1.0 B	7.6	7.8	3.3	3.9
Mackay LGA	4,129	9.2	12.6	$1.9 B	9.7	8.8	8.2	9.4
Queensland	179,919	9.1	12.2	$76.5 B	8.6	7.3	7.9	8.5

The construction services industry in the Townsville Region:

- Employs 7.5% of the labour force compared to 9.1% in Isaac LGA, 9.2% in Mackay LGA and 9.1% on Queensland;
- Produces 11% of the gross revenue generated by business/organisations in the Region compared to 5.8% in Isaac LGA, 12.6% in Mackay LGA and 12.2% in Queensland;
- Generates 5.3% of the Region's total exports compared to 3.3% in the Isaac LGA, 8.2% in the Mackay LGA and 7.9% in Queensland; and
- Contributes 7.7% of the Region's total value added compared to 3.9% in the Isaac LGA, 9.4% in Mackay LGA and 8.5% in Queensland.

2.5.4 Education and Training Market

This section provides a discussion of the education and training markets in the Regional Area.

Queensland Training Market Review

The Queensland Department of Education, Training and Employment produces a quarterly review of the Queensland labour and training market. The latest review (March 2015, based on the September quarter 2014) makes the following notable points relevant to the State training market:

- A reduction in the number of Queensland Apprentices and Trainees In-Training compared with the same quarter in 2013 - An estimated 75,600 persons compared to 89,800 in 2013 (-15.8%).
- There were around 6,500 Apprentice and Trainee completions over the quarter – a decrease over the year of 800 (or 11.1%). September completions were around 8.6% of the total number In-Training.

Education Pathways - Local and Regional Area

DETE produces School Local Labour Market Profiles for 29 Education regions across Queensland. These profiles focus on occupations and courses within each region where the greatest numbers of people were reported in the 2011 Census. The data covers the top 30 occupations and associated training pathways for employed persons; and top 30 apprenticeship, traineeship and VET course areas. Charters Towers LGA is located within the Townsville Region, and Clermont is located in the Moranbah Region.

Table 26 presents the top 10 occupations in the Moranbah region ranked by number employed with training pathways based on the highest educational attainment. Drillers, miners and shot firers accounted for the largest number of people employed in the region with around 64.8% having school level and 32.8% having VET as their highest qualification.

Table 26
Educational Pathways of Top 10 Occupations in Moranbah Region

Education Pathways	Uni	VET	School	Uni	VET	School	Total
	—Number—			—%—			Number
Drillers, Miners & Shot Firers	41	548	1,082	2.5	32.8	64.8	1,671
Metal Fitters & Machinists	13	617	118	1.7	82.5	15.8	748
Livestock Farmers	34	76	318	7.9	17.8	74.3	428
Truck Drivers	11	134	280	2.6	31.5	65.9	425
Electricians	10	265	62	3.0	78.6	18.4	337
General Clerks	30	109	189	9.1	33.2	57.6	328

Education Pathways	Uni	VET	School	Uni	VET	School	Total
	—Number—			—%—			Number
Other Building & Engineering Technicians	27	209	82	8.5	65.7	25.8	318
Commercial Cleaners	13	48	223	4.6	16.9	78.5	284
Sales Assistants (General)	10	41	215	3.8	15.4	80.8	266
Livestock Farm Workers	0	69	139	0	33.2	66.8	208

Source - DETE 2014a

Table 27 shows the top 10 occupations in the Townsville region ranked by number employed with training pathways based on highest educational attainment. Sales assistants accounted for the largest number of people employed in the region with around 80.3% having school level and 16.1% having VET as their highest qualification.

Table 27
Educational Pathways of Top 10 Occupations in Townsville Region

Education Pathways	Uni	VET	School	Uni	VET	School	Total
	—Number—			—%—			Number
Sales Assistants (General)	179	800	3,990	3.6	16.1	80.3	4,969
General Clerks	212	816	1,679	7.8	30.1	62.0	2,707
Registered Nurses	1,685	548	108	72.0	23.4	4.6	2,341
Truck Drivers	13	530	1,507	0.6	25.9	73.5	2,050
Retail Managers	162	607	1,217	8.2	30.6	61.3	1,986
Metal Fitters & Machinists	22	1,610	321	1.1	82.4	16.4	1,953
Defence Force Members - Other Ranks	35	544	1,078	2.1	32.8	65.1	1,657
Electricians	21	1,266	295	1.3	80	18.6	1,582
Primary School Teachers	1,366	161	24	88.1	10.4	1.5	1,551
Commercial Cleaners	45	263	1,219	2.9	17.2	79.8	1,527

Source - DETE 2014b

Vocational Education and Training in the Local and Regional Area

Table 28 and Table 29 show the top 5 occupations ranked by number employed in the Moranbah region and Townville Region respectively, based on the 2011 Census which are VET related, i.e. occupations where VET accounts for 50 per cent or more of the highest qualification attained.

Both tables focus on occupations where significant numbers are employed in the region. The last column shows state level estimates of the average annual replacement demand rates for each occupation between 2013 and 2017. The net replacement rate estimates take

account of various sources of inflows and outflows that are likely to occur within a given occupational category (e.g. retirements, exits from the labour force, migration, mobility).

Table 28
Top 5 VET Related Occupations in Moranbah and State Replacement Demand

Education Pathways	Uni	VET	School	Total	Replacement Demand
	—%—			Number	%
Metal Fitters & Machinists	1.7	82.5	15.8	748	1.3
Electricians	3.0	78.6	18.4	337	0.7
Other Building & Engineering Technicians	8.5	65.7	25.8	318	1.6
Structural Steel & Welding Trades Workers	0	79.0	21.0	167	1.0
Carpenters & Joiners	0	83.8	16.3	80	1.4

Source ; DETE 2015b

Table 29
Top 5 VET Related Occupations in Townsville and State Replacement Demand

Education Pathways	Uni	VET	School	Total	Replacement Demand
	—%—			Number	%
Metal Fitters & Machinists	1.1	82.4	16.4	1,953	1.3
Electricians	1.3	80	18.6	1,582	0.7
Structural Steel & Welding Trades Workers	0.4	79.4	20.2	1,141	1.0
Carpenters & Joiners	0.3	81.2	18.5	1,045	1.4
Child Carers	6.2	64.4	29.4	1,302	3.1

Source: DETE 2015a

According to DETE (2015a and b) the top five apprenticeship commencements for all students for 2013-2014 in the Townsville region were in:

- Certificate III in Civil Construction Plan operations - 147 people, an increase of 139 since 2011-2012;
- Certificate III in Electrotechnology Electrician - 83 people, a decrease of 23 since 2011-2012;
- Certificate III in Hairdressing - 76 people, increasing from 47 in 2011-2012;
- Certificate III in Engineering - Mechanical Trade - 68 people, down from 118 in 2011-2012; and'
- Certificate III in Carpentry - 61 people down from 84 in 2013-2013.

The top five course enrolments for all students for 2013-2014 in the Townsville region were in:

- Course in Core Skills for Employment and Training - Communication (Intermediate) - 1,134 people down from 1,695 in 2012-2013;
- Course in Core Skills for Employment and Training - Communication (Basic) - 744 people down from 885 in 2012-2013;
- Certificate III in Warehousing Operations - 576 people up from 107 in 2012-2013;
- Certificate III in Aged Care - 557 people up from 112 in 2012-2013; and
- Certificate III in Children's Services - 471 people up from 269 in 2012-2013 (DETE 2015a).

The top five course enrolments for all students for 2013-14 in the Moranbah region were in:

- Certificate III in Electrotechnology Electrician - 69 people, an increase from 48 in 2012-2013;
- Certificate III in Engineering - Mechanical Trade - 63 people, down from 97 in 2011-2012
- Certificate II in Rail Infrastructure - 63 people up from 7 in 2012-2013;
- Certificate III in Automotive Mechanical Technology - 62 people, down from 69 in 2011-2012; and
- Certificate IV in Engineering - 44 people, increasing from 32 in 2011-2012 (DETE, 2015a);

2.5.5 Economic Development and Future Planning

A number of plans and strategies from government and non-government organisations throughout the project Areas of Influence identify actions and economic outcomes relevant to the project. These plans and their relevant actions and outcomes are summarised in Table 30.

Table 30
Economic Plans and Strategies

Geographic Location	Plan	Identified Actions and Economic Outcomes
Mackay Region	Regional Roadmap for the Mackay-Isaac-Whitsunday Region 2013-2016 (RDA MIW 2013)	• Increasing the region's infrastructure funding; • Advocating for telecommunications upgrades; • Protecting and valuing natural assets; and • Preparing of the Central Queensland Workforce Strategy.

Geographic Location	Plan	Identified Actions and Economic Outcomes
Mackay Region	Mackay, Isaac and Whitsunday Regional Plan (DSDIP 2012)	• Strengthening resource communities; • Future planning decisions are informed by identification of employment needs; • Build a diverse and resilient economy; and • Infrastructure is planned, coordinated, and delivered in a timely manner to support regional growth.
Isaac LGA	Isaac Regional Council Isaac Region 2020 Vision (IRC 2009)	• Economic diversification; • Provision of a range of affordable and alternative housing options to cater to the current and, future community needs; and • Maintenance of the atmosphere, community harmony and quality of life associated with our small mining, rural and coastal towns.
Charters Towers LGA	Charters Towers Region Economic Development Plan 2012-2017 (CTRC 2013)	• Reinforce the region's proven sectors of mining, agriculture, education and tourism; • Capture major infrastructure and industry investments for the region; and • Establish a Charters Towers Mining and Agricultural Supply Chain.
Townsville Region	RDA Townsville and North West Queensland Regional Roadmap 2012 (RDA TNW 2012)	• Efficient transport corridors to support mining and industry; • Support the strengthening and development of existing primary and manufacturing industries e.g. mining, minerals processing, beef production and agriculture; and • Councils to lead advocacy for new infrastructure; telecommunication & mining companies to potentially partner with Councils
Cairns, Townsville, and Mackay Regions	Northern Queensland Strategy (RDA 2013)	• Dealing with the significant benefits and impacts from the resources boom; • Addressing major project coordination across Northern Queensland including regulatory reform; • An aviation strategy for expansion of opportunities including servicing of mines and better access for communities; and • Well planned workforces with opportunities for all; including cross fertilisation of skills across industries such as agriculture, mining, construction and tourism.
Townsville Region	North Queensland Resources Supply Chain Project (DSDIP 2014a)	• Enhancing long-term strategic planning and identification of infrastructure upgrade requirements on the Townsville to Mt Isa transport corridor; • Day-to-day operations and coordination between corridor operators and participants; and • Clarity and access for new, smaller entrants seeking export solutions on the corridor.

Geographic Location	Plan	Identified Actions and Economic Outcomes
Townsville LGA	Townsville City Council Economic Development Strategic Plan 2011-2016 (TCC 2013)	• Building a dynamic, diverse economy; and • Developing infrastructure that supports and stimulates economic development.
Cairns LGA	Cairns Regional Council Economic Development & Innovation Strategy and Delivery Program 2012-2015 (CRC 2012)	• Supporting a skilled and flexible workforce; • Attracting investment to help broaden the economic base, provide new job opportunities and increase the region's international competitiveness; and • Acting as an effective partner in the early stages of project development.
Cairns Region	Tropical North Queensland Regional Economic Plan 2011-2031 (Advance Cairns 2011)	• Proactively engage with the resources sector to promote the region as a preferred supply hub thereby creating demand for local products and services; • Develop the skills and capacity of the region's workforce now and into the future; and • Coordinate and lead stakeholders to pursue initiatives that provide employment opportunities through skill development for the regions indigenous population.
Wide Bay Region	RDA WBB Regional Roadmap V2.0 (RDA WBB 2013)	• Leverage off the population and economic growth of South East Queensland and the mining sectors of central and South Western Queensland; • Leverage from the existing resource sector workforce living in the region to encourage the establishment of direct FIFO services; • Develop partnerships with resource sector companies to encourage training and development solutions to support the WBB job seeker network; and • Attract workers and their families to relocate from highly densely populated areas e.g. Mackay and Gladstone, to the WBB.
Fraser Coast LGA	Fraser Coast Regional Council Economic Development Strategy 2009-2013 (FCRC 2009)	• Maximise and facilitate economic growth and investment activities through the coordinated planning, funding and provision of key 'hard' and 'soft' infrastructure; and • To broaden the economic base and provide increased employment opportunities by further developing existing businesses and encouraging new industries or businesses to the region.
Bundaberg LGA	Bundaberg Regional Council Economic Development Strategy 2009-2014 (BRC 2009)	• Ensuring the provision of infrastructure meets the needs of existing and future aviation and aerospace business and industry; and • Development of a Bundaberg Regional Trade Training Centre.
Brisbane City	Brisbane City Council Economic Development Plan 2012-2031 (BCC 2012)	• Target resource and related service industry companies to move to Brisbane; • Coordinate and facilitate measures to support fly-in fly-out workforce needs for the resource industry; and • Launch a global workforce talent attraction program.

