SARAJI EAST MINING LEASE PROJECT

Environmental Impact Statement

Appendix L-1
Social Impact Assessment
Technical Report

BHP

Saraji East Mining Lease Project

Social Impact Assessment

13 August 2019

elliott whiteing
SOCIAL PLANNING SOLUTIONS

Contents

Abbreviations

AVMP	Accommodation Village Management Plan
AEDC	Australian Early Development Census
BBAC	Barada Barna Aboriginal Corporation
BBCC	Bowen Basin Community Committee
BCP	Byerwen Coal Project
BMA	BM Alliance Coal Operations Pty Ltd
CCM&RP	Carmichael Coal Mine and Rail Project
CDMPs	Community Development Management Plans
CHPP	Coal Handling and Preparation Plant
CIR	Code Industry Report
CMWHS	Coal Mine Workers' Health Scheme
CQU	Central Queensland University
CSCP	China Stone Coal Project
CTEC	Coalfield Training Excellence Centre
DAF	Dissolved air flotation
DEO	Desired Environmental Outcome
DES	Department of Environment and Science
DEHP	Department of Environment and Heritage Protection
DERM	Department of Environment and Resource Management
DIDO	Drive in, drive out
DNRME	Department of Natural Resources, Mines and Energy
DSDMIP	Department of State Development Manufacturing Infrastructure and Planning
DTMR	Department of Transport and Main Roads
DVO	Domestic violence order
EA	Environmental Authority
EIS	Environmental Impact Statement
EP Act	Environmental Protection Act 1994
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPC	Exploration Permit for Coal
ERP	Estimated resident population
FIFO	Fly in, fly out

FTE	Full time equivalent
GLD	Global level documents
GP	General practitioner
GAC	Granular activated carbon
Ha	Hectare
IAHT	Isaac Affordable Home Trust
IBA	Indigenous Business Australia
ICN	Industry Capability Network
ILUA	Indigenous Land Use Agreement
IRC	Isaac Regional Council
ISRAD	Index of Relative Socio-Economic Advantage and Disadvantage
KPI	Key performance indicator
kV	Kilovolt
LGA	Local government area
LOTE	Language other than English
MCA	Minerals Council of Australia
MERC	Mackay Hospital's Education and Research Centre
METS	Mining equipment, technology and services
MIA	Mine Infrastructure Area
MIW	Mackay, Isaac and Whitsunday
ML	Mining Lease
MLA	Mining Lease Application
MNES	Matters of National Environmental Significance
Mtpa	Million tonnes per annum
MDSS	Moranbah District Support Services
MYCC	Moranbah Youth and Community Centre
NRW	Non-resident worker
NLW	New Lenton Project
NMAs	Nominated medical advisers
NNTT	National Native Title Tribunal
OCG	Office of the Coordinator General
ODP	Olive Downs Project
PDA	Priority Development Area
PLA	Priority Living Area
the Project	Saraji East Mining Lease Project

QAS	Queensland Ambulance Service
QFRS	Queensland Fire and Rescue Service
QGSO	Queensland Government Statistician's Office
QoLi	Quality of Life Indicator
QPS	Queensland Police Service
QR	Queensland Rail
RIDA	Regional Interests Development Approval
RHML	Red Hill Mining Lease Project
RIN	Regional Industry Network
ROM	Run of mine
RMP	Rehabilitation Management Plan
RPI Act	Regional Planning Interests Act 2014
SA2	Statistical Area Level 2
SA4	Statistical Area Level 4
SCA	Strategic Cropping Area
SDPWO Act	State Development Public Works Organisation Act 1971
SEIFA	Socio-Economic Indices for Areas
SES	State emergency services
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SPP	State Planning Policy
SSRC Act	Strong and Sustainable Resource Communities Act 2017
STP	Sewage treatment plant
TI Act	Transport Infrastructure Act 1994
ToR	Terms of Reference
TSP	total suspended particles
ULDA	the Urban Land Development Authority
UDC	Utah Development Company
VET	Vocational Education and Training
WAV	Workplace accommodation village

Executive Summary

BM Alliance Coal Operations Pty Ltd (BMA) is seeking environmental approvals for the Saraji East Mining Lease Project (the Project), which is located approximately 30 km north of Dysart and approximately 167 km south-west of Mackay in Queensland.

This Social Impact Assessment (SIA) forms part of the Environmental Impact Statement (EIS) for the Project and was prepared by Elliott Whiteing Pty Ltd. during 2018-2019. The SIA seeks to address the Terms of Reference (ToR) for the EIS, the requirements of the Strong and Sustainable Resource Communities Act 2017 (SSRC Act), and the Coordinator-General's SIA Guideline.

The Project is within the traditional lands of the Barada Barna people and within the Isaac Regional Council (IRC) Local Government Area (LGA). The Australian Bureau of Statistics (ABS) Census of Population and Housing 2016 indicates that the Isaac LGA had an estimated resident population of 20,940 people in 2016. The Queensland Government Statisticians Office estimated the LGA's population at 20,934 people in 2018.

Dysart, Moranbah and Middlemount are the communities that are mostly likely to experience social impacts and opportunities, however other communities within the Isaac LGA are expected to benefit from employment and supply opportunities. Broader regional benefits in relation to employment and supply opportunities are also likely as a result of the Project.

Moranbah, Dysart and Middlemount were established as purpose-built towns to accommodate mining personnel and their families, so their settlement pattern and community identity are strongly influenced by the mining industry.

Community sentiment in the Isaac region is that new mining operations are supported, with the availability of local employment, business supply opportunities and potential population growth driving this support.

Key impacts and opportunities identified in the SIA are as follows:

Community and Stakeholders

- Nearby landholders may experience occasional noise or dust impacts, which will be mitigated in accordance with their co-existence agreements with BMA.
- There is potential for an increased number of non-resident workers (NRW) to change social dynamics in local communities, particularly in the context of cumulative impacts.
- There is potential to strengthen population growth in Dysart, Moranbah, Middlemount and the Isaac LGA as a whole through direct and indirect employment.
- The Project would support local towns' identity as mining towns, and make a positive contribution to community cohesion through increased long-term mining employment and population increases.

Employment

- Construction would offer up to 1,000 jobs, benefitting construction industry personnel from the local, regional and broader (Queensland) areas.
- At full development (potentially by 2025), up to 500 new operational jobs would be created.
- Recruitment and training strategies will ensure that local community members benefit from the employment and training opportunities associated with the Project.

- The Project will support long-term availability of mining employment in the Isaac LGA and contribute to employment diversification through additional underground mining opportunities.
- BHP's goal of 5.75% Indigenous employment by FY 2025 will see an increase in employment opportunities for Indigenous people.
- BHP's goal for a 50% female workforce overall will see an increase in employment opportunities for women in the Isaac LGA and further afield.
- Locally-targeted recruitment strategies will ensure that local residents benefit from Project employment.
- Approximately 10 apprenticeships and training opportunities are expected to be available on a continuing basis, with local young people comprising the primary recruitment pool.
- The Project would contribute to competition for skilled labour within the Isaac LGA and Mackay, Isaac and Whitsunday (MIW) region.

Population and housing

- Compared to the FTE population (NRW plus estimated residential population), an increase of approximately 2.52% on the estimated FTE population in Isaac LGA in 2023.
- Requirement for accommodation for up to 900 NRW during construction.
- BMA's provision of subsidised housing will encourage new residents to settle in the region.
- An estimated 130 dwellings could be required during operations to house new local residents, primarily in Dysart and Moranbah.
- Contractors' housing requirements and population increases as a result of indirect employment will result in increased demand for rental housing, with potential to increase rental costs, but demand is likely to be offset by market stimulation.
- During peak operations, a resident population increase in the Isaac LGA in the order of 270 people is estimated, supporting planned population growth.
- The Project may result in an increase of 150 NRW on shift by 2025, which would represent an increase of 1.33% on the projected NRW population and contribute to demand for services and infrastructure.
- Total population increases (residents plus NRW) of approximately 1.29% in 2025 may occur, increasing demands on local infrastructure.

Health and wellbeing

- During construction, an estimated 900 non-local workers (at peak) may translate to demand for approximately 0.08 of a General Practitioner (GP) and add increased demands on hospital, emergency and mental health services.
- During operations, increased demand for GPs in the order of up to 0.5 GP as the result of population increases is likely, as well as increased demand for hospital and mental health services.
- Increased demand for police, ambulance and fire and rescue services is expected as a result of population increases and increased NRW.
- New residents are likely to contribute to increased demand for childcare, in the order of five long day care places, and four extra out of school hours care places. Increased family support services may also be required.
- With a population increase of 270 people, there would be a demand for approximately four prep enrolments, 37 Year 1-10 enrolments, and up to seven Year 11-12 enrolments.
- Population increases will increase demand for settlement and community support services and recreational and cultural services.

- There is potential to increase volunteer resources through increasing the number of families living locally.
- The availability of Project employment will enhance the wellbeing of Project personnel and families through long term, well paid employment, affordable housing and well-serviced communities.

Local business and industry

- The Project's construction would contribute positively to local and regional businesses through demand for goods and services.
- The Project will offer long term opportunities for local, regional and Indigenous businesses to supply its operations.
- Construction, trades, equipment supply and consumables supply companies across Queensland (including the Isaac and Mackay LGAs) will benefit from supply to the Project.
- Project demands for personnel and supplies may exacerbate current skills shortages and contribute to a drain of labour from local businesses and services to the Project.

Cumulative impacts

- The magnitude and timing of cumulative impacts are uncertain, however construction of more than one major project in a similar timeframe as the Project is likely to strain social infrastructure (particularly health and emergency services) and may affect perceptions of community safety or traffic safety. If there is insufficient capacity to accommodate NRW, impacts on housing access and affordability are likely.
- Cumulative demands on Council infrastructure, community services, health and emergency services, schools, childcare and recreational infrastructure are likely as the result of multiple new coal mining operations commencing operation in the Isaac LGA. Significant demands on local housing stocks are possible, with potential for rent inflation and displacement of local residents and key workers.

SIMP

The SIA includes a Social Impact Management Plan (SIMP) which details how BMA will work with local and regional stakeholders to mitigate social impacts and maximise opportunities identified in relation to the Project. This SIMP includes five management plans for:

- Community and Stakeholder Engagement;
- Workforce Management;
- Housing and Accommodation;
- Health and Community Wellbeing; and
- Local Business and Industry Content.

A comprehensive monitoring, reporting and review framework is also provided as part of the SIMP.

1. INTRODUCTION

BM Alliance Coal Operations Pty Ltd (BMA) acts on behalf of the Central Queensland Coal Associates Joint Venture, which is owned 50:50 by BHP and Mitsubishi Development Pty Ltd. BMA is Australia's largest coal producer and metallurgical coal exporter. BMA owns and operates seven coal mines in the Bowen Basin as well as the Hay Point Coal Terminal near Mackay.

BMA is seeking environmental approvals for the Saraji East Mining Lease Project (SEMLP) (the Project), which is located within the Isaac Regional Council (IRC) Local Government Area (LGA), approximately 30 km north of Dysart and approximately 167 km south-west of Mackay in Queensland. This Social Impact Assessment (SIA) forms part of the Environmental Impact Statement (EIS) for the Project and was prepared by Elliott Whiteing Pty Ltd. during 2018-2019.

1.1 The Project

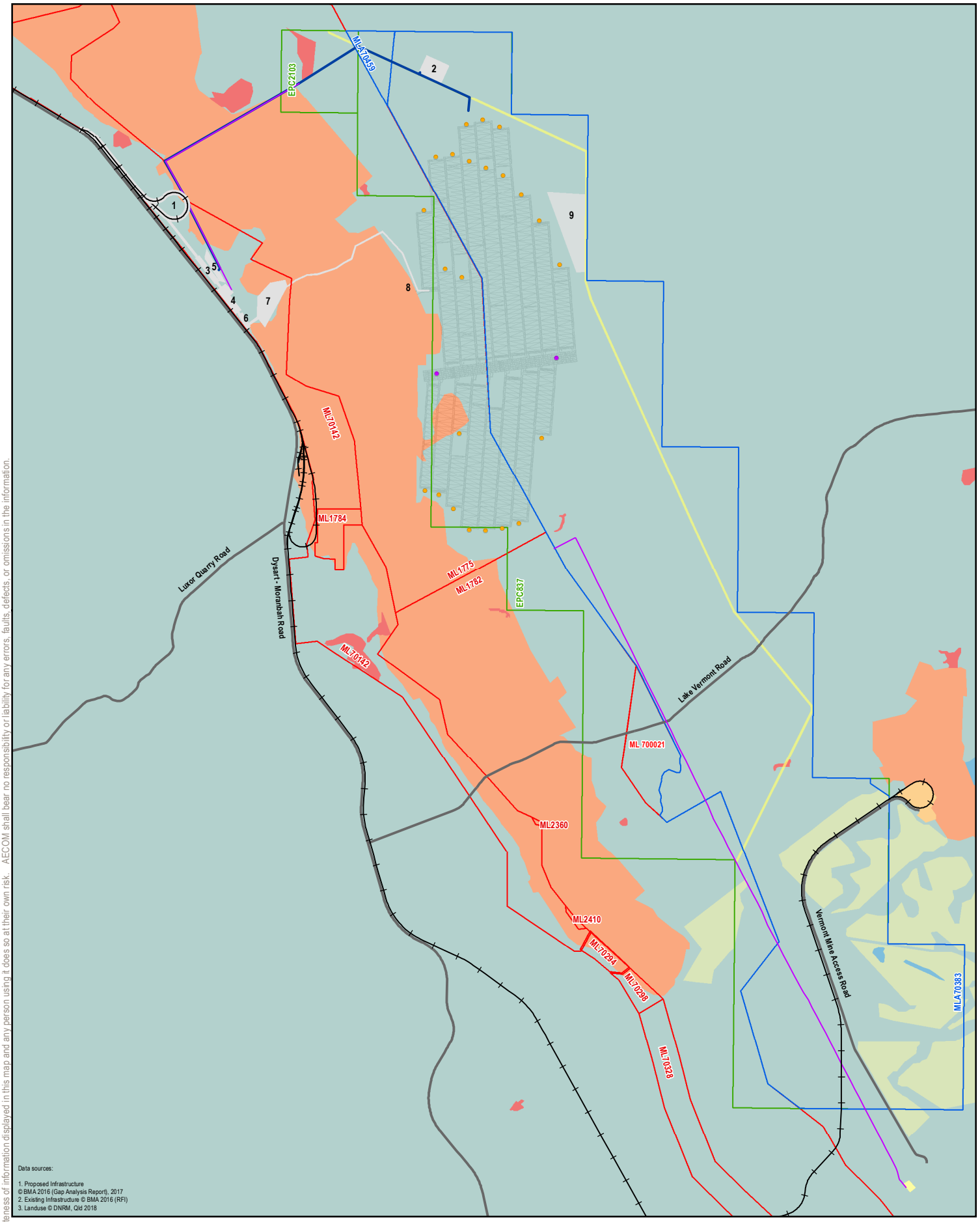
The Project is located adjacent to the existing Saraji Mine, which is operated by BMA on nine Mining Leases (ML)[1] under Environmental Authority (EA) Permit No. EPML00862313. The land on which the Project is proposed to be developed is owned by the Central Queensland Coal Associates Joint Venture, which owns BMA. The Project is located within the Isaac Regional Council (IRC) Local Government Area (LGA).

Figure 1 shows the Project layout in relation to context with surrounding land uses. The Project would involve:

- a greenfield underground coal mine to be developed on Mining Lease Application (MLA) 70383, commencing from within Saraji Mine ML 1775;
- production of up to eight million tonnes per annum (Mtpa) of product coal for the export market over at least 20 years;
- a new Coal Handling and Processing Plant (CHPP), run-of-mine (ROM) stockpile and coal stockpile pads located on ML 70142, and a new Mine Infrastructure Area (MIA) located on ML 1775;
- a conveyor system to deliver ROM coal from the underground portal to the CHPP, and product coal to the rail loading facilities, located over ML 1775 and ML 70142;
- dewatered tailings and reject disposal within spoil on the Saraji Mine;
- a new rail spur and balloon loop and signalling system located on ML 70142;
- gas and water collection networks and access tracks across the underground mine footprint across ML 1775 and MLA 70383; and
- relocation of the existing Vermont water pipeline and powerline into a new infrastructure and transport corridor to the eastern boundary of MLA 70383 and northern boundary of MLA 70459.

The Project Site encompasses approximately 11,427 hectares (ha) of land. Mining and the infrastructure required to support the Project is not proposed within the full extent of the Project Site with direct impacts constrained to a smaller area of some 3,541 ha within MLA 70383, MLA 70459, ML 70142 and ML 1775.

[1] ML 1775, ML 70142, ML 1784, ML 1782, ML 2360, ML 2410, ML 70294, ML 70298 and ML 70328



Data sources:

1. Proposed Infrastructure
© BMA 2016 (Gap Analysis Report), 2017
2. Existing Infrastructure © BMA 2016 (RFI)
3. Landuse © DNRM, Qld 2018

LEGEND

- Flare
- Vent
- Public Road
- Existing Railway
- 66kV Powerline
- Pipeline
- Rail Loop

QLUMP Secondary Land Use

- Other minimal use
- Grazing native vegetation
- Cropping
- Utilities
- Transport and communication
- Mining
- Reservoir/dam
- Underground layout (optimised)
- Transport and Infrastructure Corridor
- Surface Infrastructure

Mining Tenement

- Exploration Permit Coal (EPC)
- Mining Lease (ML)
- Mining Lease Application (MLA)

1. Rail Loading Balloon Loop
2. Process Water Dam
3. Product Stockpiles
4. CHPP
5. Raw Water Dam
6. ROM Pad
7. Future MIA
8. Conveyor
9. Construction Village

N

Figure 1
Project Layout and Surrounding Land Use

Saraji East Mining Lease Project
Social Impact Assessment

0 0.5 1 2
Kilometres

Scale: 1:110,000 (when printed at A4)

Projection: Map Grid of Australia - Zone 55 (GDA94)

BHP

DATE: 24/04/2019 VERSION: 1

1.2 Workforce and accommodation

The Project is likely to employ up to 1,000 personnel during its construction, which is assumed for the purposes of this assessment to commence in Financial Year (FY) 2021.