Geographic Location	Plan	Identified Actions and Economic Outcomes
Gold Coast SA4	RDA Gold Coast 2012/13 Regional Roadmap (RDA GC 2012)	• Promote the development of targeted industry training for mining and health care sectors; • FIFO resources sector potential; and • Encouraging increased education and training opportunities especially in the key sectors of health, information technology and environmental management.
Gold Coast LGA	Gold Coast City Council Draft Economic Development Strategy 2013–2023 (GCCC 2013)	• Maximise economic opportunities associated with the future expansion of the Gold Coast Airport; and • Leverage supply chain opportunities for local businesses from the mining and resources sector including attracting mining services companies to the city.
Sunshine Coast LGA	Sunshine Coast Regional Council Economic Development Strategy 2010-2014 Action Plan (SCRC 2010)	• Support education, training and apprenticeship initiatives that help build skills within the region and retain young people.
Galilee Basin	Galilee Basin Development Strategy (DSDIP 2014b)	• Lowering start-up costs by offering lowered royalties during early stages of project life; • Streamlining land acquisition, planning, approvals and red tape reduction; and • Supporting infrastructure development and corridors for the Galilee Basin for water, power and rail.
Galilee Basin	Galilee Basin Coal Infrastructure Framework (DSDIP 2014c)	• Ensure future infrastructure in the Galilee Basin supports sustainable development while maximising benefits to Queensland through royalty return, employment and related regional economic development.
Queensland	RegionsQ Framework (DSDIP 2014d)	• Capitalising on economic drivers and unique assets to grow and strengthen regional economies; • Unlocking regional economic potential by enabling major project investment and exports; and • Building productive and resilient supply chains.

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APPENDIX C

Risk Assessment Summary Tables

Table C1
Summary of Socio-Economic Impact and Opportunities Assessment Process

Key:	High Negative	Moderate Negative	Low	Moderate Positive	High Positive	- Not assessed further

Impact	Impacted Stakeholder	Timing	Positive/ Negative	Direct Indirect	Primarily Cumulative	Unmitigated Ranking	Mitigated Ranking
Economic							
Economic growth	Queensland residents	Construction, Operations	Positive	Direct	No	High	High
Population and Demography							
NRW population growth in the Surrounding Area	Residents within the Surrounding Area	Construction, Operations	Negative	Direct	Yes	High	Moderate
Gender imbalance in the Surrounding Area	Residents within the Surrounding Area	Construction, Operations	Negative	Direct	Yes	High	Moderate
Resident population growth in regional centres	Regional Area and home base locations	Operations	Positive	Direct	No	Moderate	Moderate
Resident population growth in the Local Area	Communities within the Local Area	Operations	Positive	Direct	No	Moderate	Moderate
Employment and Labour Market Dynamics							
Employment growth	Queensland residents	Construction, Operations	Positive	Direct	No	High	High
Indigenous employment growth	Indigenous population of regional area and labour source locations	Construction, Operations	Positive	Direct	No	Moderate	High
Labour supply	Business owners and operators located within labour source locations	Construction, Operations	Negative	Direct	No	High	Low
Labour draw	Business owners and operators located within labour source locations	Construction, Operations	Negative	Direct	No	Moderate	Low

Impact	Impacted Stakeholder	Timing	Positive/ Negative	Direct Indirect	Primarily Cumulative	Unmitigated Ranking	Mitigated Ranking
Skills enhancement	Residents of Charters Towers LGA and home base locations	Construction and Operations	Positive	Direct	No	Moderate	High
Employee Health and Wellbeing							
Health implications of employment conditions	Employees and families Health care providers and users in local area and home base locations	Construction, Operations	Negative	Direct	No	Moderate	Low
Regional Development							
Increased supply chain opportunities	Business owners and operators in the local and regional area, and employee home base locations	Construction, Operations	Positive	Direct	No	Moderate	High
Increased economic activity	Queensland residents	Construction, Operations	Positive	Direct	No	High	High
Increased real wage	Project workforce	Construction, Operations	Positive	Direct	No	Moderate	Moderate
Improved infrastructure and services for surrounding area	Residents of the surrounding area Road users Emergency service providers	Construction, Operations	Positive	Direct	No	Moderate	High
Increased economic specialisation	Communities of the Isaac LGA	Construction, Operations	Negative	Direct	Yes	-	-
Economic diversification	Business owners and operators in the Charters Towers LGA Charters Towers Regional Council	Construction, Operations	Positive	Direct	Yes	-	-
Increased viability of Charters Towers Airport	Charters Towers Regional Council	Operations	Positive	Indirect	-	-	-
Increased demand for air services	Residents and businesses in employee home base locations	Construction, Operations	Negative	Direct	No	Low	-

Impact	Impacted Stakeholder	Timing	Positive/ Negative	Direct Indirect	Primarily Cumulative	Unmitigated Ranking	Mitigated Ranking
Development opportunities through Royalties for the Region	Communities in the local and regional area	Operations	Positive	Indirect	-	-	-
Loss of agricultural land	Property owners in the surrounding area Queensland agricultural industry	Construction	Negative	Direct	No	Low	-
Construction phase traffic impacts on existing freight movements	Business owners and operators in the local area	Construction	Negative	Indirect	No	-	-
Community Liveability							
Increased traffic movements and reduced road safety	Road Users	Construction, Operations	Negative	Direct	No	High	Low
Ongoing demand for emergency services	Communities of the Local Area, Emergency service providers	Construction, Operations	Negative	Direct	No	High	Low
Change in rural character	Residents within the Surrounding Area	Construction, Operations	Negative	Direct	Yes	High	Moderate
Changes in accessibility	Residents within the Surrounding Area	Construction, Operations	Positive	Direct	No	Moderate	Moderate
Loss of connection to place	Property owners in the surrounding area and Indigenous people	Construction	Negative	Direct	No	Moderate	Low
Impacts on Property Management	Property owners in the surrounding area	Construction	Negative	Direct	No	Low	-
Changes in community liveability in home base locations	Residents in home base locations	Construction, Operations	Negative	Direct	-	Low	

Impact	Impacted Stakeholder	Timing	Positive/ Negative	Direct Indirect	Primarily Cumulative	Unmitigated Ranking	Mitigated Ranking
Impacts on Indigenous Peoples and Culture	Native title claimants, Indigenous users of the project site	Construction, Operations	Negative	Direct	-	Low	
Community Infrastructure and Services							
Increased demand on emergency services	Emergency service providers Residents of the local area	Construction, Operations	Negative	Direct	No	High	Low
Improved access to health service providers and emergency service facilities	Residents of the surrounding area	Operations	Positive	Direct	No	Low	-
Increased demand for community services and facilities in home base locations	Communities of home base locations	Construction, Operations	Negative	Direct	No	Low	-
Improved access for emergency services to remote locations	Emergency service providers	Construction, Operations	Positive	Indirect	-	-	-
Housing and Accommodation							
Increased demand for permanent accommodation	Home Base Locations	Construction, Operations	Negative	Direct	No	Low	Low
Increased demand for short-term accommodation	Short term accommodation providers in Charters Towers	Construction	Positive	Direct	No	Moderate	Low

APPENDIX D

Labour Market Study

CONTENTS

Tables

Diagrams

Figures

1 INTRODUCTION

1.1 OVERVIEW

This briefing report provides a high-level summary of the key findings of the Environmental Impact Statement (EIS) Labour Assessment conducted by Hansen Bailey for Macmines Austasia Pty Ltd (MacMines). The Labour Assessment was undertaken to inform the workforce assumptions for the EIS for Project China Stone (the project), and consisted of the following two key components:

- Source labour market assessment; and
- Assessment of potential workforce home base locations.

The source labour market assessment informed the development of a workforce recruitment and management approach suitable for inclusion in the EIS. The home base location assessment assisted in identifying the potential home base locations of the workforce, and the social, cultural and economic area of influence of the project.

1.2 PROJECT ASSUMPTIONS

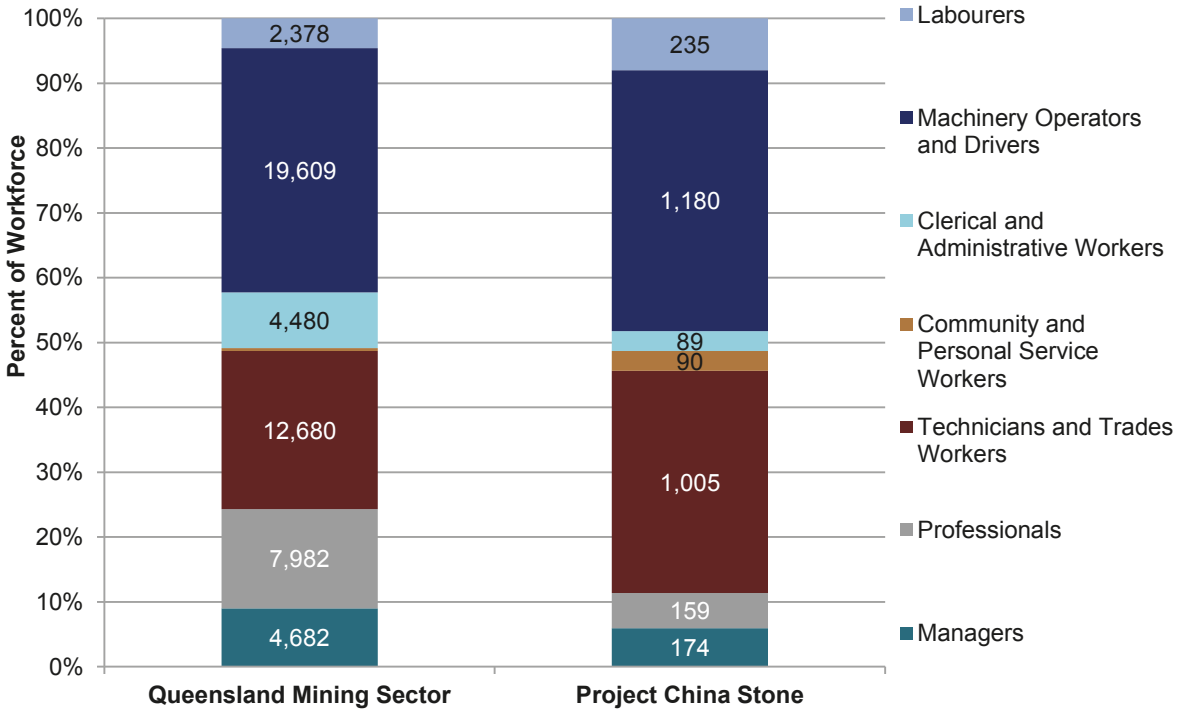
The following assumptions regarding the project workforce characteristics informed the analysis of labour market data. These assumptions were based on EIS workforce data provided by consultants Minecraft. Workforce data was then compared with the characteristics of the current workforce of the Queensland mining sector, to confirm the appropriateness of the data.

1.2.1 Workforce Size and Characteristics

- The project will have a full production workforce of 3,050 persons;
- The majority of the operations workforce will be employed in one of the following two occupation groups:
  - Machinery Operators and Drivers, representing 40% (1,180) of the workforce; and
  - Technicians and Trades Workers, representing 33% (1,005) of the workforce.
- The project operations workforce will have skill levels similar to the Queensland mining workforce average i.e.:
  - 64% of the workforce will have a Certificate Level or lower qualification;
  - 16% of the workforce will have a Diploma or Advanced Diploma; and
  - 20% of the workforce will have a Bachelor Degree or higher qualification.
- The gender balance of the project operations workforce will be similar to the Queensland mining workforce average i.e. approximately 88% male.

The project workforce estimates and characteristics were compared with the existing Queensland mining sector workforce (Diagram 1-1). The project workforce occupation groups are of a similar proportion to the existing occupation groups in the Queensland mining sector workforce.

Diagram 1-1 Project Occupation Needs compared to Queensland Mining Sector Occupations, 2011



Source: (ABS 2013)
Notes: The workforce numbers shown above for Project China Stone exclude 118 workers associated with leave allowance. These workers have not yet been allocated an occupation.

The project workforce estimates and characteristics were also compared to those proposed in the EISs for other Galilee Basin projects (URS 2010; GHD 2012). The project workforce estimates are similar to those proposed for the Adani Carmichael Project and the GVK Alpha Project.

1.2.2 Workforce Transportation Arrangements

The following assumptions regarding the project workforce transportation arrangements informed the analysis of potential workforce home base locations:

- The project workforce will predominantly be non-resident and long distance commuters i.e. will reside permanently more than 100 km from the project site; and
- Bus transport to the project site will only be offered to operations phase employees residing permanently in the townships of Charters Towers or Clermont if warranted by demand.

2 SOURCE LABOUR MARKET ASSESSMENT

2.1 OVERVIEW

The source labour market assessment included an analysis of current and future trends in the Queensland mining sector, and assessed the capacity of regional labour markets in Queensland to provide labour for the project. The primary output of this assessment is a list of target project workforce recruitment locations for inclusion in the EIS. Due to the complexity of labour market data and the assumption that the majority of the workforce would be recruited from, and reside within, Queensland, the interstate and international labour markets were not examined.

2.2 QUEENSLAND MINING SECTOR

2.2.1 Size and Characteristics

In 2012, there were approximately 55,000 persons employed in the Queensland mining sector (Kinetic Group 2012a). The mining sector is characterised by a tight labour market, with:

- A high level of full time employment (98%);
- Low female participation rates (12%);
- An ageing workforce (average age is 40 years old); and
- High staff turnover rates (especially for long distance commuters).

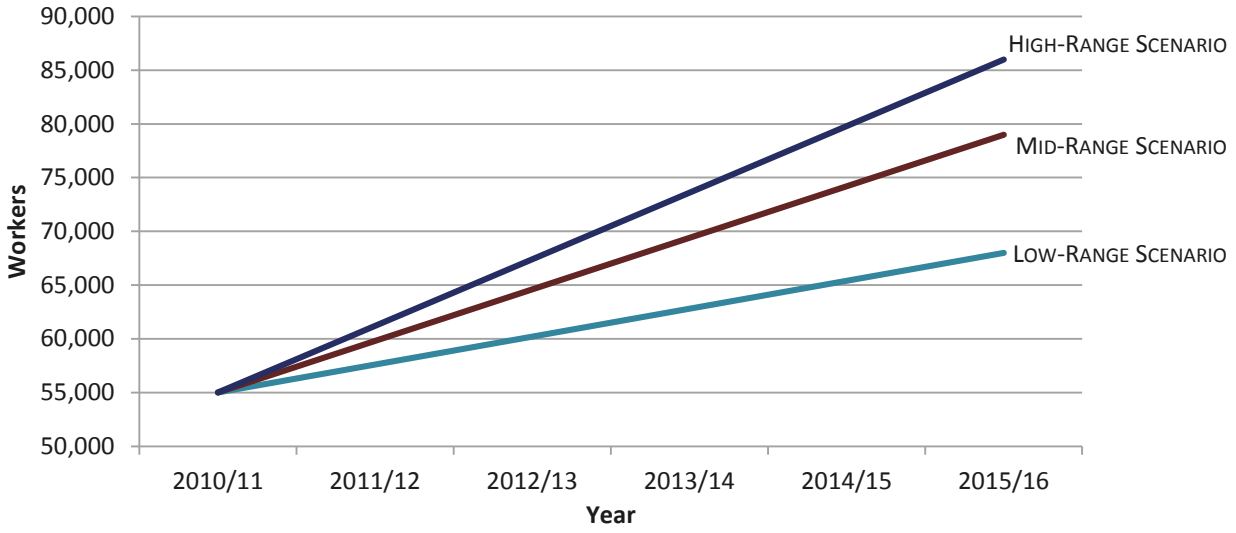
The Queensland mining sector is also characterised by persistent skill shortages in key occupational areas such as engineering and supervisory roles, leading to rising wage costs and increased competition for labour (Kinetic Group 2012b).

2.2.2 Future Growth

Significant growth is anticipated in the Queensland mining sector over the next five to eight years (Kinetic Group 2012b). Analysis of investment in the Queensland mining sector and across Australia together with resource sector labour forecasts suggest an expected increase in resource sector labour demand in Queensland from an estimated 55,000 persons in 2011 to up to 86,000 persons by 2016 (Diagram 2-1) (Deloitte 2011; Miller 2011; Kinetic Group 2012b; Deloitte 2013).

Diagram 2-1 shows the projected workforce growth in the Queensland mining sector, under high-range (all planned resource sector major projects proceed), mid-range (some resource sector major projects proceed) and low-range (few resource sector major projects proceed) industry growth scenarios, as reported by Kinetic (Kinetic Group 2012a).

Diagram 2-1 Projected Workforce Growth in the Queensland Mining Sector, 2011-2016



(Kinetic Group 2012a)

Deloitte (2011) estimate that labour demand in the Queensland resource sector will increase rapidly from now (2012) until 2015, at which point it will stabilise at approximately 40,000 additional persons until 2020, with over 14,000 additional workers anticipated to be required in the Galilee Basin in 2020.

A labour deficit in Queensland of up to 30,000 workers is expected by 2015, with machinery operators and drivers, and technicians and trades workers comprising over 90% of this deficit (Deloitte 2011). While these projections were made prior to the recent downturn in the Queensland mining industry sector, the cyclical nature of mining together with the size of the proposed projects in the Galilee Basin suggests that demand for labour will continue to increase significantly.

This growth in the mining industry is expected to exert considerable pressure on the resource sector labour market and general labour availability in Queensland.

2.2.3 Labour Supply Issues

The characteristics of the Queensland mining sector workforce and the predicted growth in the sector will place increasing restrictions on labour supply for the project. All proponents of mining projects in Queensland are currently experiencing labour supply issues and as a result, increasing importance is being placed on training and skilling of new workers.

In order to secure a suitable workforce for the project and support long term workforce retention, targeted recruitment and forward planning is necessary. MacMines will need to actively work to increase resource sector labour supply.

Mechanisms for increasing labour supply include:

- Training people already working in the industry, who have skills that are in lower demand, to undertake tasks in higher demand areas;
- Developing new pathways to relevant professions;
- Developing initiatives that attract women and Indigenous persons into the mining sector;
- Recruiting people from other occupations and training appropriately; and
- Recruiting people from overseas.

The project development schedule presents an opportunity for MacMines to invest in labour force strategies prior to a peak period of labour demand across the Galilee Basin. Training and skilling strategies therefore form a pivotal part of the project labour sourcing strategy.

2.3 POTENTIAL SOURCE OF THE PROJECT WORKFORCE

Queensland (QLD) is comprised of 14 Statistical Regions (Figure 1). The following sections present the key characteristics of the labour market associated with each of these 14 statistical regions (Figure 1) and highlight the geographical regions of Queensland that have the potential to meet the labour demands of the project.

The regional labour market assessment has focussed on presenting the characteristics associated with:

- New Recruits i.e. people not currently employed in the mining sector; and
- Experienced recruits – people already employed in the mining sector.

New recruits can be sourced from:

- The pool of currently unemployed persons who are looking for full time work; and/or
- People employed in other industry sectors with transferable skill sets such as agriculture or manufacturing.

Experienced recruits can be sourced from the pool of persons currently employed in the mining sector.

2.3.1 New Recruits

The following indicators were examined to predict potential labour sourcing regions for new recruits to the mining sector and the project:

- Number of unemployed persons and the unemployment rate;
- Proportion of unemployed looking for full time work;
- Level of qualifications held by the unemployed; and
- Field of study of the unemployed (by relevant fields).

Regions with a low number of unemployed persons were not considered, as they did not offer a sizeable labour pool from which to source new recruits. These regions include:

- Darling Downs – Maranoa;
- Toowoomba;
- Mackay;
- Fitzroy; and
- Queensland – Outback.

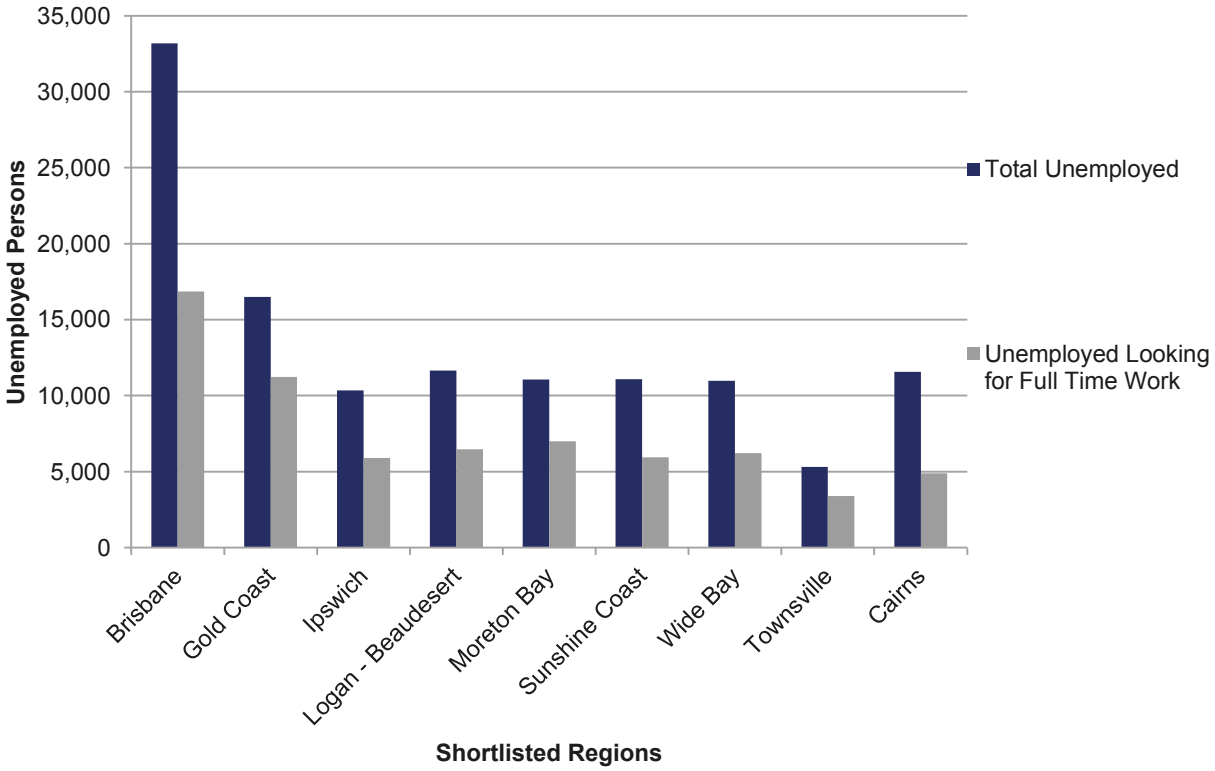
The remaining regions (listed below) are herein referred to as the shortlisted regions:

- Gold Coast;
- Logan-Beaudesert;
- Ipswich
- Brisbane;
- Moreton Bay;
- Sunshine Coast;
- Wide Bay
- Townsville; and
- Cairns

The regions of Gold Coast, Logan Beaudesert, Ipswich, Brisbane, Moreton Bay and Sunshine Coast together form the South East Queensland Region.

Diagram 2-2 illustrates the total number of unemployed persons in each of the shortlisted regions and the number of those unemployed persons who are looking for full time work.