The Project estimates that it will require up to 500 personnel at full operational development (assumed to be achieved by FY 2025). The Project's workforce and workforce management are discussed in Section 4.2. Existing local residents will be a key target for Project recruitment. Project personnel from other regions will be encouraged to settle locally, with housing and support arrangements available to support their relocation. Recruitment strategies and incentives for new residents to settle locally are also outlined in Section 4.2.

The Project will be a new, substantial and long-term source of supply opportunities and other Project-generated activity for businesses in the Isaac and Mackay-Isaac-Whitsunday Region. This is discussed in Section 4.5.

A new workforce accommodation village (WAV) may be needed to support the Project's construction stage, and would be located on the eastern edge of MLA 70383 (refer Figure 1).

BMA had proposed to seek approval for a WAV for the operations phase to accommodate non-local personnel who would commute from other regions, avoiding impacts on housing availability in the event that a sufficient number of workforce accommodation beds were not available when required. Following consultation with IRC and the Office of Coordinator-General (OCG), BMA is no longer pursuing this option as part of the EIS process. Housing and accommodation arrangements are discussed in detail in Section 4.3.

1.3 Legislative and statutory requirements

State legislation of relevance to the SIA scope is outlined below. The Project has also been determined as a 'controlled action' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) under controlling provisions for listed threatened species and communities, and a water resource. In considering potential impacts on matters of national environmental significance, the Minister for the Environment is required to consider the social and economic impacts of the project, however there are no specific EPBC requirements for the SIA.

1.3.1 Environmental Protection Act

The Project will be assessed under the *Environmental Protection Act 1994* (EP Act) which is administered by the Queensland Department of Environment and Science (DES).

The EP Act's objective is to 'protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains ecological processes (ecologically sustainable development)'. The EP Act and its associated regulations and policies (Air, Noise and Water) provide a regulatory framework for integrated management of activities with the potential to affect the environment, which includes:

- '(a) ecosystems and their constituent parts, including people and communities; and
- (b) all natural and physical resources; and
- (c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and

- (d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c)'[2].

On 24 May 2013, BMA applied for a new site-specific environmental authority (EA) for coal mining (under the EP Act) with the former Department of Environment and Resource Management (DERM) (now DES). On 25 June 2013, DERM issued a Notice of Information Request for the EA application, requiring an environmental impact statement (EIS).

In 2017, BMA recommenced the assessment and finalisation of environmental approvals for the Project, and the final Terms of Reference (TOR) for the EIS were issued to the proponent on 2 June 2017. The SIA has been conducted in accordance with the TOR, as shown in Table 1.

Table 1: Terms of Reference

ToR	Requirement	Report section
Objective and performance outcomes	The construction and operation of the project should aim to: • avoid or mitigate adverse social and economic impacts arising from the project • capitalise on opportunities potentially available to affected communities.	This document (SIA) Section 6 (SIMP)
Information requirements - 8.10.1	Conduct a social impact assessment (SIA) in accordance with the Coordinator-General's Social impact assessment guideline (July 2013) and the Coordinator-General's Social impact assessment guideline (draft) (October, 2016) or the guideline in place at the time of delivery of the SIA. The SIA should be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General (OCG), Department of State Development, and describe the likely social impacts (positive and negative) on affected communities. The proposed mitigation measures are to be discussed. Should the Strong and Sustainable Resource Communities Bill 2016 (SSRC Bill) be passed, the proponent must meet all requirements of the legislation that apply to the project.	This document (SIA)
Appendix 3 Matters to be addressed in the social and economic assessment	Information requirements The SIA should include: a) a profile of key stakeholders b) a social baseline study of potentially impacted communities within the SIA study area c) an overview of state government legislation and policies and priorities which complement the mitigation measures for the project's social impacts d) an explanation of sources used to gather information and analysis methods used. Discuss rationale for both primary and secondary data e) a description of how the potentially impacted communities and affected stakeholders/other interested were engaged and consulted with during the development of the SIA	 Section 2.5 Section 3 Section 1.3 Section 2.3 Section 2.3.3 and 2.6

[2] Queensland Government (Office of Queensland Parliamentary Counsel). 2018a. Environmental Protection Act 1994 - Part 8.

ToR	Requirement	Report section
	f) identification of potential social impacts and their likely significance, including duration g) the proponent's proposed enhancement and mitigation/management measures h) details of the proponent's proposed monitoring and reporting framework	Sections 4 and 5 Section 6 Section 7
	Social impact assessment study area Define the project's SIA study area (including the local, district, regional and state level as relevant), taking into account the:	
	a) potential for social impacts to occur	Section 2.7
	b) location of other relevant projects (existing or proposed)	Section 3.1.6, 4.6
	c) location and types of physical and social infrastructure, settlements and land use patterns	Section 3.1
	d) social values that might be affected by the project including integrity of social conditions, liveability, social harmony and wellbeing and sense of community	Section 3.3
	e) Indigenous social and cultural characteristics, such as native title rights and interests, and cultural heritage.	Section 3.1.1, 3.3.2
	Undertake a targeted baseline study of the people residing within the project's SIA study area, based on qualitative, quantitative and participatory methods, supplemented by community engagement processes and primary data collection reference relevant data contained in local and state government publications,	Section 3
	The baseline study, assessment of potential social impacts and development of appropriate mitigation measures and management plans should be informed by an inclusive and collaborative community and stakeholder engagement process commencing at an early stage of the EIS process, and including consultation with a broad range of stakeholder groups	Section 2.3.3
	The community and stakeholder engagement process should be adequately described and documented in the EIS report.	EIS Chapter 19
	Assess and describe the type, level and significance of the project's social impacts (both negative and positive) including sufficient data to enable affected local and state authorities to make informed decisions about the project's effects.	Section 4
	Impact assessment should include an assessment of the potential scope and significance of impacts at the local and regional level	Section 5
	The impact assessment should also evaluate and discuss the potential cumulative social impacts resulting from the proposed project in combination with other existing or projects in advanced planning stages within the SIA study area. Key issues assessed should include: population workforce (construction and operation), workforce accommodation, local and regional housing markets, use of and access to community infrastructure, services and facilities and any existing legacy issue(s) or cumulative impact(s) which is/are not attributed to the present project proposal or advanced planned projects	Section 4.6

ToR	Requirement	Report section
	The impact assessment should include: • the impacts identified by the SIA process • impacted stakeholders • impacts, mitigation and management measures timing/timeframes • description of the mitigation and management measures • defined outcomes, and the performance indicators and targets to achieve the outcomes • monitoring and reporting framework • residual impacts (after mitigation/management) and how these will be addressed	Sections 5 and 7
	Management plans for the following are to be provided as part of the SIA:	Section 6
	• community and stakeholder engagement	Section 6.3
	• workforce management	Section 6.4
	• housing and accommodation	Section 6.5
	• local business and industry content	Section 6.7
	• health and community wellbeing	Section 6.6

1.3.2 Strong and Sustainable Resource Communities Act 2018

The Strong and Sustainable Resource Communities Act 2018 (SSRC Act) commenced on 30 March 2018. The SSRC Act sets out consistent mandatory requirements for SIA under the EP Act and the *State Development Public Works Organisation Act 1971* (SDPWO Act), to be regulated by the Queensland Coordinator-General.

The SSRC Act's object is to ensure that residents of communities in the vicinity of large resource projects benefit from the construction and operation of those projects. This is supported by three key elements which are:

- prohibition of 100 percent fly in fly out (FIFO) workforce arrangements on operational large resource projects;
- prevention of discrimination against locals in the future recruitment of workers; and
- the requirement for an SIA during the assessment process.

The SSRC Act applies to 'large resource projects' that have a 'nearby regional community'. A 'large resource project' is a resource project for which an EIS is required or that holds a site-specific EA under the EP Act, and has a workforce of 100 or more workers, or a smaller workforce as decided by the Coordinator-General[3].

[3] Queensland Government (Office of Queensland Parliamentary Counsel). 2018c. Strong and Sustainable Resource Communities Act 2017. Schedule 1: Dictionary

A 'nearby regional community' is a town any part of which is within a 125 km radius of the main access to the project, or a greater or lesser radius decided by the Coordinator-General, and has a population of more than 200 people, or a smaller population decided by the Coordinator-General[4]. Section 13 of the Act provides that the Coordinator-General must publish the name of each nearby regional community for each large resource project, and Section 12 also provides that the Coordinator-General must (during evaluation of the EIS) decide whether to nominate a large resource project as a project for which persons employed during construction phase are workers for the Act.

The SSRC Act requires that large resource projects provide a SIA that includes the matters provided for in the SIA Guideline as published on the Coordinator-General's website (see Section 1.3.3). Sections 9, 10 and 11 of the SSRC Act provide the regulatory framework for SIA, including:

- the matters SIA must provide for, with core matters including:
    - community and stakeholder engagement;
    - workforce management;
    - housing and accommodation;
    - local business and industry procurement; and
    - health and community well-being;
- the requirement to prioritise recruitment from local and regional communities and then recruitment of workers who will live in the regional community;
- the requirement for the owner or proponent to consult with the local government for the LGA in which the resource project is situated in preparing the SIA; and
- enforcement provisions for conditions stated by the Coordinator-General to manage the social impacts of a project.

1.3.3 Social Impact Assessment Guideline

The Coordinator-General's SIA Guideline was published on 30 March 2018. It requires that the SIA:

- address the core matters outlined and consider the full life cycle of the Project;
- be commensurate with the nature and scope of the Project, the sensitivity of the social environment and the likely scope and significance of the Project's social impacts;
- provide a meaningful engagement process including;
    - a profile of key stakeholders and a description of how the potentially impacted communities and stakeholders were consulted during the development of the SIA; and
    - inclusive and transparent engagement with stakeholder and communities, including a thorough process of engagement with Local Governments;
- be based on comprehensive social impact analysis, including the most current information on the affected communities and the Project;
- integrate with the EIS process, and include consideration of the social consequences of technical matters assessed in other parts of the EIS;
- include management measures that address potential negative impacts and capitalise on positive opportunities; and

[4] *Ibid.*

- provide a Social Impact Management Plan (SIMP) which documents the management measures and provides a practical basis for their implementation.

The SIA has addressed the SIA Guideline as prescribed in the TOR, including:

- consideration of the core matters;
- providing a comprehensive social baseline study of potentially impacted communities, including demographic indicators, community values, community history, community health and well-being, key industries, the local and regional workforce, community access to social facilities and services, housing and accommodation and details of other resource and infrastructure projects in the area;
- assessment of impacts and opportunities across all relevant issue categories, for each stage of the Project lifecycle, including cumulative impacts;
- identification of potential social impacts and their likely significance; and
- provision of a SIMP which details proposed enhancement and mitigation/management measures, and a monitoring and reporting framework.

1.3.4 Regional Planning Interest Act 2014

The *Regional Planning Interest Act 2014* (RPI Act) identifies and protects areas of Queensland that are of regional interest in order to 'manage the impact and support coexistence of resource activities and other regulated activities in areas of regional interest'[5].

Areas of regional interest include Priority Living Areas (PLAs), quality agricultural areas and strategic cropping land. The Project is not likely to directly affect PLAs, however social impacts relevant to urban areas designated as PLAs have been considered in this assessment.

1.3.5 Planning Act 2016

The *Planning Act 2016* (Qld) commenced implementation on 3 July 2017, establishing a new planning system which encompasses plan making, development assessment and dispute resolution. The majority of the Project Site is located within the former Broadsound Shire Council LGA with a small proportion of the Project Site, MLA 70459 within the former Belyando Shire Council LGA. Pending publication of a draft IRC Planning Scheme, the Broadsound Shire Planning Scheme, the Nebo Shire Planning Scheme and the Planning Scheme for the Belyando Shire remain in effect. Development activities which are within Local Government's authority include assessment of Development Applications for areas outside of Mining Leases and any planning scheme amendments required to facilitate the Project.

1.3.6 Queensland Government policies

The Queensland Government has several policy initiatives which support increased skills training, employment and supply opportunities. They include:

- Queensland Women's Strategy 2016-21;
- Women in Mining and Resources (WMIRQ);
- Queensland Youth Strategy 2016;

[5] Queensland Government (Office of Queensland Parliamentary Counsel). 2017a. Regional Planning Interests Act 2014

- Building our Regions;
- Jobs Queensland;
- Advancing skills for the future;
- Skilling Queenslanders for Work;
- Queensland Apprentice and Trainee support programs;
- Back to Work Regional Employment Package;
- Queensland Minerals and Energy Academy (QMEA);
- Advancing Aboriginal and Torres Strait Islander Education and Training (Consultation Draft);
- Accessing supply chain opportunities (ASCO); and
- Moving Ahead Strategy 2016-22.

Further details are provided in Annex B.

1.4 BMA policies

BHP 'Our Requirements' documents set the performance requirements for its businesses (including BMA) and assets with respect to community and stakeholder engagement, SIA and social investment. Under 'Our Requirements Communications, Community and External Engagement', BHP commits to taking steps to understand the social and economic environment in which it operates, and to working openly with its communities to contribute to social and economic development.

The Quality of Life Indicator (QoLi) Framework is based on four focus areas and a total of ten themes (as shown in Table 2) which guide BHP Coal's and BMA's community programs. The SIA has been developed with consideration of this framework and its key indicators.

Table 2: BHP Quality of Life Indicator Framework

QoLi Focus Area	QoLi Themes	Relevant Section
Communities	Population	Section 3.2
Capacity and Inclusion	Health and wellbeing Education and training Enhancing livelihoods Social inclusion	Section 3.5 Section 4.2.7 Section 4.2 Section 6.3.4
Governance	Transparency and anti-corruption Institutional strengthening	Section 7 Section 6.3 and 6.6
Environment	Climate change Biodiversity Environmental quality and amenity	Addressed in EIS Technical Reports

2. SIA SCOPE

This section describes the scope of the SIA, including:

- Project elements of relevance to the social environment;
- the location and characteristics of nearby communities, infrastructure, settlements and land use patterns;
- Native Title rights and interests;
- identification of potentially affected communities;
- the location of other projects which may contribute to cumulative impacts over time; and
- the focus for assessment.

2.1 Objectives

The objectives of this SIA are to:

- define the SIA study area, having regard to the Project's social context, the SSRC Act and the SIA Guideline 2018;
- identify SIA stakeholders and undertake an inclusive stakeholder engagement program to inform assessment of the social baseline, social impacts and community benefits;
- ensure the baseline, assessment and mitigations are focussed on the impacts and benefits that are likely and would affect the social environment;
- provide a comprehensive baseline of social conditions based on qualitative and quantitative data;
- provide a detailed assessment of the positive and negative impacts of the Project's activities on the social environment for each Project stage;
- evaluate the significance of impacts and benefits for social conditions, including sufficient information to enable Local and State agencies to determine effects on their operations or planning;
- develop mitigation measures and management plans to enable the Project to have positive social outcomes, including measures which create or enhance socio-economic benefits; and
- provide a monitoring and reporting strategy to support adaptive management of social impacts.

2.2 Nature of Project

The key Project elements which may affect the social environment include:

- the Project's location in relation to land ownership and the settlement pattern in the Project Site;
- the size and origin of the construction and operational workforces;
- workforce housing and accommodation arrangements; and
- Project relationships with local and regional suppliers.

The Project is located approximately 30 km north of Dysart, 60 km south of Moranbah, and 167 km south-west of Mackay in Queensland. The Project will be a new, substantial and long-term source of supply opportunities and other Project-generated activity for businesses in the Isaac and Mackay-Isaac-Whitsunday (Mackay SA4) region. This is discussed in Section 4.5.

The area surrounding the Project Site is representative of a broader region, which is generally highly modified for mining, grazing and agricultural activities. The topography of the Project site is generally flat to undulating plains with several defined creeks and Brigalow Scrub soils.

Existing land uses within and around the Project include:

- rural residential dwellings (homesteads);
- agricultural activities including cattle grazing, some dryland crops and farming infrastructure (access tracks, fences, stockyards and sheds);
- biophysical elements (such as the Isaac River and associated tributaries); and
- mining and coal exploration activities.

2.3 Methodology

2.3.1 Literature review

A review of relevant recent research, local, regional and State plans and policies, and social impact assessments relevant to the SIA study area was undertaken. Research findings were incorporated in relevant sections as referenced.

2.3.2 Scoping

The SIA scoping process considered SIA requirements, the Project's location, the settlement pattern and the characteristics of local communities and regions as detailed in Sections 2.4 and Section 3.

2.3.3 Stakeholder engagement

The purpose of SIA engagement is to ensure that directly affected stakeholders and other community members have the opportunity to provide informed input to assessment. SIA engagement principles are shown in Table 3.