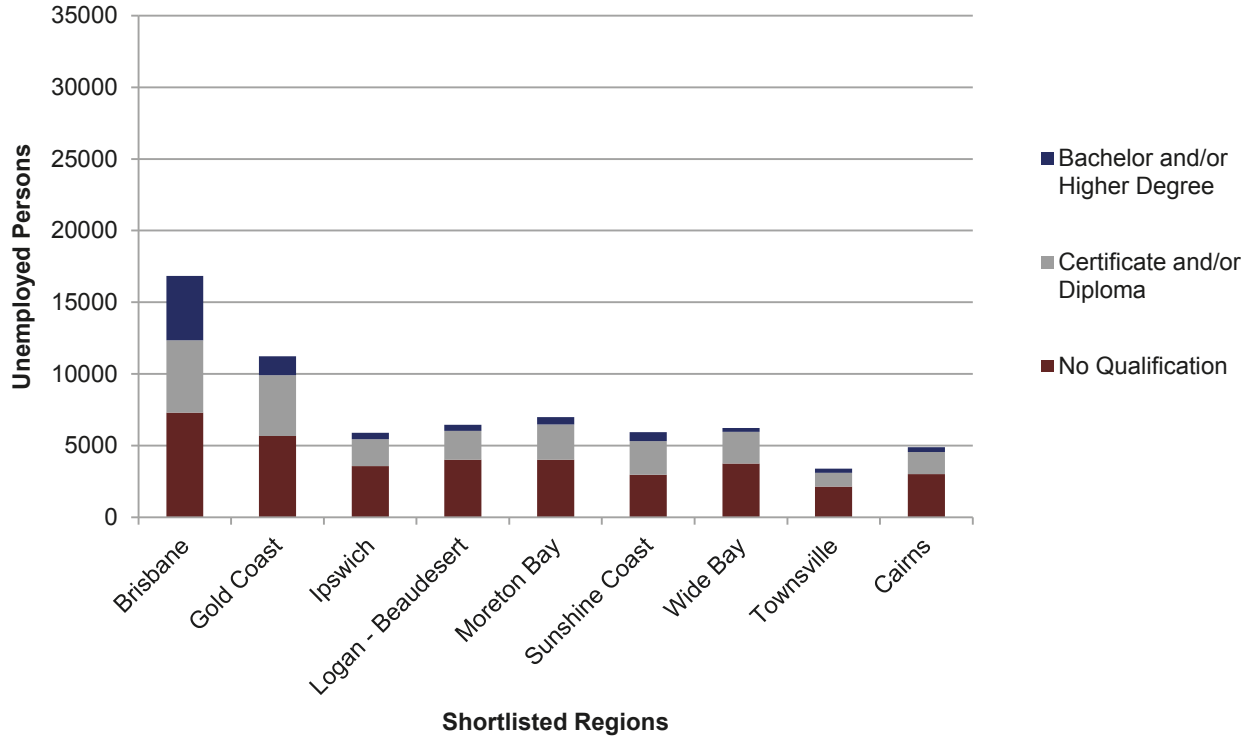
Diagram 2-2 Unemployed Persons (Shortlisted Regions)



(ABS 2011b)

Diagram 2-3 shows the type of qualification held by unemployed persons looking for full time work in each shortlisted region.

Diagram 2-3 Qualifications - Unemployed Persons Looking for Full Time Work (Shortlisted Regions)



(ABS 2011a)

The Brisbane and Gold Coast Regions offer the largest pools of qualified labour looking for full time work (approximately 15,000 people). All other regions offer a limited supply of suitably qualified labour.

2.3.2 Experienced Recruits

The following characteristics of persons already employed in the Queensland mining sector have been considered in the labour analysis:

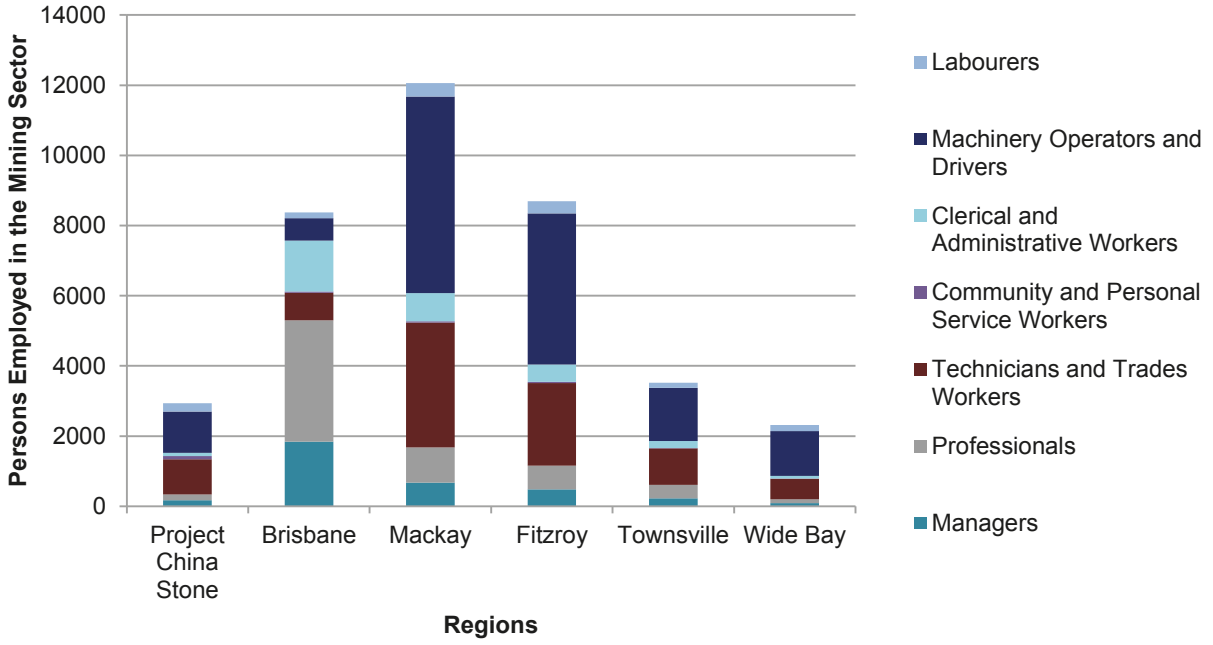
- Level of qualifications held by persons employed in mining; and
- Occupation groupings of persons employed in mining.

The occupation groups of persons employed in mining were compared against the anticipated project workforce occupation demands.

The Brisbane, Mackay, Fitzroy, Townsville and Wide Bay Regions offer sizeable pools of experienced mining sector labour.

Diagram 2-4 presents the occupations of persons currently employed in the mining sector in the Queensland regions compared to the anticipated project workforce occupational requirements.

Diagram 2-4 Project Occupation Needs Compared with Current Regional Mining Sector Occupations



(ABS 2011a)

From Diagram 2-4 it is clear that the existing mining regions of Mackay and Fitzroy support the largest pool of experienced machinery operators and drivers, and technicians and trades workers.

2.3.3 Regional Centres

Charters Towers and Clermont are the closest regional centres to the project site. Table 2-1 presents the key labour market characteristics of these communities.

Table 2-1 Labour Markets of Charters Towers and Clermont

CHARACTERISTIC	CHARTERS TOWERS	CLERMONT
Unemployed looking for full time work	147	19
Indigenous unemployed looking for full time work	47	0
Qualified (Certificate or above) unemployed	41	12
Persons employed in mining	424	338
Dominant occupation of persons employed in mining	Machinery operators and drivers	Machinery operators and drivers

(ABS 2011a, 2013)

Clermont does not present as a viable labour sourcing location for the project for the following reasons:

- The size of the unemployed labour pool (19 persons); and
- A preference by local residents for residential-based employment rather than employment requiring long distance commuting.

Charters Towers has the potential to supply a small amount of unskilled labour, Indigenous labour or experienced labour for the project. However, the number of existing residents with potential to be recruited for the project is likely to be small due to the size of the available labour pool and the project employment conditions i.e. long distance commuting. This does not take into consideration the potential for existing high school students in Charters Towers to be employed on the project in the future through apprenticeship and traineeship opportunities following the completion of their schooling.

2.3.4 Target Labour Source Locations

Based on the conclusions of the source labour market assessment, Table 2-2 outlines the potential labour source locations for each occupation group in the project workforce.

Table 2-2 Target Labour Source Locations, by Occupation

OCCUPATION	NUMBER	TARGET LABOUR SOURCE LOCATIONS
Managers	174	Brisbane, Rest of Queensland, Interstate
Professionals	159	Brisbane, Mackay and Fitzroy, Rest of Queensland, Interstate
Technicians and trades workers	1,005	Mackay, Fitzroy, Wide Bay, South East Queensland, Townsville, Rest of Queensland, Interstate
Community and personal service workers	90	Charters Towers, Gold Coast, Rest of Queensland, Interstate
Clerical and administrative workers	89	Charters Towers, Brisbane, Gold Coast, Rest of Queensland, Interstate
Machinery operators and drivers	1,180	Mackay, Fitzroy, Wide Bay, Cairns, South East Queensland, Rest of Queensland, Interstate
Labourers	235	Charters Towers, Gold Coast, Wide Bay, Rest of Queensland, Interstate

3 HOME BASE LOCATION ASSESSMENT

3.1 OVERVIEW

This section presents a summary of the key findings arising from an assessment of potential workforce home base locations for the project. The primary output from the assessment is a list of preferred home base locations for the project workforce for inclusion in the EIS. The key assumptions underpinning the identification of the preferred home base locations are:

- The project workforce will predominantly Fly-In Fly-Out (FIFO) from a select number of home base locations; and
- The labour recruited for the project will either already reside in one of the selected home base locations, or will relocate to one of the home base locations to take up a position on the project.

3.2 METHOD

The assessment of home base locations was primarily informed by consultation with representatives of state government departments and Regional Development Australia, recent surveys of mining sector workforces in Queensland and the findings of the project labour market assessment.

3.2.1 Consultation

Consultation was conducted with representatives from the following organisations:

- Skills Queensland;
- Regional Development Australia Wide Bay Burnett; and
- Skills DMC (regional).

Consultation was also conducted with the FIFO Coordinators for the Cairns and Wide Bay Regions. Future consultation is also proposed with the Gold Coast FIFO coordinator who was unavailable at the time of conducting the labour study.

3.2.2 Analysis of the Long Distance Commuter Workforce

In 2013, KPMG was commissioned by the Minerals Council of Australia to conduct a comprehensive analysis of the long distance commuter workforces associated with the key mining regions of Australia. The findings of the study are documented in the report *Analysis of the Long Distance Commuter Workforce*. The report provides valuable information in relation to the home base locations of the long distance commuter workforces employed in Queensland and in particular the workforces employed in the Bowen Basin and North-West mining regions.

The Bowen Basin in central Queensland contains the largest coal reserves in Australia (KPMG 2013). The region stretches approximately 550 km north to south. The coal mines in the Bowen Basin are concentrated around the centres of Emerald and Blackwater in the Central Highlands Regional Council Local Government Area (LGA), Dysart, Middlemount, Moranbah, Coppabella and Nebo in the Isaac LGA and Moura in the Banana LGA.

The North-West mining region is located on the northern border of Queensland and the Northern Territory, north-west of the Galilee and Bowen Basins. The largest urban settlement in this region is the city of Mount Isa. The smaller settlements of Cloncurry and Julia Creek are also located in the North-West mining region.

Diagram 3-1 presents the key findings from KPMG (2013) in relation to the home base location of the long distance commuter workforces associated with the Bowen Basin and North West mining areas. The findings of KPMG (2013) demonstrate a clear preference by the long distance commuter workforces in these locations for Queensland coastal centres as home base locations. The South East Queensland Region is a dominant home base location for long distance commuters to northern parts of Queensland.

Diagram 3-1 Home Base Locations of Long Distance Commuter Workforce – Bowen Basin (KPMG 2013)

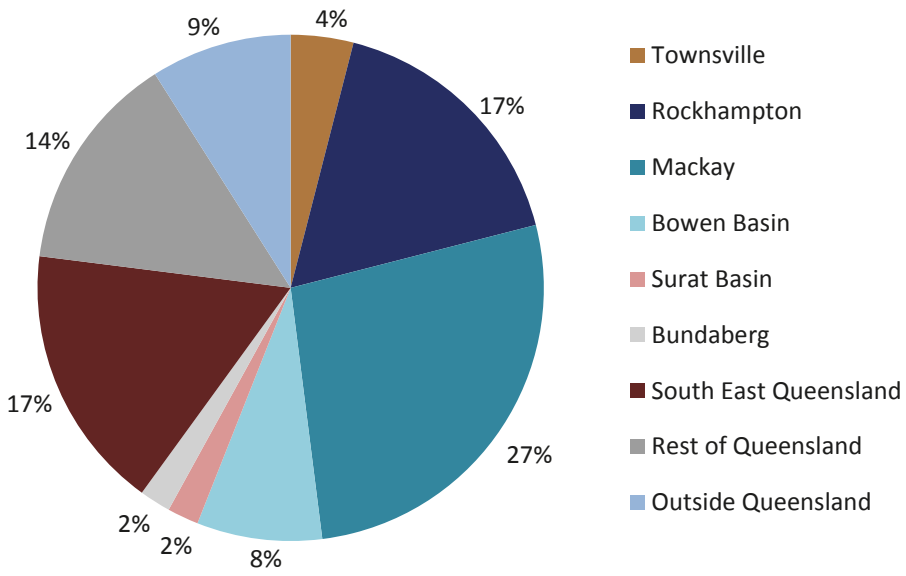
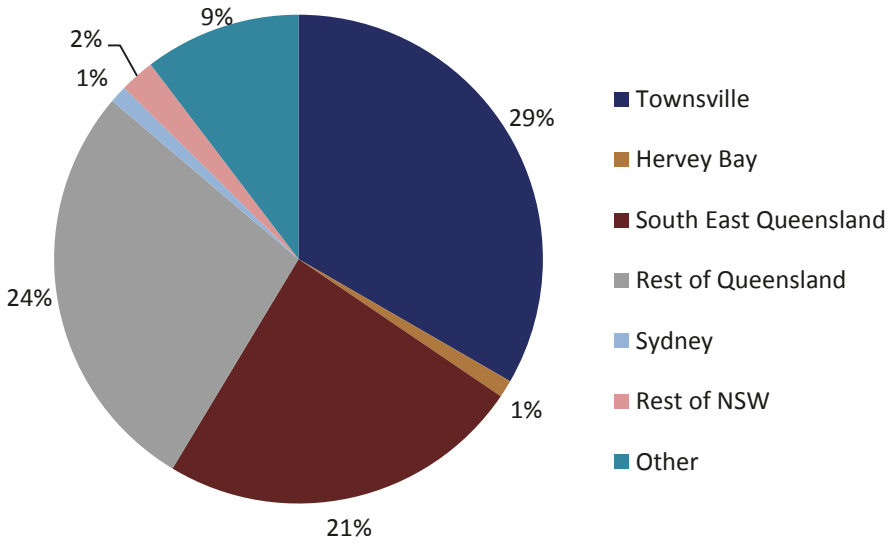


Diagram 3-2 Home Base Locations of Long Distance Commuter Workforce – North-West Mining Area (KPMG 2013)



3.2.3 Shortlist of Potential Home Base Locations

On the basis of the key findings of the KPMG study, all non-coastal regions in Queensland were removed from further consideration as potential home base locations for the project workforce.