Table 3: SIA engagement principles

Principles	How achieved
SIA is informed by the views of directly affected stakeholders	Inputs from stakeholders who may be affected by the Project's impacts or benefit from Project opportunities are represented in the SIA.
SIA engagement is inclusive of all interested stakeholders	Access to SIA engagement was available and accessible through factsheets and feedback forms, SIA community workshops, on-property meetings with landowners, and BMA's communication channels (i.e. free call phone and email).
Stakeholders are enabled to provide informed inputs to the SIA	Stakeholders were provided with access to information about the Project through face to face, mail-based and telephone options, and were provided with various options for participation.

BMA undertakes regular engagement with residents, Traditional Owners, community organisations and other stakeholders in Dysart and Moranbah, and participates in a range of community events and networks. BMA Communities team members are also involved in a variety of community and industry forums and initiatives to address local community priorities. Data from BMA's consultation activities have been used to inform the SIA. BMA has undertaken specific consultation with IRC, State agencies and a range of other stakeholders as part of the EIS.

SIA-specific engagement commenced with identifying stakeholders and stakeholder groups, which included consideration of:

- the Project's location in relation to local landowners, who may be directly affected by the Project's construction or operation, as identified by land use mapping;
- the Project's location in relation to local communities, as identified by considering which communities were likely to experience significant impacts (see Section 2.4);
- Native Title in the Project area, as confirmed by the National Native Title Tribunal;
- community organisations who have experience with mining projects and knowledge of community needs in Moranbah, Dysart and Middlemount, identified through experience in the region and desktop analysis; and
- government agencies for whom service demands or planning challenges may change, identified by scanning the services (health, emergency, education and community) which may be affected by project demands or population increases.

The SIA engagement process included meetings with the Office of the Coordinator General (OCG) and IRC to seek feedback on the SIA scope, and consultation with the IRC, community members and organisations, State agencies and businesses to:

- verify and supplement the research and analysis undertaken for the social baseline;
- discuss the Project's potential impacts and benefits; and
- obtain input to the impact assessment and mitigations.

Stakeholder engagement was promoted through letters and emails to 187 stakeholders inviting them to participate in the SIA. Approximately 500 fact sheets and 400 feedback forms were distributed through the SIA workshops, stakeholder meetings, and at IRC offices in Dysart, Middlemount and Moranbah. The SIA team also telephoned approximately 40 key stakeholders including community organisations, government agencies, and business organisations to encourage their participation in SIA workshops and/or through the feedback form process.

Workshops were held in central locations within each town. Workshop participation included 25 community members and service representatives (8 people in Moranbah, 14 people in Dysart and three people in Middlemount).

Interviews were offered to interested stakeholders who could not attend the workshops, and were taken up by four organisational representatives.

Four people returned feedback forms, all of which expressed support for the Project, and emphasised the importance of local employment and use of local housing.

Local community members have considerable experience with coal mining proposals and the impacts and benefits of coal mines and as such have good capacity for informed involvement. The lack of participation by the broader community e.g. through feedback forms or at workshops is likely to be attributable to consultation fatigue, as community members and organisations have seen what was described as 'a passing parade' of projects in recent years, and also to local communities' general support for new mining projects, as confirmed by SIA stakeholders including IRC.

Stakeholder engagement has informed the SIA as follows:

- the scope of the SIA was informed by the key issues raised in consultation with IRC and OCG;
- the social baseline has taken account of community views on issues such as use of land in the Project areas, community values, housing availability and social infrastructure access;

- the impact assessment has taken account of stakeholder views on e.g. the desirability of new local employment, increasing local populations, and demands on government and community services; and
- the mitigation strategies have taken account of community priorities for locally-based employment, investment in community development, and housing provision to support increased local settlement.

Stakeholders and SIA engagement mechanisms are summarised in Table 4.

Table 4: SIA Engagement Stakeholders and Engagement Strategies

Stakeholders	Engagement Strategies
Office of the Coordinator General and Department of Environment and Science	OCG Meeting (March 2018) - SIA scope and process Provision of SIA scope for DES review (April 2018) Provision of preliminary draft SIA for OCG review (March 2019) Provision of draft SIA for DES review (July 2019)
Landholders	On-property meetings with directly affected landholders (June 2018)
IRC	Meeting 1 (June 2018) – Discussion of SIA study area, matters to be addressed and issues of importance to Council (see Section 2.6) Meeting 2 (July 2019) – presentation and discussion of draft SIA and SIMP
Barada Barna people	SIA enquiry framework provided for BMA meeting with BBAC (July 2018)
Local community members and businesses	Community information about the Project and SIA (June 2018) (fact sheets and feedback forms) Local community and business workshops (June 2018) in Moranbah, Dysart and Middlemount
Social and health infrastructure providers	Community workshop participation (late June 2018) Phone interviews (July 2018)
Government agencies	Workshop participation (June 2018) • Moranbah Hospital • Dysart Police • Middlemount Community School Interviews (June-July 2018) • Moranbah State School • Moranbah East State School • Moranbah Police • QFES, Mackay Country Command

2.3.4 Social baseline

Investigations undertaken to develop the social baseline included research and analysis of:

- the study area's history and settlement pattern;
- community values in the study area;
- population size, composition and growth;

- housing and accommodation availability and affordability;
- community health and safety indicators;
- employment, labour force and skills;
- business and industry in the region; and
- social infrastructure provision.

Statistical analysis and description of the potentially impacted communities was supported by a wide range of data and information sources as referenced.

The Australian Bureau of Statistics (ABS) statistical geography for potentially affected communities and the broader region is shown in Table 5. State Suburbs, which include urban centres and rural localities, were chosen as the smallest statistical area for analysis. Data for Statistical Area 2 (SA2s) have also been used where data were not available at State Suburb level. The Moranbah SA2 aligns to the Moranbah State Suburb (SSC), and the Broadsound-Nebo SA2 includes Dysart, Middlemount, Coppabella, Nebo and Glenden.

Select data are also provided for Mackay LGA with respect to population growth, which would support workforce availability. The broader region, which is most likely to benefit from or be impacted by labour participation or Project supply chains, includes the Mackay-Isaac-Whitsunday Region (Mackay SA4) and the Central Queensland SA4.

Table 5: Statistical Geography

Local communities	ABS Statistical Geography
Moranbah	Moranbah State Suburb and Moranbah SA2 (equivalent)
Dysart	Dysart State Suburb
Middlemount	Middlemount State Suburb
Broadsound-Nebo SA2	Broadsound-Nebo SA2
Isaac Regional Council LGA	Isaac LGA
Mackay Regional Council	Mackay LGA
Regional Communities	
Mackay-Isaac-Whitsunday Region	Mackay SA4
Central Queensland Region	Central Queensland SA4

Source: Australian Bureau of Statistics. 2011 and 2016 ASGS Statistical Geographies

2.3.5 Assessment

All potential social impacts and benefits were considered in terms of whether they were likely to make positive or negative changes to local and regional social conditions.

Quantitative modelling of social impacts was undertaken in respect to population changes, housing demands, employment opportunities and social infrastructure demands. Inputs to the modelling include ABS population estimates, Queensland Government Statisticians' Office (QGSO) population projections, housing and employment characteristics, and assumptions regarding the local/regional mix of future employees and contractors.

For impacts on community values such as local character and community cohesion, stakeholder views were considered, and professional judgement applied in relation to the likelihood of changes to social values.

The SIA includes cumulative social impact assessment, with a focus on population impacts, housing, social infrastructure, community values and employment opportunities.

At the conclusion of the impact assessment stage, a two-stage significance assessment was undertaken. Firstly, the significance of impacts and benefits to local communities was considered, having regard to the likelihood and consequence of impacts, existing social conditions and stakeholder inputs. The effect of BMA's commitments and the management measures recommended in the SIA were then considered, and a final significance assessment was undertaken to identify residual impacts.

2.3.6 Social Impact Management Plan

The Social Impact Management Plan (SIMP) documents the measures identified in the assessment with respect to management of social impacts and enhancement of opportunities, and includes a monitoring framework which will support adaptive management of social impacts. The SIMP includes five sub-plans for:

- Community and Stakeholder Engagement;
- Workforce Management;
- Housing and Accommodation;
- Health and Community Wellbeing; and
- Local Business and Industry Content.

A monitoring program is provided including outcomes sought, how management of the impacts will be monitored and reported, and the timing and frequency of monitoring.

2.4 Study area

The Project is a 'large resource project' under the SSRC Act. The Project's main access would be located approximately 28 km north of Dysart off Dysart-Moranbah Road. In defining the SIA study area, all potentially affected communities with more than 200 people which are within a direct 125 km radius of the Project's access points have been considered.

2.4.1 Considerations

Considerations for identifying the SIA study area and assessment focus are outlined below.

Native title rights and interests

The Project is within the traditional country of the Barada Barna people, whose native title covers approximately 3,233 km^2 of land and waters south-west of Mackay and north-west of Rockhampton,

including most of the Isaac LGA. Of this, approximately 2,699 km^2 is Barada Barna country and a further 530 km^2 is shared between the Barada Barna People and Widi People[6].

All of the land titles underlying MLA70383 consist of either Estates in Fee Simple or Leasehold land which constitute "previous exclusive possession acts" pursuant to the *Native Title Act 1993* (Cth) and extinguish native title. No additional surface rights are required for the existing Saraji MLs, and no activities are proposed for areas where surface rights are not held.

BMA considers that the mining lease application area is over land tenure that is not subject to Native Title as indicated in the ML70383 application.

However BMA has discussed the Project with the Barada Barna Aboriginal Corporation (BBAC) and will include the Project as part of its portfolio for ongoing discussion with BBAC. The SIA discusses Indigenous equity, labour force capacity and Indigenous people's relationships to the Project, which includes business relationships.

Landholdings

Land holdings within the Project Site include:

- Meadowbrook Homestead; and
- Lake Vermont Homestead.

A further five homesteads (Tay Glen, Saraji 1, Saraji 2, Saraji 3, Kyewong) are located in the vicinity of the Project Site. BMA has commercial agreements with owners of Saraji Homestead 2 and Saraji Homestead 3. Discussions of a co-existence agreement between the owner of Saraji Homestead 1 and BMA have commenced. BMA owns both Meadowbrook and Lake Vermont. Relocation of the existing Vermont water pipeline and powerline into a new infrastructure and transport corridor would not affect any private properties.

The extent of impacts on the amenity or other social values of private properties is discussed in Section 4.1.3.

Settlement pattern

The location and function of communities near the Project influence the likelihood that they will experience Project impacts or benefits.

During the late 1960s to the early 1980s, four towns were established in the Isaac LGA to support coal mining operations. They include:

- Moranbah, approximately 55 km north of the Project, which is the major urban centre in the Isaac LGA, and was established as a home community for the Peak Downs and Goonyella Riverside Mines, and now also accommodates personnel and families associated with other nearby mines;
- Dysart, approximately 28 km south of the Project, established as a home community for Saraji Mine and Norwich Park Mine (which is currently in care and maintenance);
- Middlemount, approximately 80 km south of the Project, which is the home community for personnel at the Middlemount Mine (owned by Middlemount Coal Pty. Ltd.) and the Grasstree Mine owned by Anglo Coal; and

[6] Queensland Cabinet & Ministerial Directory. 2016.

- Glenden, approximately 115 km north east of the Project, which is a home community for the Byerwen Mine (owned by Qcoal) and the Newlands Mine (owned by Glencore), and is near the Burton Mine, (owned by the Lenton Joint Venture.)
- These towns have very strong identities as mining communities, but also act as local centres for surrounding property owners.

Mining towns in the Central Highlands LGA at a further distance from the Project include:

- Tieri, approximately 90 km south of the Project, which was developed by Mount Isa Mines in the early 1980s and accommodates Oaky Creek mine personnel; and
- Blackwater, approximately 150 km south of the Project, which was developed by the Utah Development Company in the late 1960s to service the Blackwater Mine, and services several nearby mining operations.

Other towns which are within a 125 km direct radius of the Project include:

- Coppabella, approximately 54 km to the Project's north, whose primary role is as a home community for railway personnel and their families;
- Nebo, approximately 90 km to the north, which has a long history as a rural centre and is the closest community to BMA's South Walker Creek Mine and Anglo American's Coppabella Mine;
- Clermont, which has a strong rural and gold mining history, and is a home community for personnel at Glencore's Clermont Mine;
- Capella, a long-established rural and railway town, which also houses Glencore's Oaky Creek mine personnel; and
- Emerald, at approximately 122 km south west of the Project, is the municipal centre of the Central Highlands LGA. Emerald has a strong rural history but also a long association with BMA's Blackwater Mine, the Gregory and Crinum Mines (currently in care and maintenance), and mines operated by other companies.

A description of the settlement pattern within the SIA study area is provided in Section 3.1.

Housing and social infrastructure capacity

Housing choice and social infrastructure capacity are key factors for families considering relocation to the Isaac LGA.

Isaac LGA communities have experienced significant pressures on housing stocks over decades as the result of growth and contraction in the mining industry, whilst local social infrastructure is challenged by population fluctuations, changing social trends and mining industry fluctuations. At 2016, Isaac LGA had a high percentage of unoccupied dwellings but with the increase in mining industry activity over the past two years, percentages of unoccupied dwellings are likely to have declined.

Whilst each town except Coppabella has a private rental market, mining companies own large percentages of housing stock in each of the mining towns, with implication for access by other parties.

Moranbah, with 3,659 dwellings offers a broad range of housing choices and has the largest social infrastructure capacity of all local towns, some of which services the surrounding region. Dysart with 1,385 dwellings is the second largest town in the Isaac LGA, with a commensurate provision of local level social infrastructure (e.g. primary school, high school, pool, a small hospital, and family support services) but less housing diversity in housing types.

Middlemount (870 dwellings) also provides local-level infrastructure including a merged primary-secondary school, pool and community centre. Middlemount was originally planned for up to 4,000 residents[7], so its community centres have excellent capacity relative to the population size, however the population does not support a high level of local service provision.

Nebo (with 373 dwellings) has a limited range of social infrastructure (e.g. a school and community centres, but a visiting doctor, and no childcare). Coppabella is a small town at 89 dwellings, most of which are rented from the rail network operator or owned by residents, but has a primary school and a good range of recreational infrastructure oriented to families who live there.

Of the towns further from the Project:

- Tieri (513 dwellings) and Glenden (583 dwellings) are smaller than the other mining towns, and have basic local-level social infrastructure;
- Capella (528 dwellings) and Clermont (1,078 dwellings) have a good level of social infrastructure commensurate with their longer history and role as small rural centres; and
- Emerald as the Central Highland's LGA's largest town had 5,900 dwellings and a very good range of local and district social infrastructure, partly developed through its role as a longstanding rural centre.

Non-local personnel are likely to stay in WAVs nearest to the Project, which will include WAVs near Moranbah, Dysart and Coppabella, and are likely to make demands on social infrastructure in Moranbah and Dysart.

Labour force capacity

Local towns that were established to support mining operations have appropriate labour force strengths. As indicated by the 2016 Census of Population and Housing, coal mining employs more than 50% of the labour force in Dysart, Middlemount, Glenden and Tieri, and almost 40% of Moranbah's labour force (reflecting its broader economy and service provision levels). Towns with a more traditional rural focus have lower percentages employed in mining e.g. 19% in Capella, 18% in Emerald, 25% in Nebo and 28% in Clermont.

BMA has owned and operated coal mines near Moranbah and Dysart for 45 years, and is the Isaac LGA's largest employer. This long term relationship is likely to encourage local residents to seek employment and supply opportunities with the Project. There is also the possibility that BMA employees could transfer from its other sites to the Project subject to operational requirements.

Unemployment rates are traditionally very low in the Isaac LGA. The potential labour supply includes people registered as unemployed, people who work part-time but need more hours, contractors and discouraged job seekers, so there may be more labour availability than the data indicates.

Regardless, recruitment of skilled mining workers is highly competitive. The Project is likely to draw personnel from across Queensland, but would be particularly attractive to residents in the MIW and Central Queensland regions. Information about labour force capacity is provided in Section 3.7.

[7] Rolleston, F. 1983.

Business capacity

Moranbah by virtue of its size and the availability of industrial land has a broad range of businesses, but other Isaac LGA towns also have businesses oriented to the mining industry and associated household expenditure. Mackay is the Mackay Isaac Whitsunday (MIW) Region's principal centre and has strong links to mining communities in the Bowen Basin. Mining operations in the northern Bowen Basin draw heavily on mining-oriented businesses in Mackay, and the SIA therefore includes a focus on businesses in the Isaac LGA and the MIW region.

Cumulative impacts

The interaction of impacts from multiple projects has potential to affect access to local housing and accommodation, social infrastructure, and local values such as the family-friendly nature of local communities. Local towns and regions have some 50 years' experience with the cyclical nature of the coal industry and its effects on local towns, however experience shows vulnerabilities to cumulative impacts. The key drivers for cumulative social impacts in the Isaac LGA are the number and distribution of additional residents and NRW induced by multiple projects. Cumulative impacts on local and regional labour force capacity are also likely.

Projects with a footprint within the Isaac LGA which may be constructed and operate within the same timeframe as the Project are summarised in Section 4.6. Proposed projects, if they proceed, are likely to see significant demands for skilled mining and construction labour, and for housing and accommodation in Moranbah and Dysart.

Fatigue Management

BHP's Fatigue Management Policy requires that the maximum working time per 24 hours will not exceed 14 hours, inclusive of travel time[8]. As shifts will be of 12 hours' duration, this requires a driving time to and from work of less than one hour. This is aligned with the Department of Natural Resources and Mine's (DNRM) Guidance Note for Fatigue Risk Management which notes that commute times of one hour, with a 12 hour shift length, can influence the opportunity for sleep and fitting in other daily activities[9].