The shortlisted Queensland regions to be considered further as potential workforce home base locations were:

- South East Queensland (consisting of the regions of Brisbane, Moreton Bay, Ipswich, Logan – Beaudesert and Gold Coast);
- Wide Bay;
- Mackay;
- Fitzroy;
- Townsville; and
- Cairns.

Further Assessment of Home Base Locations

The following indicators were used to evaluate the suitability of the shortlisted regions, as home base locations for the project workforce:

- Liveability (including cost of living, house prices, accessibility to services, amenity, economic diversity);
- Transport connections and airports;
- Growth and forward planning;
- Population and demography; and
- Labour force and training opportunities.

On the basis of these indicators, the Mackay and Fitzroy Regions were not considered further due to the existing presence of significant cumulative pressures from the mining sector (including significant housing affordability and availability issues and associated strains on social services) and the limited available labour supply.

The remaining Queensland regions of South East Queensland, Wide Bay, Townsville and Cairns were identified as preferred home base locations for the project workforce (Figure 2). The following section briefly describes the key attributes of each region as a potential home base location for the project workforce.

3.3 POTENTIAL HOME BASE LOCATIONS

3.3.1 Queensland Regions

South East Queensland

The South East Queensland Region comprises the Brisbane, Ipswich, Moreton Bay, Sunshine Coast, Logan – Beaudesert and Gold Coast Regions. The South East Queensland Region is the key population centre for Queensland, and supports significant infrastructure, lifestyle and service opportunities. Queensland's capital city, Brisbane, is located in the South East Queensland Region. The South East Queensland Region has two key airports, the Brisbane Airport and the Gold Coast Airport, both of which offer international and domestic services. Brisbane also has a secondary airport, Archerfield Airport, which is a major centre for general aviation activities. A There is also a smaller domestic airport at Maroochydore on the Sunshine Coast owned and operated by the Sunshine Coast Regional Council.

The size of the available skilled labour pool (over 6,000 unemployed persons with relevant qualifications and over 8,000 persons employed in the mining sector), the sizeable population base of the South East Queensland Region (approximately 2.5 million persons) and the number of urban centres in South East Queensland (Brisbane, Ipswich City, Gold Coast, Logan City etc) suggests that the region can readily absorb any impacts associated with any relocated project workforce, and is therefore a suitable workforce home base location for the purposes of the EIS.

Wide Bay

The Wide Bay Region offers attractive lifestyle options, multiple airports with reported sufficient capacity (Bundaberg and Fraser Coast Airports) and a number of key urban centres (Bundaberg, Hervey Bay, Maryborough). Importantly, the Wide Bay Region has made a significant commitment to cooperation with mining proponents to meet project workforce needs. The local government authorities (Bundaberg and Fraser Coast) and the regional development organisation - Regional Development Australia Wide Bay Burnett are currently implementing a range of programs aimed at supporting the regions' development as an attractive home base location for mining sector workforces. In addition, the Wide Bay Region has a substantial labour pool of both new and experienced recruits and there is a strong commitment from the Local Government Authorities and Regional Development Australia to training and up-skilling of both the existing labour pool and any new incoming labour pool. Recent research (URS 2012) indicates that the Wide Bay Region has significant capacity to adjust to the impacts of an increased long distance commuter workforce, and as such offers a simple and efficient home base location for use in the EIS.

Townsville

The Townsville Region supports a diverse economy and a wide range of lifestyle choices. The city of Townsville is the key urban centre in North Queensland and the main centre in the Townsville Region. The city of Townsville has a population of more than 175,000 people. The city supports tertiary level health and education infrastructure, a diverse range of recreation, cultural and sporting opportunities and an established range of specialist services.

The city of Townsville is also a major base for the Australian Defence Force and associated services including a range of services that are specifically aimed at supporting local defence families and their unique lifestyle arrangements i.e. families where one parent is often assigned to a remote work location for an extended period of time.

Townsville has a significant regional airport that services the domestic and international market, a major port facility and established rail links to the north, south and west of the region.

While the Townsville Region offers a small labour pool (less than 1,000 unemployed persons with relevant qualifications and 3,500 persons employed in the mining sector), it has extensive training facilities and is located on the preferred supply chain route for the project. Townsville is the closest major city to the project site and due to its location it is likely that a substantial portion of the workforce will choose to reside in this region. The Townsville region is therefore a suitable home base location for the purposes of the EIS.

Cairns

The Cairns Region is a key coastal centre in Northern Queensland, with a large pool of available unskilled labour. While there are limited training facilities in the region, it is anticipated that the proximity of the region to the project site and the attractive lifestyle options available in the city of Cairns will result in a small proportion of the workforce being based in the Cairns Region. There is a domestic and international airport located in the region and the flight time to the project site from Cairns is the shortest of all home base locations considered in this assessment. The Cairns region is therefore a suitable home base location for the purposes of the EIS.

3.3.2 Nearby Regional Communities

Charters Towers and Clermont

Charters Towers is likely to be a home base for a small proportion of the workforce for the following reasons:

- Proximity to the project site;
- The number of unemployed persons;
- The number of Indigenous unemployed persons; and
- The presence of a sizeable secondary school student population (there are multiple secondary school institutions in Charters Towers) and the opportunities this presents for the project in relation to the provision of apprenticeships and traineeships.

However, the project workforce based in Charters Towers is likely to consist entirely of existing residents, as it is unlikely that project employees will choose to relocate to Charters Towers permanently.

Clermont does not present as a viable home base location for the project workforce for the following reasons:

- Limited lifestyle options and remote location;
- Limited supply of educational institutions and training facilities;
- The size of the unemployed labour pool (<19 persons); and
- Local residents have a preference for residential-based employment rather than employment requiring long distance commuting.

3.4 CONCLUSIONS

Table 3-1 outlines the proposed home base locations for the project workforce assessed for the purpose of the EIS. These are shown both as a percentage of the total project workforce, and numbers of workers residing in each home base location (at the time of full production and based on preliminary workforce data). The proposed home base locations are illustrated in Figure 2.

Table 3-1 Home Base Locations

LOCATION	WORKFORCE (%)	WORKFORCE (NUMBER)
South East Queensland	40	1,200
Wide Bay	25	760
Townsville	25	760
Cairns	10	300
Charters Towers	<1	30

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APPENDIX E

Business Capability Audit Summary

CONTENTS

Diagrams

Tables

Appendices

1 INTRODUCTION

1.1 OVERVIEW

This document presents the key findings of the Project China Stone Environmental Impact Statement (EIS) Business Capability Audit conducted by Hansen Bailey for Macmines Austasia Pty Ltd (MacMines). The Business Capability Audit was undertaken to inform the EIS socio-economic baseline and the procurement and supply chain assumptions for the EIS for Project China Stone (the project), and to inform the development of strategies/initiatives to address potential barriers to local industry participation in the project.

The Business Capability Audit involved:

- Collation and analysis of quantitative business statistics to create a baseline profile of businesses in Charters Towers and Clermont;
- Design and implementation of a business capability survey and analysis of key findings; and
- Development of potential management strategies and initiatives to encourage and support business participation in project supply chain opportunities.

1.2 THE PROJECT

The project involves the construction and operation of a large-scale greenfield coal mine. The project site is remotely located with the closest townships being Charters Towers, approximately 285 km by road to the north, and Clermont which is approximately 260 km by road to the south-east. It is anticipated that mine construction will commence in 2016, with first open-cut coal production commencing in 2018, and first underground coal production commencing in 2020. The mine life will be in excess of 40 years.

1.3 OBJECTIVES

The objectives of the Business Capability Audit were to:

- Understand the qualitative socio-economic baseline of local business conditions in Charters Towers and Clermont;
- Gain an initial appreciation of the capabilities of local businesses based in Clermont and Charters Towers who have the potential to participate in project supply chain opportunities;
- Identify barriers to business participation in potential project procurement opportunities;
- Identify barriers to new business establishment and business expansion; and
- Inform the development of management recommendations in relation to project local procurement for consideration by MacMines.

1.4 GEOGRAPHIC CONTEXT

The two closest urban centres to the project site are Charters Towers and Clermont. Both towns are approximately equidistant to the project site and accessed via the Gregory Development Road. Charters Towers has an approximate population of 8,200 persons, while Clermont has an approximate population of 3,700 persons (ABS 2011).

1.4.1 Charters Towers

Originally established as a gold-mining community, the Charters Towers economy today is based on agriculture, education and mining. Charters Towers has a wide variety of retail and commercial businesses, and is relatively economically diverse compared to Clermont. Charters Towers services several gold mines in the region, including:

- Pajingo Gold-Silver Mine (70 km south of Charters Towers);
- Ravenswood (65 km west of Charters Towers); and
- Citigold Imperial and Central Mines (within the town limits).

Both Pajingo Gold-Silver Mine, operated by Evolution Mining, and Ravenswood Mine, operated by Carpentaria Gold, retrenched workers at the end of 2012. These retrenchments lead to a slowing of business in Charters Towers and have likely contributed to reports of low business confidence.

Citigold Corporation is based in Charters Towers and the Citigold goldfields surround the town. Citigold has recently approved a $100 million expansion of its operations in Charters Towers, which is expected to triple its staff from the 40 workers currently based in the town over the next five years. Additional employees are expected to reside locally (McCarthy 2013).

The workforces for the mining operations surround Charters Towers are significantly smaller than the workforces of the coal mines throughout the Bowen Basin and as a result the township of Charters Towers has not been impacted by the mining industry to the same extent as communities throughout the Bowen Basin.

1.4.2 Clermont

Clermont is located approximately 290 km south-west of Mackay in the Bowen Basin. The Clermont economy is based primarily on agriculture, beef grazing and mining. Rio Tinto currently operates the Clermont Coal Mine 12 km north-west of Clermont, which opened in 2010 and provides employment and procurement opportunities to the Clermont community. Prior to 2012, Rio Tinto also operated the Blair Athol Mine 24 km north-west of Clermont, from which the township of Clermont benefitted economically in the form of direct and indirect employment as well as significant procurement and supply relationships. The closure of Blair Athol Mine ahead of schedule in November 2012 resulted in significant job losses in the Clermont community. While the eventual closure of Blair Athol Mine was expected, the economic impact of the closure was compounded by a reported decrease in local employment and procurement from the Clermont Coal Mine. The Business Capability Audit has therefore been undertaken in a time of uncertainty in Clermont, the impacts of which are reflected in the findings of the survey.

The approval of several large mining projects near the township of Alpha, to the south-west of Clermont, is expected to provide increased employment and procurement opportunities in Clermont. The sealing and upgrading of the Alpha-Clermont Road would provide these large projects with a direct link to Mackay and increase opportunities for Clermont to supply labour, goods and services to these projects. The upgrade of the Alpha-Clermont Road is identified as a priority for the Isaac Regional Council and has been publicly acknowledged as a key goal for the Mackay Whitsunday Regional Economic Development Corporation (MWREDC) (Rockhampton Morning Bulletin 2013).

2 METHODOLOGY

2.1 OVERVIEW

This section outlines the methodology used to conduct the Business Capability Audit, including the baseline profiling of Charters Towers and Clermont and the design, implementation and analysis of the business capability survey.