The requirement for daily commuting to not exceed two hours in total would not preclude people from other towns in the Isaac LGA or other LGAs seeking and obtaining Project employment. However, it would make it more likely that towns within a one hour commute will accommodate Project personnel.

Table 6 shows the approximate distance, driving distance and driving times between the Project's main access and communities within a direct 125 km radius. Driving distances were estimated using Google maps, using the shortest routes. The towns of Dysart, Moranbah, Middlemount and Coppabella are within a one hour driving radius of the Project.

[8] BHP SRM PLN Fit for Work - Personal Fatigue Management Plan V.1.1

[9] Department of Natural Resources and Mines, 2013.

Table 6: Driving distances to the Project

Communities	Approximate direct radius (km)	Driving distance (km)	Driving time
Dysart	28	30	20 min
Moranbah	55	58	40 min
Middlemount	70	91	1 hr
Coppabella	54	79	50 min
Tieri	80	105	1 hr 7 min
Capella	90	103	1 hr 13 min
Clermont	85	113	1 hr 16 min
Nebo	90	131	1 hr 21 min
Glenden	115	172	1 hr 59 min
Carmila	120	244	2 hrs 46 min
St Lawrence	120	301	3 hrs 25 min
Emerald	122	155	1 hr 51 min

Source: Google Maps. 2018.

2.4.2 SIA study area

The SIA study area has been defined following the considerations outlined in Section 2.4.1.

Potentially affected communities

Communities located nearest to a project have the highest potential for direct social impacts and benefits, whilst supply chain considerations such as labour force origin and businesses' capacity to supply the Project are relevant to the broader region.

The Isaac LGA is the primary LGA for consideration in the SIA. Dysart, Moranbah and Middlemount are considered most likely to be impacted by the Project, as:

- their labour forces have significant strengths in the mining industry and are likely to supply the Project;
- personnel and their partners relocating from other regions will choose to live in towns which have better housing choice, housing availability and social infrastructure provision;
- Project employment is likely to be attractive to personnel in towns within a shorter travel time;
- non-local personnel staying in WAVs are likely to access services and businesses in Moranbah and Dysart; and
- the Project's proponent has established relationships with the towns of Moranbah and Dysart, which maximise community benefits and minimise social impacts.

All suitably skilled people, wherever they live, will be eligible to seek Project employment however personnel whose work day would extend beyond 14 hours (including a 12 hour shift and driving time) would need to sleep within a one hour driving time when they are rostered on. This will reduce the

likelihood of impacts such as population increases, housing demand, and social infrastructure requirements in towns other than Moranbah, Dysart and Middlemount.

The IRC describes Coppabella as a 'closed town' that exists only for the railway[10] and there is little to no vacant housing available. It is unlikely that Project personnel will seek to move to or access services or businesses in Coppabella. Prospective employees from Coppabella could commute to the Project daily so there may be some benefit to individuals, but the Project is unlikely to have social impacts in Coppabella, which is not considered further in the SIA.

Nebo, Tieri, Capella, Glenden and Clermont may also have capacity to supply labour and supplies to the Project, but are unlikely to experience significant social impacts given a driving distance of one to two hours from the Project. Emerald also has strengths in the construction and mining sectors, but is almost two hours' drive away and is unlikely to attract Project personnel to live there, or experience other social impacts as a result of the Project.

On the basis of these considerations, the local communities on which the SIA will focus are shown in Table 7. Figure 2 shows the local communities in context with the Project and the broader region.

Table 7: SIA study area – proposed nearby regional communities

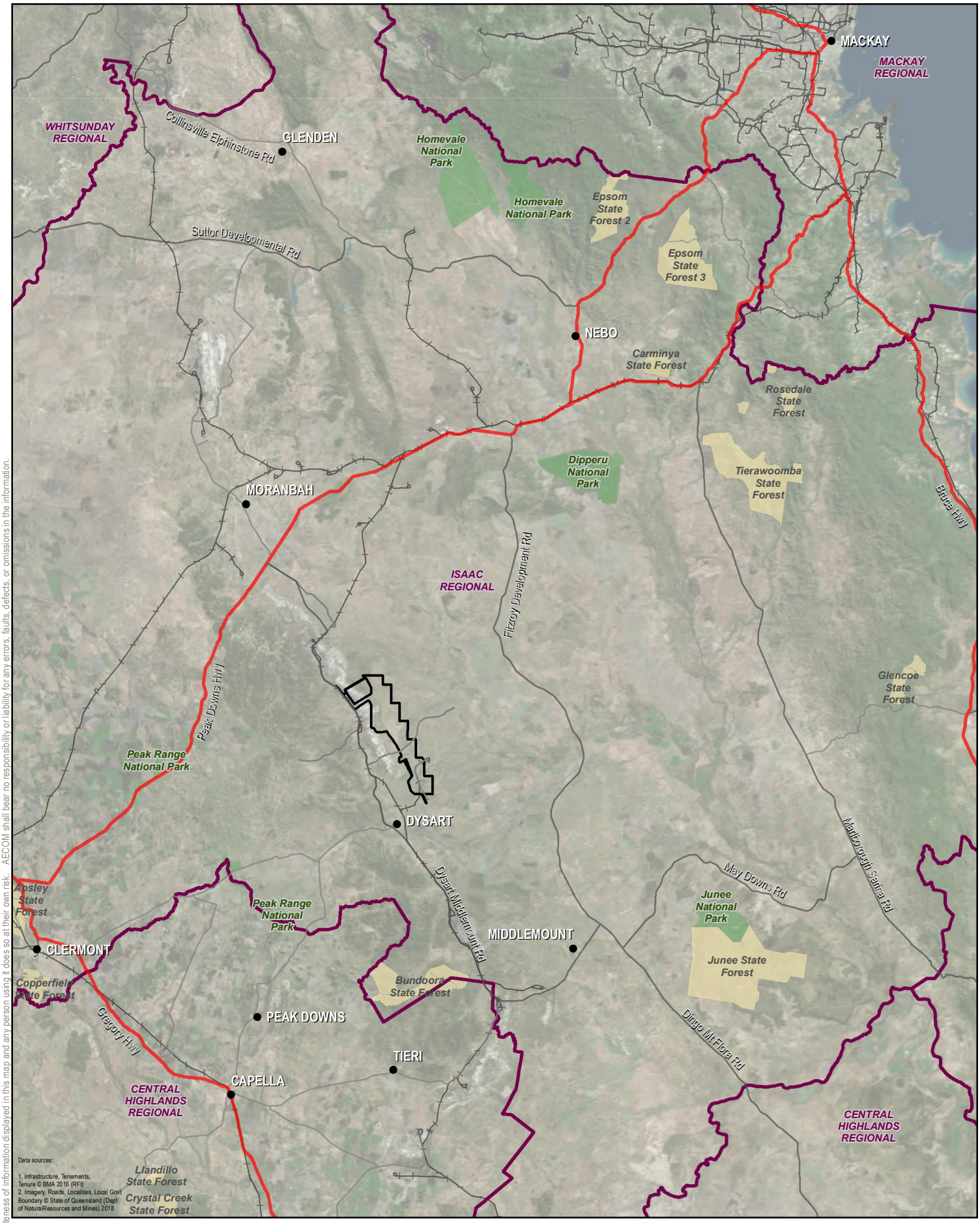
Community	2016 Population
Dysart	2,991
Moranbah	8,735
Middlemount	1,841
Isaac Regional Council LGA	20,940

Broader Region

Project labour will be sourced from other Queensland regions, but it will not be possible to identify potential impacts in other regions with any reliability before recruitment is completed. The Mackay Statistical Area 4 (which equates to the MIW Region) and the Central Queensland SA4 (which includes the Rockhampton, Banana, Central Highlands, Woorabinda, Gladstone and Livingstone LGAs) have considerable strengths in the mining and construction industries and are likely to be a source of Project labour. The SIA therefore includes a focus on labour force capacity in the MIW region and the Central Queensland region. Mackay, the MIW's regional centre, has considerable strengths in the mining and construction industries, and has been a long term provider of supplies and services to mining operations in the Bowen Basin. The Mackay LGA's labour force and business characteristics are addressed in the SIA.

The Project is likely to provide benefits to the State of Queensland in respect to royalties, taxes and employment opportunities over its 20-year life, as assessed in the Project's Economic Impact Assessment. Queensland has been used as the comparative area for analysis of social indicators and labour supply in the Project's local and regional communities.

[10] Isaac Regional Council. 2016.



AECOM does not warrant the accuracy or completeness of information displayed in this map and any person using it does so at their own risk. AECOM shall bear no responsibility or liability for any errors, faults, defects, or omissions in the information.

LEGEND

- Project Site
- Locality
- Rail Network
- Highway
- Major Road
- Other Road
- Local Government Areas
- National Park
- State Forest

N

Figure 2
Regional Context

Saraji East Mining Lease Project
Social Impact Assessment

0 4.25 8.5 17
Kilometres

Scale: 1:1,000,000 (when printed at A4)

Projection: Map Grid of Australia - Zone 55 (GDA94)

BHP

DATE: 3/10/2018 VERSION: 0

Filename: \\aubne1fp003\Projects\605X\60507031\4. Tech Work Area\4.99 GIS\02_MXDs\06 Environmental Impact Statement\L-1 Social Impact Assessment Report\60507031_G233_v0_A4P.mxd

2.5 Stakeholder profile

Stakeholders in the potentially affected communities have significant experience with the social impacts and benefits of mining projects, and also with the cyclical nature of the mining industry. As a result, they have a high capacity to provide informed input on potential social impacts and benefits, and how they should be managed.

Stakeholders have also experienced the demands of participating in assessment of multiple projects in the Isaac region over several years, leading to engagement fatigue, and some local property owners are dealing with requests from multiple companies and uncertainty about whether projects will proceed.

The SIA's key stakeholders, issues of relevance and relevant SIA sections are shown in Table 8.

Table 8:SIA Stakeholders and Key Issues

Stakeholder Group	Key Issues	BMA responses	Section
IRC	• Strong preference for maximising local employment opportunities through recruitment, housing and accommodation management, and relocation incentives • Concern regarding the transience of contract workers and consequent social impacts	Targeting recruitment towards Isaac LGA residents and those in the MIW region Providing housing to encourage local settlement of personnel	4.2 and 6.4 4.3
	• Limited rental housing availability • Availability of residential lots, however new housing investment is as yet limited • Requirement to demonstrate need for new WAV	Demonstration of need for WAV for construction personnel Deletion of proposed WAV for operational personnel from Project Commitment to provide housing for all new residential personnel	4.3, 6.5
	• Council's waste management facilities have limited capacity	Respect for constraints on Project use of waste management facilities	4.4.2
	• Residential and non-residential workforces impact on Council services including waste, water, roads and community facilities including childcare	Implementation of SIMP measures to prevent or manage impacts on services	4.4.2, 4.4.3
	• Local business opportunities to benefit from Project	Local Buying Program	6.7
	• Emergency management communications capacity inadequate	Consideration of shared value project for emergency management communications	4.4.3
	• Social licence to operate must be maintained	Business-wide focus on social licence and social value	6.3, 6.6

Stakeholder Group	Key Issues	BMA responses	Section
Landholders	• Difficulty recruiting suitably skilled employees • Noise (trucks and blasting) from Saraji Mine under adverse weather conditions • Maintenance of co-operative relationship with BMA to maintain agricultural land uses	Training initiatives which will reduce labour draw from other businesses Noise management strategies as outlined in the Project's EIS, Chapter 12. Ongoing cooperative arrangements	4.2.7, 6.3.4 4.1.3 4.1.2
Barada Barna people	• Cultural heritage protection • Availability of employment and training pathways for Indigenous people	Cultural heritage management strategies as outlined in the Project's EIS, Chapter 16. Employment and training strategies targeted to Indigenous people	 4.2.4, 6.4
Community members and groups – Moranbah, Dysart, Middlemount	• Increase in local apprenticeship and training opportunities employment opportunities required to retain local young people • Transient workforce does not contribute to community in the same way as permanent residents/families • Very limited rental housing availability in each potentially affected community • Housing impacts as the result of non-local contractor demands • Ageing population and need for support services to retain local seniors	Employment and training strategies targeted to local young people Permanent employment opportunities Provision of housing which encourages new residents to settle locally Investments in community facilities and partnerships	4.2.7 4..2 4.3.3 6.6
Local businesses	• Business activity in Dysart and Middlemount still depressed but with small signs of recovery, stronger in Moranbah • Value BHP Local Buying Program and look forward to Project opportunities • Increase population leads to increased expenditure and business vitality • Competition with mining operations for labour and skilled personnel is expensive and sometimes fruitless	Local Buying Program Training initiatives which will reduce labour draw from other businesses	6.7 4.2.7
Social infrastructure providers and community organisations (DCSG Inc; Emergency Long Term Accommodation; C&K Middlemount Community	• Cumulative impacts of mining industry growth on health and emergency services • Community services are stretched too thinly across multiple communities, which would be exacerbated by population growth • Recruitment and retention of community services and government	Investments in community facilities and partnerships Service provision support through the newly constructed Moranbah Youth and Community Centre Provision of services within the construction WAV to reduce demands	4.4.3 6.6 4.3.3

Stakeholder Group	Key Issues	BMA responses	Section
Preschooling Centre; Dysart C&K Kindergarten; Moranbah District Support Services (MDSS), Hinterland Community Care)	staff • Increasing numbers of transient families have seen increased social and health issues (e.g. drug use and family violence) • NRW are inadequately considered in Government planning	on local services On request, joint advocacy with IRC for better funding for local and regional services, including increased health service funding, and, leveraging the proposed Regional Mining Community Infrastructure Fund	6.3.4
Government service providers (Queensland Health; Queensland Police Service; Queensland Ambulance Services; Queensland Fire and Rescue Service; Department of Education and Training; Middlemount C&K Kindergarten; Dysart State High School; Dysart State School; Middlemount Community School; Moranbah East State School; Moranbah State High; Moranbah State High School)	• School enrolments have increased in the last 18 months, however turnover is high, with higher numbers of students with more complex needs than previously • NRW numbers not captured in catchment population counts for service planning • Fluctuating demands from population cycles and multiple mining projects affect service capacity • Lack of service capacity for acute and ongoing mental health care needs • Skill gaps are emerging with the increase in mining employment • Health services workers experience violence in the workplace from some NRW and as a result of increased drug use • Indigenous training, employment and business opportunities need to be expanded • Fewer emergency resources are available in towns if they are required at mine sites. • Increasing demands on Hospital, GP and mental health services, as a result of both population increases and FIFO workers' demand	Advice to Government agencies on Project schedule and workforce ramp-up Joint advocacy with IRC for better funding for local and regional services Evidence-based community Investments addressing community priorities Training initiatives which will reduce labour draw from other businesses BHP Workforce Conduct Policy and withdrawal of employment for breaches Indigenous training, employment and business opportunities Support for local business capacity building through leveraging of Local Buying Foundation	4.4. 6.6 6.3.4 6.6 4.2.7 4.2.2 4.2.4 4.5

2.6 Engagement with Isaac Regional Council

BHP meets with IRC's Councillors and management staff every six months, to discuss issues of importance to local communities, Council and BMA. The meetings address:

- long-term partnership arrangements and overview of social investment within Council footprint, e.g. BHP provision of water to Moranbah, and the development of the Moranbah Youth and Community Centre;
- cooperative responses to current community issues, e.g. disaster recovery after cyclones and emergency communications capacity;
- mitigation of BMA's operational impacts on Council infrastructure e.g. alternative arrangements for waste disposal whilst Council's facilities are stretched;
- updates on BHP transformation projects;
- employment opportunities including apprenticeships and traineeships;
- key information from operating sites e.g: innovation and safety; and
- new mining projects.

Meetings to discuss the SIA with IRC were held in June 2018 and July 2019.

The first meeting discussed the draft scope of the SIA, current community issues and Council's priorities for the SIA. Key issues raised by Council are shown in Table 8 and centred on:

- ensuring that the SIA contains workforce management principles which ensure long term employment options are available to local residents, including young people wishing to enter the mining industry (addressed in Section 4.2.2);
- people have choices about commuting to work from local towns or from further afield (addressed in Sections 4.2.5 and 4.3);
- recognition of the need to maintain service capacity commensurate with the needs of both residents and NRW (addressed in Section 4.4.3);
- housing is available to support the settlement of new residents attracted by Project employment (addressed in Section 4.3);
- any requirement for a new WAV is justified (addressed in Section 4.3); and
- the SIMP review process incorporates Council's inputs (addressed in Section 7).

A second meeting was held in July 2019 to review the draft SIA findings and key SIMP strategies with Council. The discussion included:

- interest in the intentions for vacant land owned by BHP in Moranbah and Dysart (addressed in Section 3.4.4.);
- interest in the potential for use of BHP housing which is surplus to requirements to house key workers in Dysart and Moranbah, where rents are rising (addressed in Section 4.3.3 and 6.5.4);
- the need for joint advocacy to Queensland Health for increased services commensurate with the combined residential and non-residential population (addressed in Section 4.4.3 and 6.5.5);
- the expectation of increased contributions to existing community development initiatives, services and facilities (addressed in Section 6.3.5);
- the need for upskilling local workers in the context of coal industry mechanisation/automation (addressed in Section 4.2.7); and
- appreciation that Council's views in regard to e.g. workforce accommodation and local employment had been addressed in the development of the SIA.

2.7 Key matters

Key matters for assessment and their corresponding SIA sections are shown in Table 9.