2.2 BASELINE BUSINESS PROFILING

Statistical business profiling was undertaken prior to the design of the business survey, to inform the development of survey questions and survey implementation methods, and to provide a baseline against which to measure survey responses. The ABS Counts of Australian Businesses was the primary source of data for the baseline business profiling (ABS 2012), however a number of other sources were utilised in assessing business operations and conditions in Charters Towers and Clermont, including:

- ABS 2011 Census;
- Australian Business Register;
- Office of Economic and Statistical Research publications; and
- Local government publications.

2.3 BUSINESS SURVEY DESIGN

The business survey was designed by Hansen Bailey to allow for open-ended responses and qualitative information as well as the quantitative statistics necessary to categorise the businesses.

The survey was initially designed as a dual-purpose telephone and web survey. However, during the early stages of implementation it became clear that the social context of Charters Towers was not responsive to internet-based and telephone surveys. As a result, the survey was amended as a paper-based survey, and administered in person in Charters Towers and Clermont.

A copy of the paper-based survey is included in Appendix A.

2.4 BUSINESS SURVEY IMPLEMENTATION AND RESPONSES

2.4.1 Implementation

The survey was administered in Charters Towers and Clermont during June and July 2013 using the following mechanisms:

- Telephone surveys of targeted businesses;
- Distribution to attendees at the Charters Towers Chamber of Commerce and Mines (CTCCM) meeting;
- Face-to-face survey of business owners/operators in Charters Towers and Clermont; and
- An online survey designed and administered via SurveyMonkey. The survey was distributed as a weblink in the following media:
  - Project China Stone Community Information Sheet 2;
  - Email to CTCCM members;

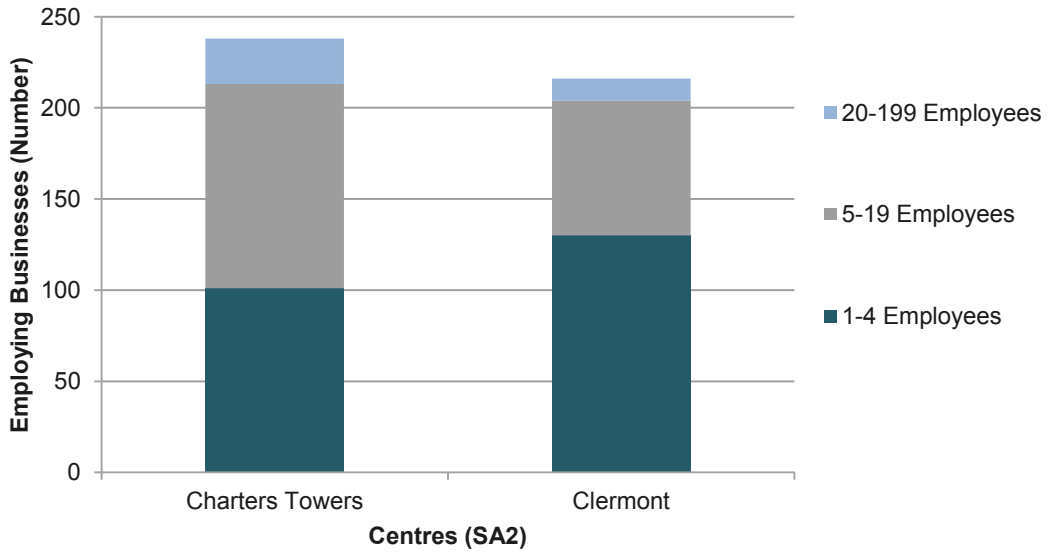
- Charters Towers local newspaper;
- Email to members of the Clermont Business and Community Group; and
- Targeted emails to businesses in Charters Towers and Clermont.

2.4.2 Respondents

A total of 85 businesses participated in the survey. Approximately 75% of total respondents were located in Charters Towers and 25% were located in Clermont.

According to 2011 ABS data, there were 534 businesses in Charters Towers Statistical Area Level 2 (SA2) and 619 businesses in Clermont SA2. However, in both towns, a high proportion of these businesses are "non-employing businesses", which are typically self-managed agricultural businesses. The sample sizes for the survey were calculated based on businesses that employed one or more staff. Diagram 2-1 illustrates the number of employing businesses in operation in Charters Towers and Clermont at the time of the 2011 ABS Census.

Diagram 2-1 Number of Employing Businesses



Source: (ABS 2011)

In 2011, the ABS recorded 238 employing businesses in Charters Towers SA2 (ABS 2011) and 63 surveys were completed by Charters Towers businesses. The sample size for Charters Towers is approximately 26%.

There were 216 employing businesses in the Clermont SA2 in 2011 (ABS 2011), and 22 surveys were completed by Clermont businesses. Therefore, the sample size is approximately 10% of Clermont businesses.

The lower number of respondents from Clermont compared to respondents from Charters Towers is assumed to have limited impact on the key results of the survey, as the intention of the survey was to gain a qualitative and quantitative understanding of business conditions rather than conduct a statistically valid study.

3 SUMMARY OF KEY FINDINGS

3.1 OVERVIEW

This section provides an overview of the key findings of the Business Capability Audit, including the findings of the statistical analysis and the results of the business capability survey.

3.2 BUSINESS CHARACTERISTICS

The majority of the 82 survey respondents in both towns were engaged in business within the retail trade industry sector. The main areas of retail business were automotive and tyre sales in Charters Towers, and machinery and plant hire in Clermont.

ABS statistics indicate Charters Towers has a higher proportion of businesses in all other industries compared to Clermont, indicating a more diversified economy. Clermont has a significantly higher proportion of businesses in the agriculture, forestry and fishing sector compared to Charters Towers (ABS 2011).

In 2011, the median annual business turnover in Charters Towers was $100,000 to $200,000, and between $200,000 and $500,000 in Clermont (ABS 2012). Business sectors in Charters Towers which had an annual turnover of more than $2 million included the retail trade, manufacturing and construction sectors. Business sectors in Clermont with a turnover higher than $2 million included agriculture and construction (ABS 2012). Survey respondents were asked to identify firstly their annual turnover for the past financial year (2012-2013) and secondly whether they anticipated financial turnover for the next financial year would be higher, lower or about the same.

Respondents were asked to identify the number of people employed in their business. In both towns, over half the respondents employed under five people.

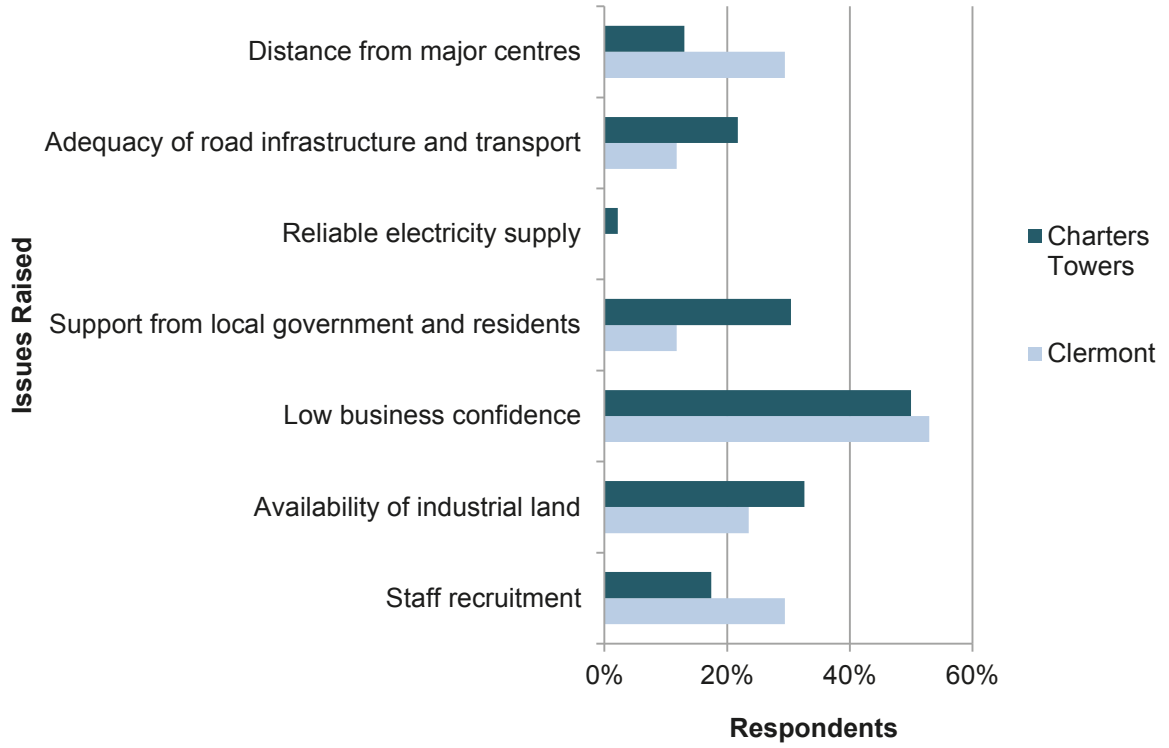
Participants in the business survey were asked to identify the number of years the business had been in operation. Over 60% of the 59 survey respondents from Charters Towers had been operating their business for more than 10 years. In Clermont, however, the majority of businesses were relatively new, with over 60% of businesses operating for 9 years or less and a significantly lower proportion (36%) of businesses operating for over 10 years. The high proportion of businesses that have been operating for nine years or less in Clermont is likely attributable to the parallel growth in the mining sector in the Bowen Basin.

Overall, businesses in Charters Towers were well-established with a large number of small businesses earning moderate turnovers and expecting moderate growth in the future. Businesses in Clermont reported more diversity in turnover ranges and expectations of the future, likely associated with the volatility of mining engagement in the town in the past decade.

3.3 ISSUES AFFECTING BUSINESS CONDITIONS

Survey respondents were asked to identify the main issues currently affecting business capacity in each town (Diagram 3-1).

Diagram 3-1 Issues Affecting Local Business Conditions



Source: survey results

In Charters Towers, respondents reported that the main issues affecting local business conditions were low business confidence, support from local government and the availability of industrial land. Delays due to freight to and from major centres, the lack of passenger and commercial air services available in the town and frustration at limited local support for economic growth were issues also noted as affecting business conditions.

Respondents in Clermont identified the town's distance from major supply centres and difficulty recruiting staff as the most salient issues affecting business conditions locally, after low business confidence.

3.3.2 Business Confidence

Respondents in Charters Towers frequently attributed the low business confidence in the town to the policies of the federal government at the time of surveying, with repeated assurances from respondents that business conditions would improve following the federal election.

The closure of the Rio Tinto Blair Athol Mine in Clermont, the reliance by Rio Tinto on a fly-in fly-out (FIFO) workforce at the new Clermont Mine, and the recent retrenchment of a number of workers from mines around Charters Towers are considered to be the key drivers behind frequent reports of weakened business confidence in both towns.

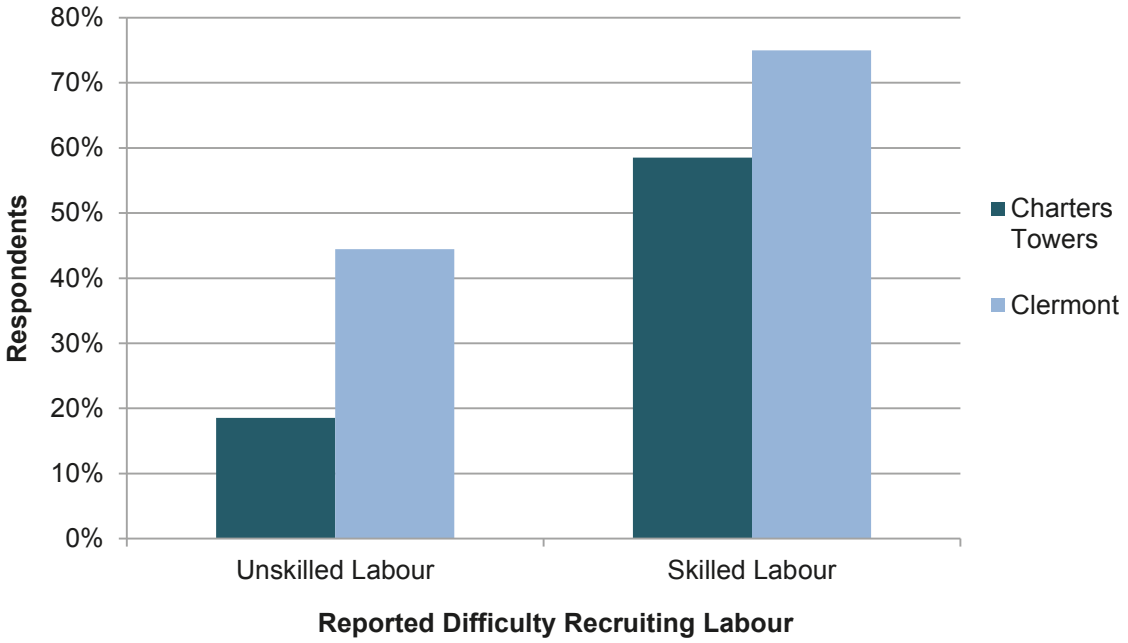
3.3.3 Recruitment of Labour

Survey respondents were specifically asked how easy it was to recruit skilled and unskilled labour for their business (Diagram 3-2).