Table 9: Key matters

Key Matters	SIA Section
Community and stakeholder engagement	
• Stakeholder profile and stakeholder views on the Project • Capacity of affected people to participate in community and stakeholder engagement • Consultation and agreements with Local and State agencies • Native Title rights and other interests held by Aboriginal and Torres Strait Islander people	2.5 2.3.3, 3.3.5 6.6 3.1.1, 3.3.2
• Profile of potentially impacted communities • Community culture, values and functions and access to cultural resources • Changes to existing land use pattern, settlement pattern or infrastructure provision/demand • Alignment with community and regional planning objectives	3.1.4 3.3 4.1, 4.4 8
Community and Stakeholder Engagement Plan	6.3
Workforce management	
• Projected workforce demand and composition (local, regional and other) by occupation, project stage and duration • Workforce health and wellbeing • Assessment of the likely availability pf personnel with relevant skills • Employment, training and development opportunities • Workforce management practices which prioritise recruitment of local and regional people and people who will live in regional communities • Potential for social/cultural disruption due to NRW influx • Provision of training, and employment for women, Indigenous people and people with a disability	4.2.1 4.2.8 3.7.6, 4.2.6 4.2.7 4.2.2 4.4.1 4.2.7
Workforce Management Plan	6.4
Population and Housing	
• Impacts on population size or composition • Details of proposed workforce accommodation facilities, including statement of need • Status of approvals regarding infrastructure, utilities and services • Analysis of the impact of the demand for housing from project workers and households • Changes to the local settlement pattern • impacts on local and regional housing availability, capacity, affordability and consequences of change to housing access • Impacts on low and moderate income households and workers in other industries	4.3.2 4.3.3 4.4.2 4.3.3 4.1.2 4.3.3 4.3.3
Housing and Accommodation Plan	**6.5**

Key Matters	SIA Section
Health and community wellbeing	
• Impacts on access to/quality of infrastructure, services and facilities including healthcare, emergency response, transport and utilities, education and childcare, and community support services	4.4.3
• Potential for impacts on community health (mental health or physical health, including changes to air quality, noise or water	4.4
• Potential for impacts on community safety, including exposure to hazards or risks	4.4.4
• Changes to livelihoods and potential for advantage/disadvantage	4.4.1
• Utilisation, access and control of natural resources	4.4.2
• Amenity impacts, cultural practices, community lifestyles or way of life, social character and community cohesion	4.1.3, 4.1.6. 4.1.7
• Level of on-site health services to be provided for workers, and effects on emergency services	4.2.8
• Effects on cohesion, social capital and social resilience	3.3.5
• Cumulative impacts on resources supporting community well-being	4.6
Health and Community Wellbeing Plan	6.6
Local business and industry procurement	
• Key industries in the region	3.7
• Profile of skills, services and materials required by the project	4.2.1
• Analysis of local and regional supplier capability and capacity	3.7.9
• Analysis of opportunities to enhance the capacity of local business and supply chains	4.5
• Risks associated with monopolisation of goods and services	4.2.9
• Effects on local business and economic vitality	4.5
• Established industry guidelines or codes of practice	4.5
• Local buying policy application to contractors and sub-contractors	6.7
• Possible labour shortages within local communities	4.2.6
• Opportunities for workers to commute to and from work where safe and practical	4.2.5
Local Industry and Procurement Plan	6.7

3. SOCIAL BASELINE

This section details the existing social conditions and indicators in the potentially affected communities, and includes the labour force and business characteristics of the broader region.

3.1 Land use and Settlement

3.1.1 Indigenous lands

The Project is within the traditional lands of the Barada Barna people, who were largely displaced from the Isaac region as cattle grazing properties were established during the late 19th and early 20th centuries, but have maintained connections with and care for their traditional lands.

In June 2016, three Native Title determinations were made for claims by the Barada Barna and Widi Peoples[11]. The determinations cover an area of approximately 3,233 km^2 of land and waters south-west of Mackay and north-west of Rockhampton, including approximately 2,699 km^2 which is Barada Barna country, approximately four km^2 which is Widi country and 530 km^2 which is shared between the Barada Barna People and Widi People.

Where Native Title has not been extinguished, Barada Barna's native title area includes land near the study area towns and coal mines. Whilst Native Title has been extinguished within the Project area, co-operation with Barada Barna people with respect to management of Aboriginal cultural heritage and opportunities for Indigenous community members participate in employment and supply opportunities are a key focus for BMA. BMA considers that the mining lease application area is over land tenure that is not subject to Native Title as indicated in the ML70383 application.

3.1.2 Land ownership

Two private properties - Meadowbrook and Lake Vermont would be directly affected by the Project.

Meadowbrook is a breeding property for cattle including Droughtmaster Brahman cross and Charbray. The owners have additional properties in the Middlemount and Clermont-Capella areas, and do not live full time on Meadowbrook. Employment on Meadowbrook includes family members (who also work the other properties) and contract musterers. BMA purchased Meadowbrook and the property will be vacated when subjected to mining impacts.

Lake Vermont has also been purchased by BMA and the property will be vacated when subjected to mining impacts.

The potential for noise or air quality changes to affect the amenity of homesteads is described in Section 4.1.3. Co-existence agreements are in place with the owners of Saraji Homestead 2 and Saraji Homestead 3 which may be affected by noise and dust.

[11] Queensland Cabinet & Ministerial Directory. 2016.

3.1.3 Land use in the Isaac LGA

The Isaac LGA covers a total of 58,862 km^2 including a diverse mix of coastal, agricultural and mining communities, and a substantial portion of the Bowen Basin coal reserves. As shown in Figure 2 the region stretches from the coastal villages of Carmila, Clairview and St. Lawrence, west to the mining centres of Moranbah, Dysart, Middlemount and Glenden, the railway town of Coppabella, and the historic rural towns of Nebo and Clermont.

IRC was formed in 2008 with the amalgamation of Belyando, Broadsound and Nebo Shire Councils. Belyando Shire (which included Moranbah and Clermont) and Broadsound Shire (which included Dysart) began as local government districts in 1879.

Coal was recorded in the Bowen Basin by Ludwig Leichhardt during the late 1840s and there were several short-lived coal mining ventures in the subsequent decades[12], with open cut coal mining established in the Isaac region from the late 1960s. Broadsound Shire was predominantly based on cattle grazing until the 1970s[13].

A significant proportion of land in private ownership across the Isaac region has been cleared, as a result of either pastoral and agricultural activity, mining or settlement. In 2015, approximately 97.91% of the Isaac LGA's land area was classified as rural/green/open space, of which 0.04% was protected area, and 97.4% was rural (agricultural) land and open space. Just 0.06% was land either used or planned for residential purposes[14].

The Project is located within zones mapped as a Regional Landscape and Rural Production Area under the MIW Regional Plan. Cattle grazing is the primary land use in the Project Site, with accompanying production of leucaena and silage, equipment and facilities for feeding and managing stock, water storage and large cell grazing areas. The MIW Regional Plan aims to avoid fragmentation of agricultural land in this zone to maintain economically viable farm lot sizes.

3.1.4 Potentially impacted communities

Moranbah, Dysart and Middlemount were established as purpose-built towns to accommodate mining personnel and their families, so the settlement pattern in and near these towns has been directly determined by the mining industry, as discussed below.

Dysart

Dysart was established in 1973 by the Utah Development Company (UDC) as a purpose-built mining community to support operation of the Saraji and Norwich Park Mines. Dysart was part of the former Broadsound Shire LGA which existed between 1879 and 2008. The town was named after a local pastoral property, reflecting the strength of cattle grazing as the former industry in the area[15]. At the 2016 Census, Dysart State Suburb had a population of 2,991 residents. Land uses in Dysart include:

- urban residential land with primarily low density detached dwellings;
- the town centre offering a small range of local shops and services;
- the Dysart Recreational Centre, Library and Art Space and Civic Centre

[12] Murray, A. 1996. p13

[13] Centre for Queensland Government. 2015a

[14] KPMG. 2015. BHP Billiton Coal.

[15] Centre for Queensland Government. 2015c.

- the Dysart State School, High School and Hospital;
- a range of sporting fields and facilities, and the Dysart Pool;
- WAVS on the edge of the township;
- light industrial land; and
- park reserve land at Centenary Park, Lions Park, Fox Park, Leichardt Oval and Recreation Park[16].

Surrounding land use according to the 2005 Broadsound Planning Scheme includes good quality agricultural land, mining lease areas, rail and road easements[17]. The Peak Range National Park, located approximately 40 km west of Dysart, offers additional recreational opportunities from bush walking to photography[18].

Council's analysis of Dysart's urban form[19] notes that a move to non-residential workforces has seen higher density focused on the town's fringes in WAVs with very low density in the town centre, and a lack of affordable commercial properties had led to growth in home businesses in Dysart, and as a consequence, the town centre's vitality has declined. Implementation of an Urban Design Framework for Dysart commenced in 2014.

Dysart is intersected by Queen Elizabeth Drive which connects to Dysart Middlemount Road, Saraji Road and Dysart Clermont Road to the west and Golden Mile Road (linking to Fitzroy Development Road) to the east. Dysart Airport, located approximately 3.5 km south of the township was owned and operated by BMA until 2013, when it was closed to all but Royal Flying Doctor and Medivac Service.

There is no public transport in Dysart and no passenger train or bus services, forcing reliance on private vehicle usage.

Moranbah

The Moranbah area was settled by pastoralists in the mid 1800s. From the late 1960s, UDC developed the Goonyella and Peak Downs Mine, leading to the establishment of Moranbah, equidistant between the two mines. Moranbah is the major urban centre for the Isaac region, supporting a resident population of 8,735 at the 2016 ABS Census. The MIW Regional Plan identifies Moranbah as the main service centre for the Isaac sub-region due to the availability of employment opportunities and levels of urban services and infrastructure.

Moranbah's land uses include:

- primarily low density detached dwellings, with recent small increases in medium density housing;
- a vibrant town centre comprising main street shopping, a library and gallery, Council offices, parklands, the Civic Centre, Aquatic Centre and Black Nugget Hotel;
- several sporting facilities (golf, basketball, netball, football, cricket and soccer) and parks;

[16] Centre for Queensland Government. 2015c.
[17] Isaac Regional Council 2005.
[18] Isaac Regional Council 2016.
[19] Isaac Regional Council 2015.

- an adjacent commercial precinct including motels, short stay units, and the Moranbah Workers Club, and an indoor retail centre west of the town centre;
- a large range of sporting and recreational facilities;
- three schools, a hospital and a mining industry training centre at the High School;
- an airport, nine km south of town;
- a variety of accommodation villages, of smaller scale in town, larger scale on the fringes of town and very large scale outside of town; and
- light industrial areas on the western town fringe.

In addition to the urban footprint in which development assessment which is largely controlled by IRC, Moranbah includes Priority Development Areas (PDAs) for which the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) is the Development Authority. PDAs enable further urban development to accommodate growth. The Regional Plan notes that Moranbah is expected to have substantial capacity to support continued growth of the mining industry, but this capacity is heavily reliant on the availability and affordability of residential land.

Moranbah is connected to the Peak Downs Highway by the Moranbah Access Road. There is no public transport in or to Moranbah, however a daily bus service operates between Mackay and Moranbah, and there is a twice-weekly bus service to Rockhampton.

School bus routes currently use the Peak Downs Highway and Moranbah Access Road to service schools in Moranbah and Dysart Road to service schools in Dysart. School bus routes typically operate outside of shift start and end times for mine workers and are therefore not anticipated to be affected.

There is a direct air service from Brisbane to Moranbah Airport currently operating several return flights per day, and frequent flights between Brisbane and nearby regional centres such as Mackay. A private taxi service is available within Moranbah town limits and to the airport.

Middlemount

Middlemount was developed during the 1980s, initially to service the Foxleigh and German Creek open cut coal mines located south and south-west of Middlemount. From 2006, Middlemount also provided support services for the Lake Lindsay open cut mine[20].

Urban residential land and associated town facilities are the key land use in Middlemount, which is surrounded by grazing properties, a substantial mining lease area to the south and south west, Junee State Forest to the east and good quality agricultural land to the north[21]. Within town, residential development comprises predominantly detached housing with supporting infrastructure including:

- the town centre, with a small range of shops and cafes;
- Middlemount Community Hall, a large multipurpose Leisure Centre, Middlemount Library and the Pool;
- Middlemount Community School and the Middlemount Community Health Centre; and
- a range of local parks and sporting fields.

[20] Centre for Queensland Government. 2015b.
[21] Isaac Regional Council. 2015.

Natural assets in and around Middlemount include the Blue Mountain Park and Bundoora Dam which support a range of recreational activities from birdwatching to camping, fishing and water skiing.

Regional Centre

The Project is located approximately 167 km southwest of Mackay, which is the principal service and activity centre for the MIW region. Other major regional centres designated in the MIW Regional Plan[22] include Bowen, Moranbah, Proserpine, Sarina, Airlie Beach and Cannonvale.

Mackay's economy is largely driven by agriculture (primarily sugarcane production and milling), mining in the Bowen Basin and supporting sectors including ports, retail, professional and commercial activities. Over the past 50 years, Mackay has been an important regional centre for residents in the potentially affected communities who have sourced specialist health services, training and further education, professional services, retail services and entertainment there. Mackay has developed a wide range of industry strengths to service the mining industry, ranging from ports to construction, equipment supply, labour hire and professional services. FIFO employment options have also seen Mackay became an attractive residential centre for mining families.

3.1.5 Connectivity

The two major state roads that service the Isaac region are:

- Peak Downs Highway (connecting Clermont to Mackay), located approximately 8 kilometres south of Moranbah, Isaac Region; and
- Suttor Developmental Road (connecting Mount Coolon to the Peak Downs Highway, Nebo), located approximately 20 kilometres south west of Glenden, Isaac Region.

The major road transport route in the vicinity of the Project is the Peak Downs Highway which runs from the Gregory Highway north of Clermont to Mackay. The Peak Downs Highway has a poor safety record and has been the focus of community and government action to improve road conditions over the past several years.

3.1.6 Mining in the Isaac LGA

Figure 3 shows the location of mining operations and leases in the Isaac LGA. Coal was recorded in the Bowen Basin by Ludwig Leichhardt during the late 1840s and there were several short-lived coal mining ventures in the subsequent decades[23]. By the 1890s, Belyando Shire was a host to gold and copper mining and smelting activities, however Broadsound Shire was predominantly based on cattle grazing until the 1970s[24].

The history of coal mining in the Isaac region now spans more than 50 years. Open cut coal mining began in the late 1960s with the Utah Development Company (UDC) establishing Goonyella Mine and Peak Downs Mine, and in the early 1970s the Saraji and Norwich Park mines. Middlemount was established during the 1980s, initially to service the Foxleigh and German Creek mines.

[22] Queensland Department of Local Government & Planning. 2012.

[23] Murray, A. 1996. p. 13.

[24] Centre for the Government of Queensland. Queensland Places. 2015a.

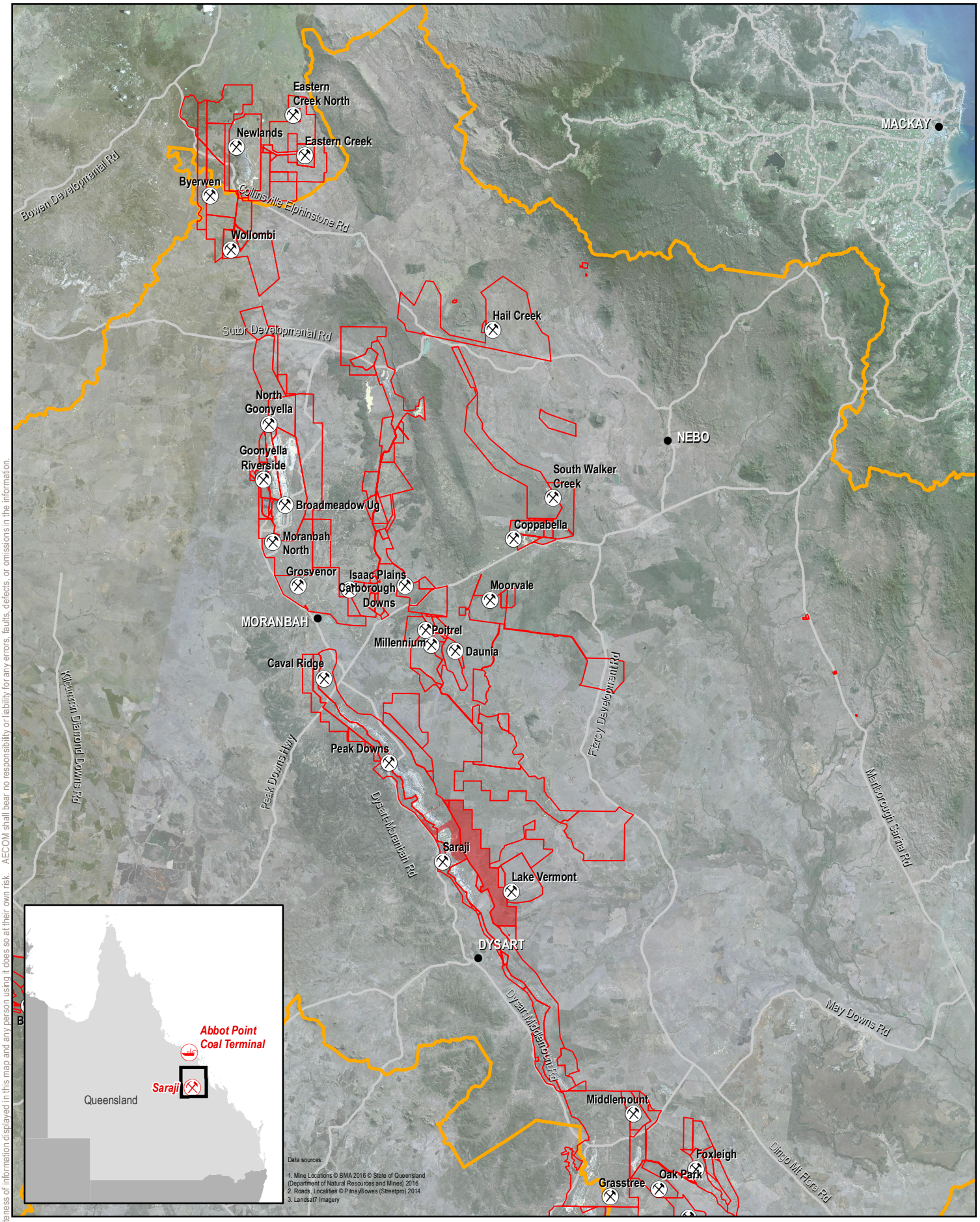
Mines have also been established in the Nebo region, and all four towns have been heavily influenced by the mining and construction industries.[25]

The Isaac LGA currently hosts 27 operating coal mines and four other resource operations. The location of mining leases in relation to local towns is shown in Figure 3. Proposed projects which may contribute to cumulative social impacts are outlined in Section 4.6.