Staff recruitment was reported as significantly more difficult in Clermont compared to Charters Towers. In Charters Towers, 59% of respondents indicated that it was difficult to recruit skilled labour, but only 19% had difficulty recruiting unskilled labour. In Clermont, however, 75% of respondents indicated that it was difficult to recruit skilled labour, and 45% of respondents also experienced difficulty recruiting unskilled labour.

Respondents in Clermont attributed difficulties recruiting both skilled and unskilled labour to the small population base of the town and the presence of significant wage competition from local and regional mining operations. During the previous period of sustained mining sector growth recruitment of skilled and unskilled labour for non-mining related businesses had reached a critical point severely affecting the capacity of businesses to supply services and government and nongovernment service providers to meet demands.

Diagram 3-2 Difficulty Recruiting Labour



Source: survey results

3.4 ENGAGING WITH THE MINING SECTOR

3.4.1 Experience Engaging with the Mining Sector

Survey respondents were asked whether they currently engaged with the mining sector. In Charters Towers, 70% of respondents stated that they engage with the mining sector, compared with 59% of respondents from Clermont.

Respondents from Clermont who did not currently engage with the mining sector stated the lengthy induction processes and volatile nature of mining contracts as the main reasons they do not currently engage with the mining sector. In Charters Towers, respondents who operate businesses relevant to the mining sector and who do not currently engage with the sector identified a lack of apparent interest in local businesses from the mining sector and limited transparency in the tendering process as the main reasons for limited engagement.

Despite this, 89% of respondents from Clermont and 80% of respondents from Charters Towers who do not currently engage with the mining sector stated that they would like to engage with the mining sector in the future.

Of respondents from Clermont who currently engage with the mining sector, 77% engage directly and 70% are prequalified or registered suppliers to mining operations in the region. In Charters Towers, 83% of respondents who currently engage with the mining sector do so directly rather than through a contractor, and 66% of these respondents are prequalified or registered suppliers.

In both Charters Towers and Clermont, over 70% of respondents who currently engage with the mining sector have engaged with the mining sector for over 5 years.

In Clermont, the majority of respondents who engage with the mining sector attributed over 50% of their annual turnover to this industry. In Charters Towers, however, the majority of respondents currently engaging with the mining sector attributed less than 50% of their annual turnover to business from the mining sector, indicating a lower reliance on mining for their business.

3.4.2 Confidence to Engage with the Mining Sector

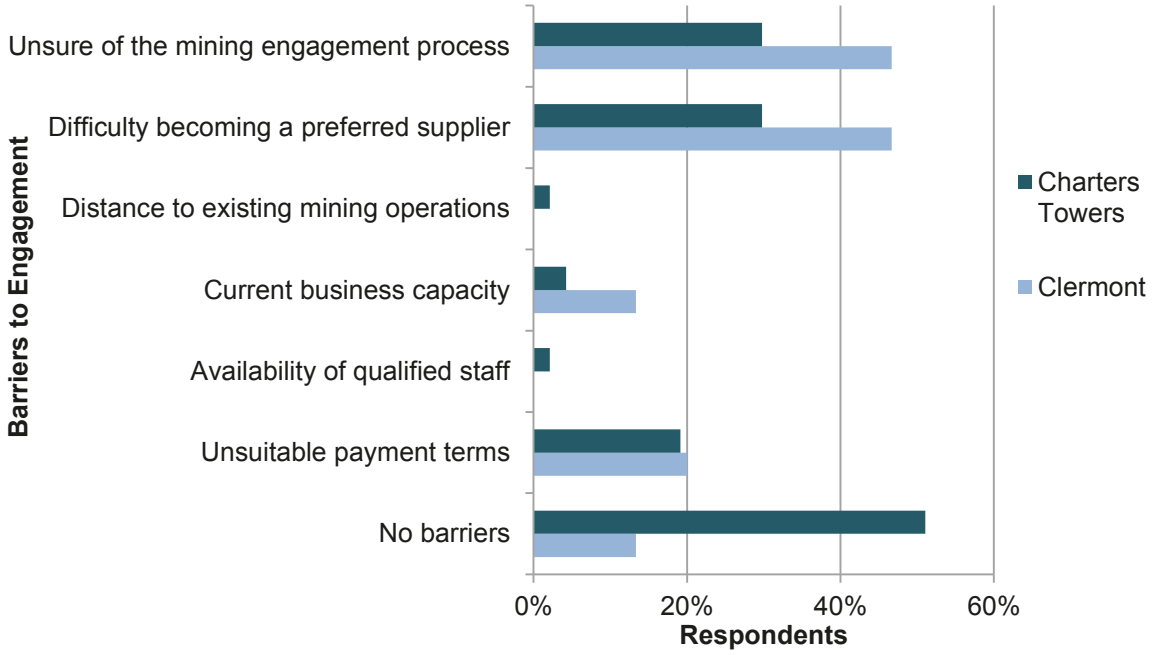
In Charters Towers the respondents who did not currently engage with the mining sector were confident of their labour and technical skills, business knowledge and financial capability to successfully engage with the mining sector if and when they need to. In Clermont, respondents who didn't currently engage with the mining sector were confident in their labour and technical skills and business knowledge, but less confident of their financial capability to comfortably service the mining sector. A lack of confidence in business financial capabilities may relate to perceptions of potential payment risk when engaging with the mining sector.

3.4.3 Barriers to Mining Engagement

Respondents were asked to think about the main barriers (perceived or real) to engaging successfully with the mining sector.

The majority of respondents in Clermont reported barriers to mining engagement, compared to less than 50% of respondents from Charters Towers (Diagram 3-3).

Diagram 3-3 Barriers to Engaging with the Mining Sector



Source: survey results

The most common barriers identified by respondents from Clermont were:

- The engagement process with mining companies – Respondents reported that the engagement process lacked transparency, the interviews were often held in capital cities rather than locally, and that there is a strong perception that mines have pre-determined suppliers and only source goods from large contractors;
- Difficulties becoming a preferred supplier – In relation to this issue, respondents cited extensive paper work, demanding occupational health and safety requirements, costs, and the insecurity of being awarded a contract after investing in becoming a preferred supplier as barriers.

Respondents in Clermont noted that supply chain processes were often not transparent and the negotiations and tendering interviews are often undertaken in larger city centres, negating the involvement

of local business owners who cannot travel for the process. Onerous safety and regulatory requirements to attend sites and payment terms longer than 30 days were also reported as barriers to small business engaging with the mining sector.

In Charters Towers, only 30% of respondents indicated that these factors were barriers to businesses engaging with the mining sector.

Clermont respondents raised barriers to engagement more frequently than respondents from Charters Towers. This is likely attributable to the fact that the Clermont businesses operate in a more competitive environment as business opportunities are associated primarily with only one mine operator – Rio Tinto. In comparison there are a larger number of mining operators based around Charters Towers.

While respondents in Charters Towers frequently reported no barriers to mining sector engagement through survey responses (Diagram 3-3), qualitative comments included in the survey and discussions held while performing the survey indicated that communication is a major barrier to engaging with the mining sector. The distance to mining projects, limited opportunities for face-to-face engagement with the mining sector and impersonal tendering process were all identified as issues affecting the willingness of local businesses to participate in supply chain opportunities. It is evident from the consultation that local businesses in Charters Towers are accustomed to personal, face-to-face contact with their suppliers and clients.

Respondents in both Charters Towers and Clermont reported payment difficulties with mining companies. In many cases, respondents indicated that they often need to alter their pricing to insure themselves against mining companies defaulting on payments. Further, a number of businesses indicated that financial risks limited their ability to hold the inventory level required by the mines and major contractors.

3.4.4 Government Services

Survey respondents were asked to identify whether they sought assistance from any government provided business services to improve capabilities. The majority of respondents indicated that they had never utilised government services for small business such as the Industry Capability Network (ICN) or Enterprise Connect. While some respondents acknowledged that they had heard of these tools, they felt that they were “too convoluted” or that there wasn’t enough local demand from the mines to justify using them.

4 POTENTIAL MANAGEMENT STRATEGIES

4.1 OVERVIEW

This section presents a summary of the management strategies and initiatives recommended by Hansen Bailey for further consideration by MacMines in order to establish communication between MacMines and local businesses and enhance local business participation in the project in the longer term. These management strategies offer an opportunity to contribute to local business growth and establish supply chain relationships which meet local and state government expectations for local procurement. The strategies and initiatives discussed below include those suggested by survey respondents during the conduct of the survey.

4.2 RESPONDING TO ISSUES AFFECTING BUSINESSES

Many of the broader issues identified by survey respondents as affecting local business conditions in Charters Towers and Clermont, such as low business confidence, require a local government and planning response. There is a role for industry in ensuring local government and the broader business communities are aware of the progress of key projects, in order to enable the timely delivery of land and services to support any associated population growth. In this regard it is recommended that MacMines establish regular quarterly meetings with the CTRC and IRC to keep each local government informed of the project and allow investment decisions to be made by the respective Councils in a timely manner to support project development.

The main issues identified by local businesses in Charters Towers and Clermont as currently affecting business conditions are listed in Table 1, along with suggested strategies to ameliorate these issues and lessen the impact of the project on Charters Towers and Clermont.

Table 1: Local Business Conditions – Issues and Proposed Management Strategies

ISSUE	TOWN	STRATEGIES
Limited support for business growth from local government and residents	Charters Towers	Establish a regular meeting (quarterly) with the CTRC to keep the local government informed of the progress of the project to inform investment decisions in the town.
Low business confidence	Charters Towers, Clermont	Establish formal and regular communications with local businesses in Charters Towers and Clermont to keep local business owners informed of project progress and upcoming procurement opportunities. Suggestions include a 6-monthly information night at a suitable venue in each location to which all local businesses are invited. It is recommended that the event be advertised through the relevant local newspaper. Appoint a single point of contact in MacMines for local businesses to contact in relation to procurement opportunities. Advise the business sector of this point of contact.
Availability of unskilled labour	Clermont	Limit labour sourcing from Clermont to sustainable levels through selective recruitment

ISSUE	TOWN	STRATEGIES
Availability of skilled labour	Charters Towers, Clermont	Limit project labour sourcing from Clermont and Charters Towers to sustainable levels through selective recruitment. Enable and support the delivery of mining related trades at the Dalrymple Trade and Training Centre (DTTC) in Charters Towers. Mechanisms may include: ■ Champion the support of the Queensland Minerals and Energy Academy. ■ Provide work experience opportunities for students at the DTTC. ■ Become a major sponsor of the DTTC to provide necessary funds to enable delivery of mining related trades. Engage with Adani to encourage their investment in the DTTC. In partnership with the QMEA, and Queensland Resources Council investigate the opportunity to expand the QMEA Regional Agricultural and Mining Industry Training package to Charters Towers to assist young people in Northern Queensland to start careers in the resources sector. The DTTC may be a suitable hub from which to progress this initiative. Establish a formal traineeship and apprenticeship scheme for the project that supports small businesses in Charters Towers and Clermont and builds on the established links between the agricultural, construction and mining sector. This approach could be similar to the Unified 2 Qualified Program established through Whitsunday Industrial Workforce Development.

4.3 RESPONDING TO BARRIERS AFFECTING MINING ENGAGEMENT

Survey respondents consistently identified the tendering and engagement process with the mining industry as a significant barrier to local business participation in mining sector supply chains.

Table 2 summarises the key barriers to engagement with the mining sector reported during the implementation of the survey and outlines strategies to promote local business participation in project procurement opportunities in Clermont and Charters Towers. Many of the barriers identified could be addressed through the creation of a tailored local buying program similar to the program established in 2011 by BMA for Bowen Basin businesses.