As mining companies were responsible for establishing Moranbah, Dysart and Middlemount, the settlement pattern in this part of the study area has been directly determined by the industry. Other key features of the social baseline which are influenced by the operation of the mining industry include:

- mining directly employed 42% of employed persons compared to 2.3% for Queensland in 2016;
- the availability of housing, employment and some services (e.g. GPs) fluctuates in response to mining industry cycles;
- the LGA has high levels of trade-qualified residents, and significant human and physical capital in mining-related businesses;
- unemployment is very low compared to the Queensland average; and
- the LGA has larger than average numbers of family with children households and a younger age profile than the Queensland average.

[25] Isaac Regional Council. 2016.



LEGEND

- Operational Coal Mine
- Locality
- Major Road
- Saraji East Mining Lease Project
- Mining Leases
- Local Government Areas

Figure 3
Regional Context

Saraji East Mining Lease Project
Social Impact Assessment

0 5 10 20
Kilometres

Scale: 1:942,102 (when printed at A4)

Projection: Map Grid of Australia - Zone 55 (GDA94)

BHP

DATE: 28/05/2019 VERSION: 1

Filename: \\aubne1fp003\Projects\605X\60507031\4. Tech Work Area\4.99 GIS\02_MXDs\06 Environmental Impact Statement\L-1 Social Impact Assessment Report\60507031_G341_v1_A4P.mxd

3.2 Community profile

3.2.1 Population

The Isaac LGA had an estimated resident population (ERP) of 20,940 people in 2016, which was a decrease of some 1,648 people or 7.3% since 2011. By comparison, the Queensland population increased by 8.6% during this period (see Table 10). Each of the potentially impacted communities experienced a decrease in population during 2011-2016.

Moranbah's population declined by 230 people from 9,965 to 8,735 (down 2.6%) during 2011-2016. As previously noted, the State Suburb boundaries for Dysart and Middlemount were expanded between 2011 and 2016, so comparisons for these communities are indicative only, but the Dysart State Suburb included 12 more people in 2016, and the Middlemount State suburb recorded 73 fewer people. The Broadsound – Nebo SA2 (which includes Dysart, Middlemount, Nebo, Glenden and rural localities) experienced a population decline of 13.9% over the five years.

Table 10: Population change in potentially affected communities 2011-2016

Community	2016	2011	Change (no.)	Change (%)
Dysart	2,991	3,003	-12	-0.40%
Moranbah	8,735	8,965	-230	-2.6
Middlemount	1,841	1,914	-73	-3.81%
Broadsound – Nebo SA2	8,505	9,878	-1,373	-13.9
Isaac LGA	20,940	22,588	-1,648	-7.3
Queensland	4,703,193	4,332,739	370,454	8.6

Source: ABS Census of Population and Housing 2016 Time Series Profiles

The population decline between 2011 and 2016 is comparable to that experienced during 1991-2001, when the Isaac LGA lost 4,230 people due to a cyclical downturn in mining activity[26]. However, the LGA's population regained approximately 5,020 people between 2001 and 2011, before declining again in 2013 due to completion of construction on several projects and contraction in mining industry employment.

As at 30 June 2018, the Isaac LGA's estimated resident population was 20,934 people, representing a population decrease of 2.1% over the five years to June 2018.[27].The Mackay LGA's population was also estimated to have decreased by 0.4% per annum, during 2013-2018 (see Table 11). At the broader regional level, the Mackay SA4's population change largely reflects that of the Mackay LGA.

[26] QGSO. 2016a.

[27] QGSO. 2018a

Table 11: Estimated population change 2008-2018, Isaac LGA, Mackay LGA and Mackay SA4

Region	As at 30 June (number)			Average annual growth rate (%)	
	2008	2013	2018p	2008–2018p	2013-2018
Isaac LGA	21,632	23,284	20,934	-0.3	-2.1
Mackay LGA	108,644	118,878	116,539	0.7	-0.4
Mackay SA4	161.613	176,275	172,523	0.7	-0.4

Source: QGSO. 2018

3.2.2 Future Population

Between 2016 and 2041, the Isaac LGA's population is projected to increase by 3,223 people, with an annual average percentage increase of 0.60% (see Table 12). The larger Mackay LGA is expected to increase by 40,577 people, at an average annual percentage increase of 1.38%, which was higher than the projected rate of increase in the Mackay SA4 as a whole (1.27%).

Table 12: Population projections 2016-2041

Area	2016	2021	2026	2031	2036	2041	Change 2016-41	Ann. Av. Change
Isaac LGA	21,563	20,762	21,556	22,709	23,852	24,786	3,223	0.60%
Mackay LGA	117,703	123,570	130,714	139,205	148,527	158,280	40,577	1.38%
Mackay SA4	173,892	180,219	190,445	202,986	215,905	229,260	55,368	1.27%

Source: QGSO. 2018. Medium Series http://www.qgso.qld.gov.au/subjects/demography/population-projections/index.php

3.2.3 Population characteristics

Age and gender

In 2016, the median age in Dysart, Moranbah and Middlemount was lower by 6-7 years than the Queensland median. All areas experience an increase in median age between 2011 and 2016 in line with general population ageing across Queensland (see Table 13).

Table 13: Median age 2011-2016

Community	2011	2016	Change (no.)
Dysart	30	31	1
Moranbah	29	30	1
Middlemount	29	30	1
Isaac LGA	31	32	1
Queensland	36	37	1

Figure 4: Age and Gender 2011-2016, Isaac LGA

Source: ABS Census 2016 Community Profiles

Figure 4 illustrates changes in Isaac LGA's population by age group and gender between 2011 and 2016. The largest age cohorts in the Isaac LGA in 2016 were the 25-34 year and 35-44 year age groups, followed by the 5-14 year age group, which is consistent with the LGA's working family profile. The number of people in each cohort decreased for every age group up to 45-54 years, however the

older age groups all increased during the five years. This indicates that population decline was largely due to outmigration of people of working age. With the workforce outmigration between 2011 and 2016, the Isaac LGA's gender imbalance decreased from 55.6% male in 2011 to 54.5% male in 2016.

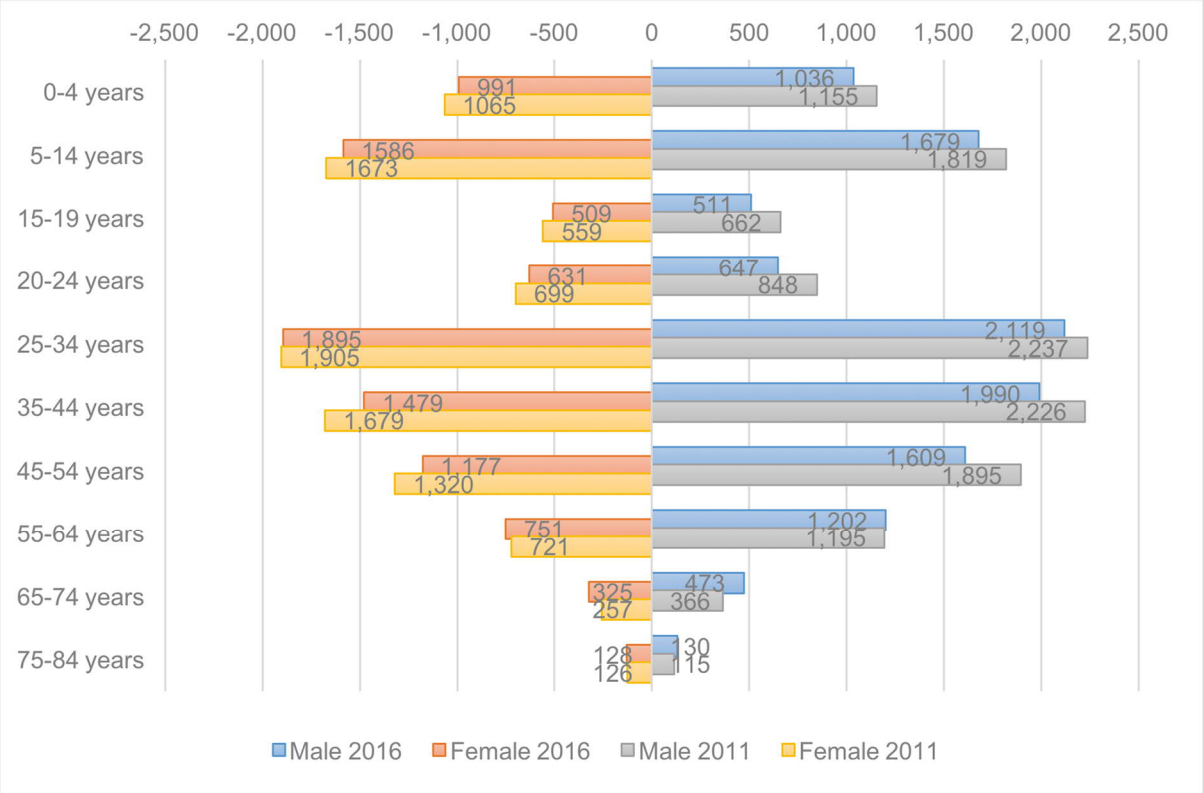


Figure 4: Age and Gender 2011-2016, Isaac LGA

Source: ABS Census 2016 Community Profiles

Indigenous population

There were 744 Indigenous people in the Isaac LGA at the 2016 Census, representing 3.6% of the Isaac LGA population (up from 2.7% in 2011), compared to 4% of the Queensland population (up from 3.6% in 2011). Indigenous Australians represented a larger proportion of the resident population in Dysart (4.5%) compared to the State average (see Table 14).

Table 14: Indigenous population percentage, 2016

Area	% Indigenous
Dysart	4.5
Moranbah	3.9
Middlemount	3.5
Isaac LGA	3.6
Queensland	4.0

Source: ABS Census 2016 Community Profiles

Cultural diversity

Cultural diversity in the SIA Study Area is represented by the proportions of residents who were born overseas and households where a primary language other than English (LOTE) was spoken at home. The proportion of residents that were born overseas was relatively low (at 10% of the LGA's population) compared to the Queensland average (21.6%), with the highest proportion being in Moranbah (12.5%). Approximately 4.4% of residents in the Isaac LGA spoke a primary language other than English at home in 2016 with highest percentages again recorded in Moranbah (see Table 15).

Table 15: Cultural diversity, select characteristics 2016

Area	% Born overseas	% Speak LOTE at home
Dysart	9.1	4.0
Moranbah	12.5	5.9
Middlemount	12.1	5.3
Isaac LGA	10.0	4.4
Queensland	21.6	11.9

Source: ABS 2016 Census of Population and Housing. General Community Profiles

Disability

The number and percentage of people with a disability can be estimated using the ABS's 'core assistance' measure, which refers to a person's need for help or assistance in self-care, mobility and and/or communication. At the 2016 Census, there were 374 people in the Isaac LGA with a need for core assistance, representing 1.8% of the population (compared to 5.2% in Queensland) with highest rates of core assistance requirements seen in the older age groups. Annex A Figure A-1 shows the percentage of each age cohort with a need for core assistance for Isaac LGA and Queensland and indicates that the rate of disability was lower in Isaac LGA than the Queensland average for every age group. The overall low percentage is attributable to the LGA's younger age profile and limited services to support the wellbeing and participation of people with disability.

At the September 2017 quarter, in the Isaac LGA there were 208 people in receipt of a disability support pension which was a rate of 1.3 per 100 people compared to Queensland's rate of 4.1 per 100 people.[28]

Family characteristics

Family and household characteristics in the SIA Study Area at the 2016 Census (see Table 16) included:

- a higher proportion of family households in the Isaac LGA (73.9%) compared with the Queensland average (71.8%), with highest percentages in Middlemount (80.7%) and Moranbah (76.2%);
- a higher proportion of couple families with children in Middlemount (63.2%) and Moranbah (58%) than for Isaac LGA (53.5%) and the State (42.5%); and

[28] QGSO. 2017c

- a higher percentage of sole parents with children living in Dysart and Moranbah (12.2% and 11.4% respectively) compared with Isaac LGA (10.7%), but a lower proportion than the Queensland average (16.5%).

Group households made up 3.3% of Moranbah's household characteristics, which was above the LGA average of 2.9% but below Queensland's 4%. The larger share of group households in Moranbah relative to the LGA may reflect the use of privately-managed share house arrangements for local workers.

Table 16: Family and household characteristics – percentages 2016

Area	Family households			Household type		
	Couple	Couple with children	Sole parent	Family households	Sole person households	Group and other
Dysart	34.4	53.4	12.2	72	25.2	2.8
Moranbah	30	58	11.4	76.2	20.5	3.3
Middlemount	27.7	63.2	9.1	80.7	17.7	1.6
Isaac LGA	35.2	53.5	10.7	73.9	23.2	2.9
Queensland	39.4	42.5	16.5	71.8	23.5	4.7

Source: ABS 2016 Census of Population and Housing, General Community Profiles

3.2.4 Non-resident population

QGSO's Bowen Basin Population Report (2018) provides provisional Full Time Equivalent (FTE) population estimates, which include residents and on-shift NRW. The importance of FTE population in the Bowen Basin is that it provides a truer estimate of the number and location of people which Councils and Government agencies are required to service.

Table 17 provides the estimated resident population (ERP) and non-resident FTE populations in the potentially affected communities and the Isaac LGA[29]. The expected current capacity of WAVs is discussed further in Section 4.3.3. The Isaac LGA's FTE population was estimated at 31,765 people at June 2017, of whom 21,108 people (66.5%) were residents and 10,580 (one third of the FTE) were NRW. By June 2018, a small decrease in the residential population and a small increase in NRW saw the percentage of residents decrease to 63.5% (see **Figure 5**).

Table 17: FTE Population Estimates, Isaac LGA and local communities, June 2017 and 2018

Area	2017			2018		
	ERP	NRW on-shift	FTE	ERP	NRW on-shift	FTE
Dysart	2,420	1,605	4,025	2,400	1,790	4,190
Middlemount	1,805	1,250	3,055	1,790	1,455	3,245
Moranbah	8,620	2,190	10,810	8,540	2,465	11,005

[29] QGSO. 2018a

Area	2017			2018		
Rural areas in Isaac LGA	5,180	4,725	9,905	5,130	5,490	10,620
Isaac (R) total	21,185	10,580	31,765	20,990	12,075	33,070

Source: QGSO estimates in Bowen Basin Population Report, 2018a

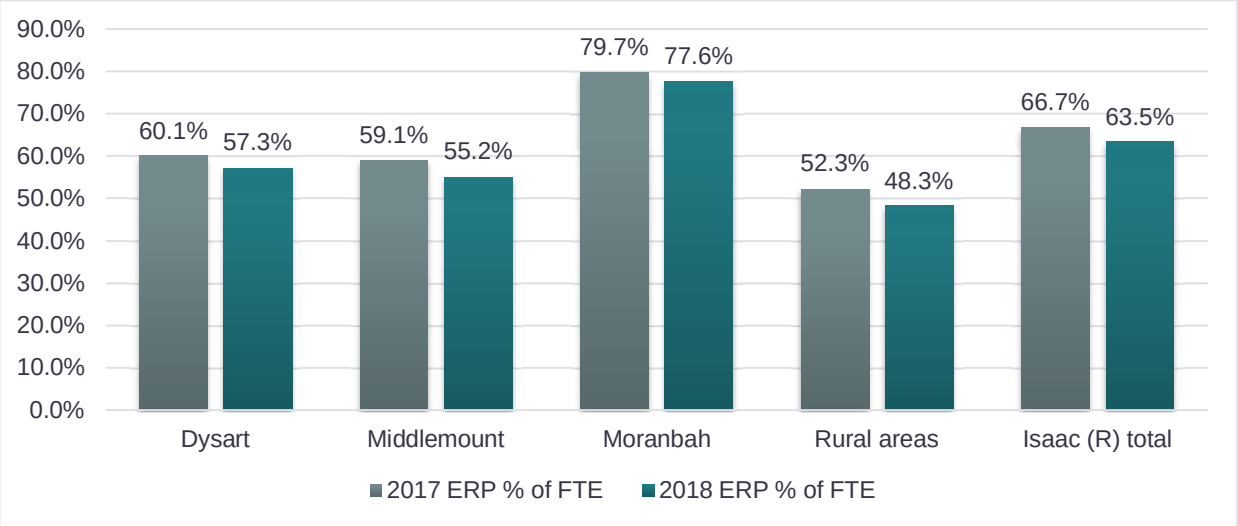


Figure 5: Residential population as percentage of FTE, 2017-18

Source: Derived from QGSO estimates in Bowen Basin Population Report, 2018a

Moranbah hosted the largest number of NRW by town at 2,465 in 2018, followed by Dysart (1,790). Rural areas including Coppabella had lower percentages of residents due to the contrast of very low population densities and accommodation camps with some hundreds of beds.

WAVs were utilised by 93.7% of NRW staying in the Isaac LGA, with the remainder staying in hotels, motels or caravan parks.

Non-resident population projections for the Isaac LGA for 2018-2024 are shown in Table 18. Series A non-resident population projections (considering current mining projects only)[30] anticipate that the non-resident population of will gradually decline from 10,630 people in June 2018 to 9,720 people in 2024.

QGSO's Series B projections include the Series A projections (current projects) plus projects that are approved but have yet to reach financial close, and provide the most certainty with respect to projects in the pipeline.[31] Series B projections anticipate growth in the number of NRW from 2018, peaking in 2022 at up to 11,760 in 2022 (see Table 18).

[30] QGSO. 2018b

[31] Series C projections include Series A and B projections plus the projected growth arising from projects that have lodged an EIS but have yet to proceed to final approval, and Series D includes Series A, B and C projections plus projected growth from projects that have not concluded the EIS approvals process.

Table 18: Non-resident population projections, Isaac LGA 2018 – 2023

Isaac Region	Estimated		Projected					
	2017	2018	2019	2020	2021	2022	2023	2024
Series A	10,580	10,630	10,330	10,110	9,920	9,790	9,760	9,720
Series B	10,580	10,730	11,110	10,820	11,580	11,760	11,170	11,130
Series C	10,580	10,740	11,170	11,020	11,860	11,900	11,310	11,260
Series D	10,580	10,740	11,250	11,350	12,200	12,550	12,370	12,230

Source: QGSO estimates in Bowen Basin Population Report, 2018b

3.2.5 Education

Early childhood development

Early childhood development outcomes are indicated by the Australian Early Development Census (AEDC), a triennial, nation-wide assessment of children in their first year of schooling shows that the proportions of children in Moranbah that were developmentally vulnerable on two or more AEDC domains were generally comparable with Queensland average (at 11.8%), though the Broadsound – Nebo SA2 performed better than the state at 6.7% compared to 14.0%.

The proportion of children that were developmentally vulnerable on two or more domains was relatively stable for all SA2s over the collection period (2009-2015). AECD trend data for 2009-2015 are available at the Bowen Basin SA3 level and show that Indigenous children in the Bowen Basin North SA3 continue to perform better than the State (see Annex Table A-1).

Educational attainment

At the 2016 Census, 42.7% of Moranbah's population over 15 years had completed Year 12 (or equivalent) as their highest level of schooling, which was lower than the State average of 52.2% (see Figure 6). In consequence, higher percentages had completed Year 11 (7.3%) or Year 10 (24.4%) compared to the State average.

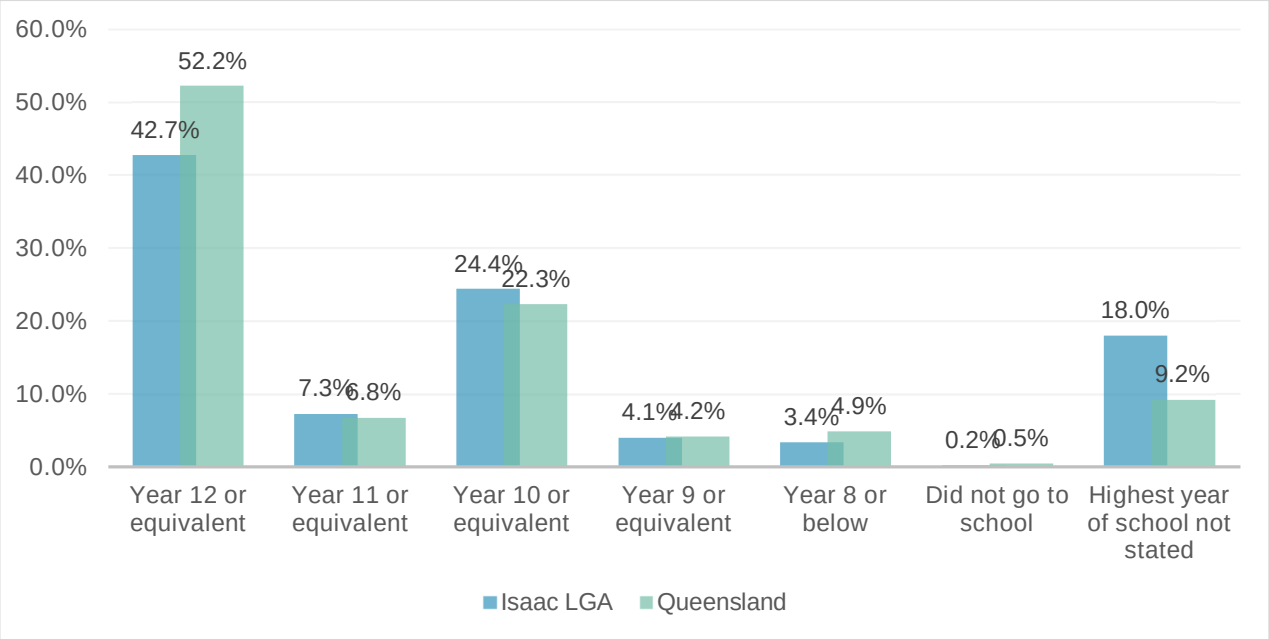


Figure 6: Highest year of school completed 2016

Source: ABS Census of Population and Housing Community Profiles Isaac LGA and Queensland

With respect to Indigenous people, 38.2% of Indigenous residents in the Isaac LGA had completed Year 12, compared to 51.2% of non-Indigenous people., whilst 43.4% had completed school at Year 10 or 11, compared to 37.2% of non-Indigenous people (see Figure 7). Lower rates of educational attainment lead to restricted employment pathways.

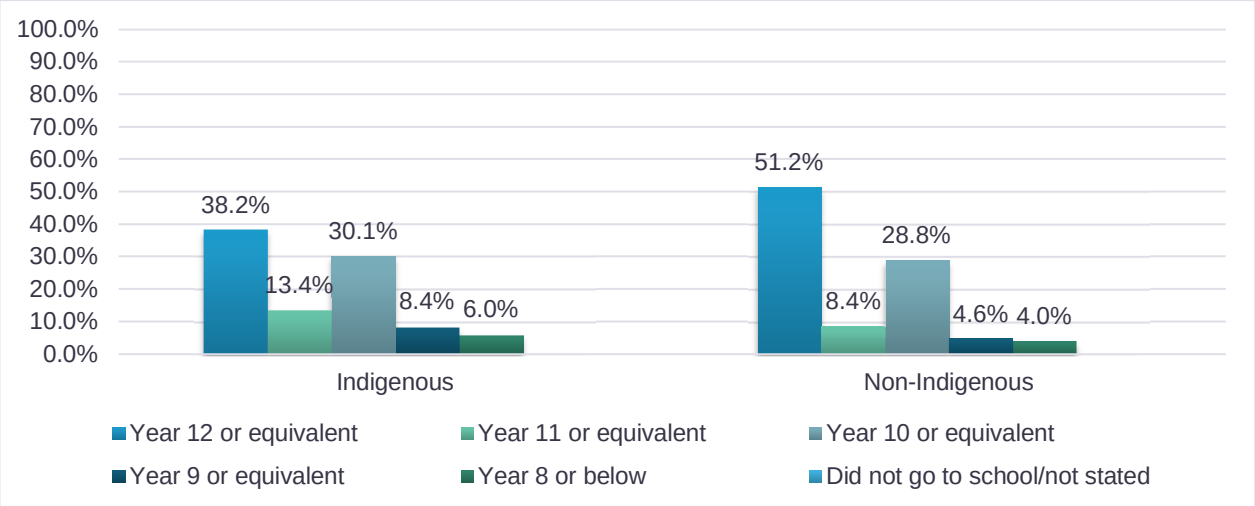


Figure 7: Indigenous and non-Indigenous High School Attainment

Source: ABS Census 2016 Isaac LGA Indigenous Community Profile

Data on post-school qualifications in the Isaac LGA are shown in Table 19. The percentage of Isaac residents with a qualification was higher than the Queensland average, with a very high percentage of certificate qualified residents, reflecting the high number of people with trade qualifications.

Table 19: Qualifications 2016

Area	Degree		Diploma/ Advanced diploma		Certificate		Persons with a qualification(d)		Total 15yrs+
	No.	%	No.	%	No.	%	No.	%	No.
Isaac	1,621	10.4	800	5.1	4,123	26.4	9,523	60.9	15,641
Queensland	0.69 M	18.3	0.33 M	8.7	0.8 M	21.3	2.24 M	59.1	3.79 M

Source: QGSO Regional Profiles. M = Million

3.2.6 Internet access

In 2016, approximately 85.1% of all households in the Isaac LGA had an internet connection, up from 83.8% in 2011. The highest connection rate in 2016 was in Middlemount (92.2%), followed by Moranbah (90.2% up from 88.8% in 2011) and Dysart (86.4%). This measure captures any one person at a dwelling that accesses the internet through any type of device including a mobile phone (see Table 20).

Table 20: Dwellings with internet connection

Area	2011		2016	
	No.	%	No.	%
Dysart	729	86.6	698	86.4
Moranbah	2,317	88.8	2,333	90.2
Middlemount	484	92.5	450	92.2
Isaac LGA	5,573	83.8	5266	85.1

Source: ABS 2011 and 2016 Census of Population and Housing.

3.2.7 Income, disadvantage and cost of living

Incomes and housing payments

Table 21 provides the change in median household and personal incomes in the SIA Study Area between 2011 and 2016, and shows that both personal and household weekly incomes decreased in potentially affected communities over the five years, against considerable positive changes for Queensland as a whole. This is another indicator of the loss of working families from the LGA, but may also indicate more competitive wages and salary environment.

Whilst the gap between the local and State medians narrowed, in 2016 average individual incomes in Dysart were still 69% higher than the Queensland average. Similar patterns were seen in Moranbah, where median household income dropped by 13% and personal incomes by 5% between 2011 and 2016, but median personal and household incomes were both more than 50% above the Queensland average. For residents in Middlemount, median personal and household incomes in 2016 were also considerably higher than the State and LGA average, however had declined by 9.8% and 14.8% respectively. The Isaac LGA as a whole also experienced decreases, whilst remaining above the State median.

Table 21: Median Weekly Individual and Household Incomes, 2011-2016

Town	2016 Weekly Income		2011 Weekly Income		% Weekly Income Change	
	Individual	Household	Individual	Household	Individual	Household
Dysart	1,113	2,152	1,282	2,724	-21.0%	-21.0%
Moranbah	1,209	2,421	1,275	2,778	-12.9%	-12.9%
Middlemount	1,365	2,405	1,514	2,822	-14.8%	-14.8%
IRC	1,030	2,138	1,052	2,579	-17.1%	-17.1%
QLD	660	1,402	587	1,235	13.5%	13.5%

Source: ABS 2016 and 2011 Census of Population and Housing

Figure 8 compares the median weekly household incomes (all households) to median mortgage payments.

Moranbah's median monthly mortgage payment ($1,733/month) equaled that of Queensland, whilst Middlemount and Dysart had median mortgage payments of $800 and $834 respectively. This reflects the greater development of new housing estates in Moranbah, as well as the release of that housing to the market during 2010-2012 whilst sale prices were reaching record highs.

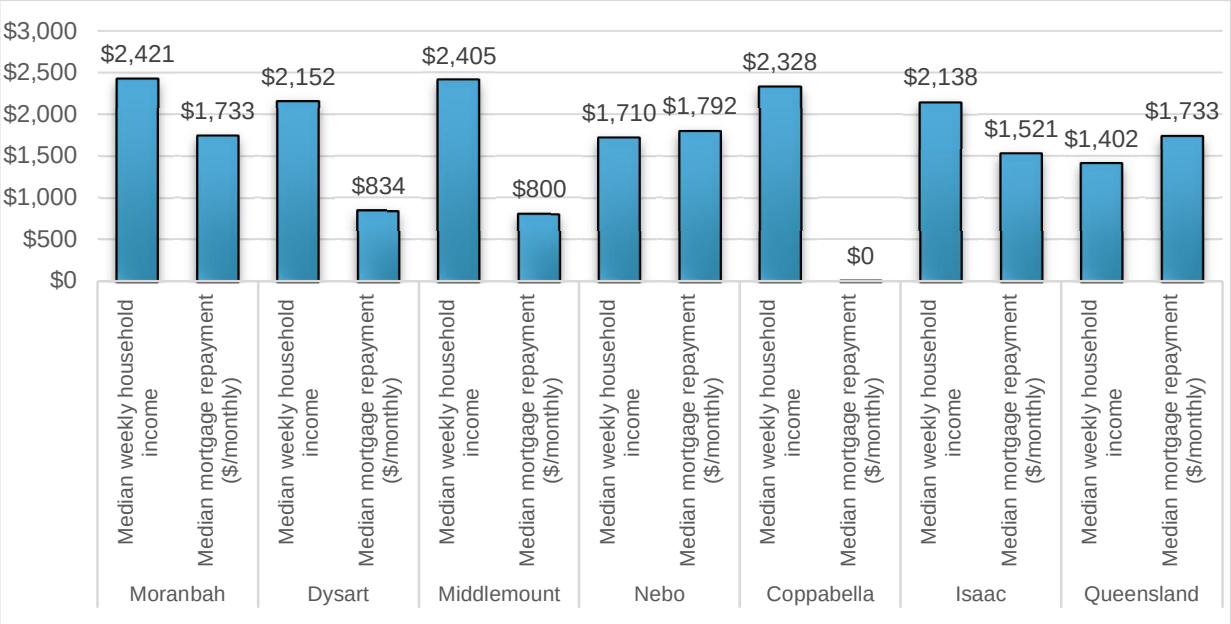


Figure 8 Median household income and mortgage payments 2016

Source: ABS 2016 Census of Population and Housing

Social inequality is demonstrated in selected medians for the LGA's Indigenous community compared to the non-Indigenous community.

shows that whilst Indigenous people and Indigenous households32 had lower median incomes than non-Indigenous people, their median mortgage payments and median rents were higher. This is largely because on average, non-Indigenous people have higher disposable incomes with which to pay down mortgages, and Indigenous representation in mining employment is lower, with less access to subsidised rental housing.

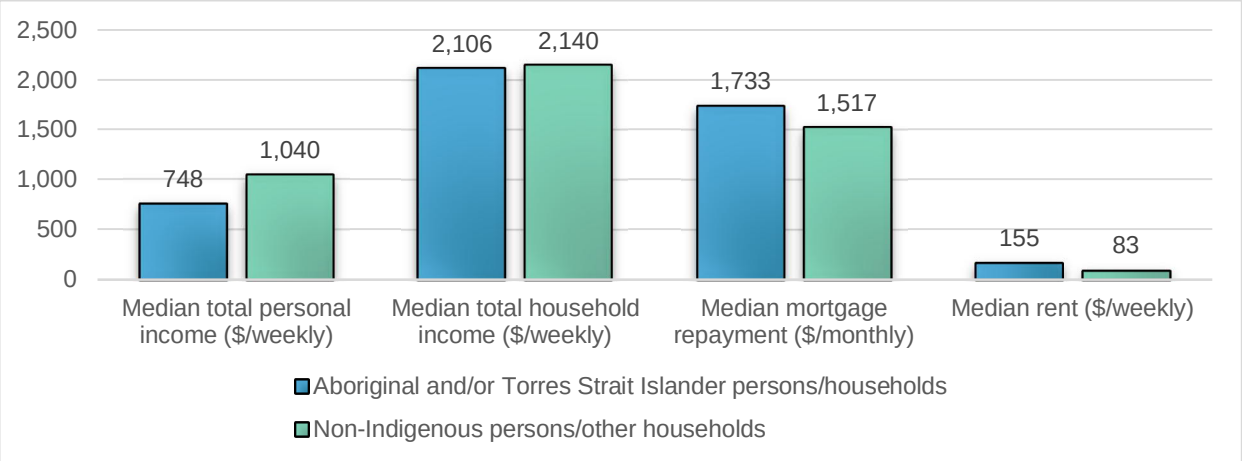


Figure 9 Indigenous and non-Indigenous household income and housing cost ($)

Source: ABS Census 2016 Isaac LGA Indigenous Community Profile

Relative Socio-Economic Advantage and Disadvantage

The Socio-Economic Indices for Areas (SEIFA) Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) summarise information about the economic and social conditions within an area. The indices are derived from Census variables including income, percentage in skilled occupations, car ownership, over-crowding, housing expenditure and assets, and educational attainment. An area with a high score on this index has a relatively high incidence of advantage and a relatively low incidence of disadvantage. Scores are compared to the standardised baseline (State) score of 1,000.

The SEIFA IRSAD scores for 2011 and 2016 in the Project's nearby local communities are shown in Table 22. The 2011 scores indicate that Dysart, Moranbah and Middlemount (and by consequence Isaac LGA) had higher scores (less potential for disadvantage) than the Queensland score.