Table 2: Local Business Participation – Barriers and Proposed Management Strategies

BARRIER	TOWN	STRATEGIES
Limited notification of procurement opportunities	Charters Towers, Clermont	Enhanced communication between MacMines and the local business communities of Clermont and Charters Towers would provide greater opportunity for local businesses. This could be achieved through the establishment of a formal process for the timely notification of local businesses of project procurement opportunities. Communicating prospective procurement demand to local suppliers within a medium term timeframe would enable them to build the required capacity. This could involve the development of an online local procurement database, where businesses can register their interest and receive advance notice of procurement opportunities.
High cost of entry due to inductions and equipment requirements	Charters Towers, Clermont	Recognition of other mining projects' safety standards and mining inductions to prevent double-up of costs.
No local contact for procurement	Charters Towers, Clermont	Appoint a single point of contact in MacMines for local businesses to contact in relation to procurement opportunities. Ensure tendering meetings are held in local towns as well as capital cities.
Financial Risks	Charters Towers, Clermont	Establish local payment guidelines prior to project commencement, outlining payment periods, penalties for late payment and expectations of small businesses. This could form part of a MacMines Local Buy Program initiative similar to the BMA Local Buying Program. Partnerships between MacMines and local suppliers - By partnering with suppliers and establishing agreements that ensure stock on hand will be purchased by MacMines, the supplier is able to maintain the level of stock required to meet project demands whilst minimising financial risk.

BARRIER	TOWN	STRATEGIES
Understanding of procurement process	Charters Towers, Clermont	Given the apparent lack of experience in preparing tender documents, MacMines could assist in educating local businesses on the requirements of tendering for large project work, and assist in training suppliers on how to meet the assessment criteria standards so they can more effectively tender for business. There is an opportunity to conduct this training in partnership with the established government organisations such as the Industry Capability Network. In addition it is recommended that MacMines develop a publicly available local procurement policy which outlines the following: ■ Advertising of tenders; ■ Payment terms; ■ Point of contact for procurement enquiries; ■ How to divide large tenders into smaller work packages; and ■ Instructions on completing paperwork and regulations.

4.4 OPPORTUNITIES

Both Charters Towers and Clermont support a range of business sectors. While all procurement opportunities associated with the project may ultimately be available to local suppliers, it is acknowledged in both Charters Towers and Clermont that many businesses are unable to compete with larger national suppliers who have advantages through economics of scale. However, through the survey it is apparent that there are specific procurement opportunities associated with the different phases of the project that may be ideal for local suppliers in Charters Towers and Clermont. These opportunities include:

- Supply of goods and consumables, including;
  - Clothing and footwear;
  - Electrical consumables; and
  - Food;
- Repair and maintenance work (i.e. vehicles and tyres);
- Cleaning services;
- Metal fabrication;
- Transport and freight;
- Equipment hire; and
- Indigenous and non-Indigenous labour hire.

5 CONCLUSION

The Business Capability Audit analysed a variety of statistical data and the responses of 85 businesses in Clermont and Charters Towers. The findings of the Business Capability Audit indicate that there are supply chain opportunities in both towns, however there are barriers to existing businesses participating in these opportunities.

The business diversity and the high proportion of established businesses in Charters Towers indicate that the local economy of Charters Towers can accommodate additional mining investment with little disruption to the current economic and labour market conditions. Charters Towers has a high proportion of businesses in the mining, construction and manufacturing sectors, indicating strong opportunity for mining service engagement. Charters Towers also has a positive view of engagement with the mining industry, with over half of Charters Towers respondents indicating no barriers to mining engagement, and the majority of Charters Towers respondents not currently engaging with the mining sector stating that this is due to a lack of interest from the mining companies rather than a lack of desire from the business.

The Clermont economy has been significantly affected by mining volatility in the past and while there is capacity in the local economy due to the closure of Blair Athol mine, it is likely that any advantage to be gained from this excess capacity will decline between this study and commencement of the project's operations phase. This is due to alternate business opportunities arising from other mining projects in the area, notably the Alpha Project. Despite the reports of increased business capacity in Clermont, respondents indicated significant difficulty in recruiting skilled and unskilled labour.

The higher population and relatively stable economic base of Charters Towers presents opportunities for procurement with minimal negative impacts and significant positive flow-on effects. Procurement within Clermont will necessitate careful planning so as to not exacerbate existing negative impacts of mining engagement in the township.

The market conditions in Charters Towers and Clermont provide opportunities for MacMines to implement strategies to create new supplier relationships and address perceived barriers to working with the mining industry, leading to improved local participation.

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Appendix A

Business Capability Survey (Paper Version)

Project China Stone Business Capability Survey

Survey Information

Hansen Bailey, a specialist environmental consulting company, has been engaged by Macmines Austasia Pty Ltd (MacMines) to prepare the Environmental Impact Statement (EIS) for Project China Stone. Hansen Bailey is undertaking a business capability survey, to inform the preparation of the EIS and project planning.

Project China Stone involves the greenfield development of a large-scale coal mine. The project site is located approximately 270 km south of Townsville and 300 km west of Mackay, at the northern end of the Galilee Basin.

This survey has been designed to gain an overview of business capabilities in Charters Towers and Clermont. The information from the survey will be used to:

- Understand the capacity and capabilities of local businesses;
- Identify any barriers to the participation of local businesses in the mining industry; and
- Inform the development of potential strategies to support local business development.

The survey should take approximately 10 minutes to complete.

If you are interested in discussing business capabilities in your local region and providing more detail about your business than is possible in this survey, for the purposes of informing the EIS and project planning, a phone survey can be arranged by providing your contact details to:

Bethany Carey
Social Scientist
HANSEN BAILEY
Tel: (07) 3226 0900
Fax: (07) 3226 0901
Email: bcarey@hansenbailey.com.au

Confidentiality Statement and Consent

Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdrawal from participating at any time, you will not be penalised.

The procedure involves completing a survey that will take approximately 10 minutes. Your responses will be confidential and we do not collect identifying information such as your name or email address unless you choose to provide it.

We will do our best to keep your information confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this survey will be used to inform the EIS project planning only and may be shared with Hansen Bailey and MacMines representatives.

If you have any questions about the survey, please contact Bethany Carey at Hansen Bailey (details above).

Project China Stone Business Capability Survey

1. Consent

Please select your choice below.

Ticking "Agree" below indicates that:

- **You have read the above information**
- **You voluntarily agree to participate**
- **You are at least 18 years of age**

If you do not wish to participate in the survey, please discard this survey.

◯ I agree to participate in this survey.

Business Details

Questions 2 - 13 relate to your business, its capacity, capability and future growth.

2. In which town is your business located?

◯ Charters Towers

◯ Clermont

◯ Mackay

◯ Moranbah

◯ Townsville

Other (please specify)

3. How many years has your business been operating in your town?

◯ Less than 1 year

◯ 1 - 4 years

◯ 5 - 9 years

◯ 10 - 20 years

◯ 20+ years

4. Does your business have sales offices in other geographic locations?

◯ No

Yes (please tell us where)

Project China Stone Business Capability Survey

5. What is the main activity of your business?

6. What was the turnover for your business last financial year (2011/12)?

- ◯ Less than $50,000
- ◯ $50,000 - $200,000
- ◯ $200,000 - $2 million
- ◯ $2 million - $5 million
- ◯ Over $5 million

7. Do you expect your business turnover this financial year (2012/13) to be higher, lower, or about the same as last financial year?

- ◯ Higher
- ◯ Lower
- ◯ About the same

Please explain your choice

8. How many people does your business employ on a regular basis (full time and part time)?

- ◯ 1
- ◯ 2 - 5
- ◯ 6 - 10
- ◯ 11 - 20
- ◯ More than 20

9. Does your business offer training, traineeships or apprenticeships?

- ◯ Yes
- ◯ No

10. If yes, please tell us how many apprentices/trainees, what field they are in and where you recruit them from (e.g. job agencies, schools):

Project China Stone Business Capability Survey

11. Without hiring additional staff or expanding your facilities, what level of additional demand do you feel your business could comfortably service?

- ◯ 25% increase in demand
- ◯ 50% increase in demand
- ◯ Doubling of demand (100% increase)
- ◯ Could not expand without hiring additional staff or increasing facilities

12. What would prevent you from increasing your output further than the highest level stated in Question 11?

13. Do you have plans to significantly expand any of the following components of your current business operations in the next 5 years?

- ◯ Geographical service area
- ◯ Labour force
- ◯ Range of services offered
- ◯ Business/commercial space
- ◯ None of the above

Other (please specify)

Local Business Conditions

Questions 14 - 17 relate to the current, past and future business conditions in the town where your business is located.

Project China Stone Business Capability Survey

14. What do you feel are the main issues currently affecting business capacity in your town?

- ◯ Staff recruitment
- ◯ Availability of industrial land or commercial space
- ◯ Access to fast/reliable internet
- ◯ Low business confidence
- ◯ Support from local government and residents
- ◯ Reliable electricity supply
- ◯ Adequacy of road infrastructure and transport
- ◯ Distance from major centres

Other (please specify)

15. Is it easy to recruit unskilled labour for your business?

- ◯ Yes
- ◯ No

16. Is it easy to recruit skilled labour for your business?

- ◯ Yes
- ◯ No

17. Rate how strongly you agree or disagree with each of the following statements about business conditions in your town and the local area:

	Strongly Disagree	Disagree	Agree	Strongly Agree
Business conditions have improved over the past 5 years	◯	◯	◯	◯
Changes in business conditions over the past 5 years are largely due to changes in the mining industry	◯	◯	◯	◯
Business conditions for the next 5 years look favourable	◯	◯	◯	◯

Comments

Mining Sector Engagement

Questions 18 and 19 relate to engagement with the mining sector.

Project China Stone Business Capability Survey

18. What do you think are the main barriers to successful engagement with the mining sector? (you may select more than one)

- ◯ No barriers
- ◯ Unsuitable payment terms
- ◯ Availability of qualified staff
- ◯ Current business capacity
- ◯ Distance to existing mining operations
- ◯ Difficulty becoming a preferred supplier
- ◯ Unsure of the engagement process with mining companies

Other (please specify)

19. Does your business currently engage with the mining sector?

- ◯ Yes (please skip to Question 24)
- ◯ No

Not Currently Engaging with Mining Sector

Questions 20 - 23 are to be answered if your business does not currently engage with the mining sector. At the end of Question 23, please skip to Question 30.

20. Would you like to engage with the mining sector?

- ◯ Yes
- ◯ No (please skip to Question 30)

21. Why doesn't your business currently engage with the mining sector?

22. What services do you feel your business could offer the mining sector?

Project China Stone Business Capability Survey

23. Rate how strongly you agree or disagree with each of the following statements about your business capacity:

	Strongly Disagree	Disagree	Agree	Strongly Agree
My business has the financial capability to successfully participate in business opportunities associated with the mining industry	◯	◯	◯	◯
My business has the labour and technical skills needed to successfully participate in business opportunities associated with the mining industry	◯	◯	◯	◯
My business has the business knowledge and management capabilities needed to successfully participate in business opportunities associated with the mining industry	◯	◯	◯	◯

Comments

Please skip to Question 30

Currently Engaging with Mining Sector

Questions 24 - 29 are to be answered if your business currently engages with the mining sector.

24. Do you engage directly with the mining firms in the region or indirectly through a major contractor?

◯ Engage directly

◯ Engage through a major contractor

25. Are you a pre-qualified or registered supplier to any mining operations in the region, or to any major contractors who supply services to mining operations?

◯ No

Yes (please specify which mine or contractor)

26. How long has your business been engaging with the mining sector?

◯ Less than 1 year

◯ 1 - 4 years

◯ 5 - 9 years

◯ 10 - 20 years

◯ 20+ years

Project China Stone Business Capability Survey

27. What services does your business supply to the mining sector?

28. What proportion of your annual business revenue would you estimate is directly or indirectly derived from the region's mining industry?

% Mining

Other (please specify industry(ies))

29. How does engaging with the mining sector differ from engaging with other sectors?

Business Enhancement Strategies

Questions 30 and 31 are to be answered by all respondents.

30. Have you ever utilised services offered by state or local government to assist with business development, staff recruitment, service delivery (e.g. ICN, Enterprise Connect etc)?

◯ No.

Yes (please list the services)

31. Do you have any suggestions for how local and regional business development opportunities associated with the project could be promoted in your town (e.g. a register of interested businesses, cooperation with council, specific initiatives you've heard of)?

Project China Stone Business Capability Survey

Business and Personal Details

32. Are you interested in receiving updates on Project China Stone? If so, please provide your business details below (note that these details may be provided to MacMines, but not identified in the survey results and identifying information will not be included in the EIS). If you do not want to be kept updated on the progress of the project EIS, please leave this page blank:

Business Name	
Postal Address	
Email Address	
Phone Number	
Respondent Name	

Hansen Bailey would like to thank you for taking the time to complete our survey. If you would like any further information on Project China Stone, please contact:

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