However, results for 2016 show all areas have experienced a decrease in IRSAD scores, with Dysart experiencing the most substantial decrease of 76 points, followed by Middlemount with a decrease of 55 points and Moranbah with a decrease of 43 points. The decreased scores likely reflect the decrease in incomes, the outflow of people of working age with professional or trade qualifications, and the inflow of people attracted by affordable housing during the past few years.

Moranbah was the only town to retain a score above the Queensland average, which is likely to be a reflection of strong ongoing employment in the mining industry, higher incomes, some subsidised rental housing and large percentages of people with qualifications.

[32] An Indigenous household is any household that had at least one person as a resident at the time of the Census who identified as being of Aboriginal and/or Torres Strait Islander origin.

Table 22: Index of Relative Socio-economic Advantage and Disadvantage

Town	Score 2011	Score 2016	Change
Dysart	1032	956	-76
Moranbah	1054	1011	-43
Middlemount	1043	988	-55
Isaac LGA	1028	987	-41

Source: ABS 2011 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA), Data Cube only, State Suburb (SSC) Index of Relative Socio-economic Advantage and Disadvantage, published for 2011 and 2016, AND Local Government Area (LGA) Index of Relative Socio-economic Advantage and Disadvantage, published for 2011 and 2016

Cost of living

The Index of Retail Prices in Queensland regional centres (last published in 2015) compares the prices of a basket of household goods and services between the Brisbane region and regional centres. The Brisbane region (comprising the five LGAs of Brisbane, Ipswich, Logan, Moreton Bay and Redland) has been given an index of 100, and all other centres have an index relative to the Brisbane region. Centres surveyed included Moranbah and Mackay, whose index measures are shown in Table 23 showing that they recorded an 'All Items Index' similar to the Brisbane region.

Findings relevant to the SIA Study Area include:

- higher index scores in Moranbah and Mackay for 'all items less housing', attributable to the higher costs of food and non-alcoholic beverages, food, furnishings and household equipment, recreation and culture, and alcohol and tobacco; and
- comparable scores for Moranbah, Mackay and Brisbane region for health and transportation.

The index score for health would not capture the cost of Moranbah residents accessing specialist and birthing services in Mackay as is the norm.

Housing costs in Moranbah were much lower than in the Brisbane region. This is attributable to higher property values in metropolitan areas, against the normalisation of housing costs that Moranbah has experienced over the past four years.

Table 23: Index of Retail Prices in Moranbah and Mackay Regional Centres, 2015

Index	Moranbah	Mackay
All items	99.4	99.4
All items less housing	108.0	105.7
Alcohol and tobacco	105.6	99.6
Clothing and footwear	87.0	109.4
Food and non-alcoholic beverages	117.2	107.9
Furnishings, household equipment and services	121.6	141.0
Health	100.4	100.0
Housing	69.4	77.1
Insurance and financial services	89.7	95.2
Recreation and culture	116.2	95.0
Transportation	100.9	100.9

Source: Queensland Government Statisticians Office. 2016b. Index of retail prices in Queensland regional centres

3.3 Community values

3.3.1 Regional Planning Goals

The Isaac LGA is part of the MIW Region which has a total area of approximately 90,000 km^2. The MIW Regional Plan 2012 notes that the pastoral and sugarcane industries, agricultural processing and mining have shaped development of the region. The Regional Plan's goals for MIW communities include:

- the development of resilient and cohesive communities with distinct character;
- recognising and fostering existing community values, including character, cultural heritage, diversity, amenity, safety, access, and social capital;
- retain regionally unique built and natural assets;
- manage and sustain regional population growth and significant demographic changes;
- enhance the economic diversity of the region and support local business sustainability;
- improve diversity of employment opportunities in the region;
- improve housing availability and affordability to support growth and healthy communities;
- manage cumulative social impacts that result from development, particularly mining projects; and
- increase the capacity and variety of social infrastructure and service (including community, cultural, educational, health and recreational facilities).

With respect to future development in the MIW region, the QGSO estimated in 2015 that the total area of broadhectare land (larger land parcels which represent unconstrained residential land supply) was 5,806 ha which if fully developed, was likely to yield approximately 34,300 dwellings. This would accommodate population growth of approximately 91,700 persons using current average household

sizes and indicates approximately 19 years of supply[33]. As such, the future growth of residential communities in the region is supported by available land stocks.

3.3.2 Indigenous community values

The Barada Barna People have Native Title interests in land near the Project Site. Barada Barna Traditional Owners noted that the 2016 native title determination would enable them to have active involvement in protecting cultural heritage and would strengthen Barada Barna people's pride and knowledge about their long-term connection to country[34]. Indigenous social values include Traditional Owners' cultural values (relevant to past and present relationships with the land and waters), and social values relevant to Indigenous people's community wellbeing and economic participation.

Cultural heritage assessment undertaken by Northern Archaeology Consultancies Pty Ltd and Woora Consulting for BMA's nearby Caval Ridge Project[35] found 'a wealth of cultural heritage sites, items and significant natural features of indigenous origin', including artefacts, scarred trees, aboriginal fireplaces, and natural features with cultural significance'. The assessment noted that 'traditionally, most plant species found in the region had 'some practical or ritual use for food, medicine, implements or weapons to Aboriginal people', and that some species also had symbolic or ritual significance.

A detailed Cultural Heritage Assessment has been provided as part of the Project's EIS, and describes cultural heritage values in the vicinity of the Project Site. The assessment found that there were artefacts and places of cultural significance to the Barada Barna people on the Project Site.

3.3.3 Isaac LGA Values

In April 2015, IRC adopted Isaac 2035, a Community Strategic Plan[36], which aims to strengthen the region across four key areas: improving essential infrastructure; diversifying the economy; supporting communities; and protecting the natural environment.

Isaac 2035's key themes include:

- 'Communities: Isaac will have strong and diverse communities that support all to live, work and raise families;
- Economy: Isaac will continue to be Queensland's number one performing regional economy based upon a thriving, resilient and diverse mix of industry sectors;
- Infrastructure: Isaac will have effective and sustainable infrastructure that supports the needs of the region's communities and its economic sectors; and
- Environment: Isaac will have an appropriate and sustainable balance between environment, economy and community to ensure our natural resources are sustainably managed and protected'.

Isaac 2035's key goal for its communities is that in 2035, the Isaac LGA will have strong and diverse communities that support all to live, work and raise families. Actions supporting this goal include:

- providing safe and cost-effective community facilities and venues;
- providing a range of services to cater for the diverse needs of our communities;

[33] Queensland Government Statisticians Office. 2015a

[34] Queensland Cabinet & Ministerial Directory. 2016

[35] BMA. 2011.

[36] Isaac Regional Council. 2015.

- partnering with a range of stakeholders to build self-sustainable community groups;
- delivering programs and services that promote community safety and wellbeing; and
- celebrating communities and their uniqueness.

3.3.4 Culture and identity

As evidenced by consultation and community planning goals, towns in the Isaac region share many cultural values including:

- appreciation for a relaxed lifestyle in a rural setting;
- a strong sporting culture, supported by access to well-planned sporting facilities and fields;
- a commitment to working hard to provide for the future;
- reliance on leisure time with family and friends; and
- appreciation and protection of environmental qualities, in both natural environments (such as reserves and national parks) and modified environments such as towns and farms.

Dysart, Moranbah and Middlemount have strong identities as mining towns, given they were directly established by mining companies and their economies are still heavily dominated by the mining industry. They are workers' towns, but also family towns, with high percentages of children and young people, and a high priority on providing a safe and enriching environment for children.

The towns are also observed to be highly egalitarian, partly due to the commonality of employment in mining and supporting services. Traditionally there was a differentiation between mining 'workers' and 'management' and some of this remains. Workers' unions are strong in the mining towns and embody local values such as 'sticking together', mateship, mutual responsibility and support for workers and families.

Stakeholder inputs during the SIA workshops and interviews indicate that:

- each community identifies as a mining community in a rural setting;
- there is a strong community spirit with residents who participate in and facilitate events, albeit with limited human resources to support events and sporting clubs;
- there is a strong desire to increase the populations of all towns, to increase community vitality, business trade and the diversity of services, businesses and entertainment;
- community sentiment is that new mining operations are supported; and
- communities wish to be less dependent on mining companies for social infrastructure and employment.

3.3.5 Community cohesion and resilience

Community cohesion in the potentially affected communities is strong, supported by their small size, self-help culture, commonality of employment in the mining industry, shared history and intergenerational bonds.

Isaac LGA towns have experienced the cyclic impacts of the coal industry, with corresponding fluctuations in economic prosperity and population size. Periods of economic decline affect employment rates as well as business and community confidence whilst growth periods lead to increased cost of living, accommodation shortages, labour draw and demand for services. Both ends of the spectrum have been seen in the LGA. The most recent example is the period of mining expansion between 2008 and 2012, which led to a severe housing shortage and population turnover, as key workers and lower income families were forced to leave.

The ‘core’ of local communities remain highly connected, however consultation indicated that mining companies’ use of larger FIFO workforces has also led to fracturing of networks, as long term residents left to be replaced by FIFO workers, and the town incorporated increasing numbers of NRW who are less active in the community. This has led to some divisions within communities, and to a smaller pool of people to support social resources such as junior sporting clubs.

Community resilience exists when communities have the resources (human, social and physical) to adapt to change and maintain their residents’ quality of life. In the potentially affected communities, resources which support resilience include affordable housing options, services and facilities which support people in need, financial resources and social networks to respond to the cyclical nature of mining communities. The Isaac region is also high in human capital, which refers to the stock of knowledge or worker characteristics that contribute to their productivity and increases profits.

Community inputs during SIA workshops included:

- local, permanent employment as the key to community stability and resilience;
- employment pathways for young people are a key priority;
- a strong value placed on community events and sporting activities which bring community members together; and
- willingness on the part of community, health and emergency services providers to work with mining companies to address cumulative impacts.

Weaknesses identified in the Isaac 2035 Plan which challenge social resilience include:

- significant economic, political and social challenges related to FIFO workers;
- limited regional funding priorities directed to the region;
- limited health services or professionals in the region;
- cyclical oversupply, and possible structural decline, in demand for coal, and lack of economic diversification; and
- limited small to medium enterprise culture or support networks.

BHP Coal’s 2015 Socio-Economic Baseline Report notes that economic diversity in the Bowen Basin region is low, and the industries that sustain the local economies, both in terms of number of businesses and employment, have been affected by recent downturns.

The current housing affordability in Isaac LGA has been positive for community resilience, seeing new families come to town, attracted by affordable country living with excellent amenities. This has included FIFO workers converting to local jobs. Affordable housing has also attracted people from other regions, including people with higher support needs (financial, emotional and health) bring a new challenge for social integration.

IRC has a strong planning and implementation focus on community resilience and economic diversity. Consultation with IRC for the SIA identified current goals as relevant to the Project including:

- a strong preference for maximising local employment opportunities;
- minimising the development of new WAVs in favour of local housing options, unless a clear need can be demonstrated;
- ensuring that both residents and NRWs are treated equitably in relation to service provision (e.g. emergency and health services);
- advocacy for Government recognition of the demands of NRWs on Council, Government and community services, including health services;

- ensuring the LGA's waste management and water supply infrastructure are adequate to the needs of residents, local business and mining companies; and
- supporting local business participation to Project opportunities.

3.3.6 Amenity and lifestyle

The Isaac 2035 Plan[37] identifies the region's community strengths as including:

- "a good place to bring up a young family, some great, family-friendly facilities;
- long standing heritage towns such as Clermont, Nebo and St Lawrence with supportive cultures;
- safe communities with low crime;
- younger than state average population the region; and
- an existing arts and culture community the region".

As purpose-built towns, Dysart, Moranbah and Middlemount were designed with central town squares, cull de sacs separated by pedestrian buffer zones with neighbourhoods radiating from the town square (aiming for walkability to schools and shops), and with generous sporting facilities. People have access to a high level of amenity for families, excellent pedestrian connectivity, and sufficient services to support people throughout most of their lifecycle (the exceptions are births and end of life care). The Isaac Community Plan consultation process found almost all (98%) of participants had chosen to live in the Isaac Region for community, lifestyle and liveability reasons. Specific amenity and lifestyle values for each town are described below.

Dysart

Dysart is described as a friendly community with modern facilities including the multi-purpose Dysart Recreational Centre, offering indoor sports, a gym, a coffee house and youth centre. Dysart also features a civic centre and town library, a shopping centre, a community centre with crisis accommodation services, bowls club, nine-hole golf course and an Olympic-sized swimming pool[38]. While predominantly a 'mining town', the community in Dysart enjoys the benefits of a rural lifestyle with wide open spaces surrounding the town.

Dysart residents who participated in a survey for the IRC's Urban Design Framework[39] described Dysart's key values as 'community spirit, caring and friendliness', and 'lifestyle with family and friends'. 'Easy living' was also a value, whilst 'security and opportunities' received much lower ratings, reflecting the challenges of high housing costs (at the time) and maintaining secure local employment.

Moranbah

Moranbah is a compact town characterised by low-rise housing well distributed around the town centre. It offers a relaxed and casual lifestyle, rich in social and sporting options. Whilst primarily a mining town, Moranbah's lifestyle is supported by typically rural values of friendliness, hard work and mutual support. Shared connections through similar life experiences add to the sense of community. Key aspects valued by residents in Moranbah include:

[37] Isaac Regional Council. 2015.
[38] Isaac Regional Council. 2017a.
[39] Isaac Regional Council. 2017a.

- a casual, relaxed lifestyle centred around family, health, and sporting associations;
- a wide range of sporting facilities, and access to community centres;
- a higher than average level of social advantage (as evidenced by the SEIFA indexes);
- the 16-bed hospital, police, ambulance and fire stations; and
- a range of local retail services.

As discussed further in 4.5, dust has been identified as potential problem in Moranbah, with implications for household and outdoor amenity.

Middlemount

Middlemount is also a compact town centres around the town centre which accommodates shops, the pool, the school and a large multipurpose Community Hall. Middlemount was initially planned to support a population upwards of 4,000[40] and as a result features an excellent range of community facilities.

3.4 Housing and accommodation

This section outlines the provision of housing and accommodation in the Isaac LGA.

3.4.1 Dwelling type

Table 24 shows the total number of private dwellings, occupied dwellings and type of dwellings for each of the local towns and the Isaac LGA, with Queensland averages for comparison. Characteristics of note include:

- Moranbah had the largest number of private dwellings at 3,659, of which 29.2% were unoccupied on the Census day (9 August 2017). Of occupied dwellings in Moranbah, 81.3% were separate houses and 17.5% were attached dwellings, the highest percentage of attached dwellings in the SIA Study Area;
- the second highest number of private dwellings was in Dysart at 1,385, of which 41.4% were unoccupied on Census night; and
- Middlemount had the third largest number of dwellings at 870, with the highest rate (43.9%) of dwellings unoccupied.

Collectively between the three towns, there were more than 2,025 unoccupied dwellings on Census night. Housing may be unoccupied because it is awaiting maintenance, or is on the market for purchase or rental, or is off the market due to low demand. These factors are all relevant in the local towns, along with large numbers of homes owned by mining companies which are currently not in use.

Information about BMA's housing stocks is provided in Section 4.3.3.

[40] Centre for the Government of Queensland 2015c.

Table 24: Private dwelling types, 2016

	Dysart	Moranbah	Middlemount	Isaac LGA	Qld
Separate house	739	2,106	429	5,339	1,269,653
Separate house % occ dw	91.0%	81.3%	87.4%	86.3%	76.6%
Semi-detached, row, terrace or townhouse	22	280	39	353	174,984
Flat or apartment	43	172	7	312	186,778
Attached dwellings % occ dw	8.0%	17.5%	9.4%	10.8%	21.8%
Another dwelling	4	31	3	128	16,815
Dwelling structure not stated	5	4	9	52	8,602
Total occupied private dwellings	812	2,590	491	6,186	1,656,831
Unoccupied private dwellings	574	1,069	382	3,253	195,570
Unoccupied private dwellings %	41.4%	29.2%	43.9%	34.5%	10.6%
Total private dwellings	1,385	3,659	870	9,440	1,852,407

Source: ABS Census 2016 Community Profiles

3.4.2 Housing tenure

Housing tenure in the SIA Study Area is shown in Table 25. The most striking feature is the percentage of rented dwellings in the study area, ranging from a high of 94.4% in Middlemount, to 69.2% in Dysart, reflecting a high percentage of rented, mine-owned housing. The other key feature is the very high percentages of 'other landlord type' - ranging from 71.5% in Middlemount to 41% in Moranbah and 34.5% in Dysart, which largely equates to dwellings owned by mining companies. In total, more than one third of Isaac LGA's stock was rented from 'other landlords' (primarily companies) compared to the Queensland average of 1.7%. Whilst housing costs in the Isaac LGA have normalised over the past five years, the high percentage of dwellings owned by companies constrains normalisation of ownership, and leaves communities vulnerable to industry trends and policy changes.

Table 25: Housing tenure

Tenure	Dysart	Moranbah	Middlemount	Isaac	Queensland
Owned outright	133	220	10	1,093	471,407
Owned with a mortgage	97	320	8	913	558,439
Rented	562	1,984	466	3,928	566,478
Rented - other landlord type	280	1,061	351	2,153	28,143
Rented - real estate agent	195	728	83	1,192	352,216
Rented - person not in same household	53	92	12	325	114,992

Tenure	Dysart	Moranbah	Middlemount	Isaac	Queensland
Rented - State or territory housing authority	17	65	8	119	52,858
Rented - housing co-op/community/ church	3	3	5	19	8,675
Landlord type not stated	7	37	5	117	9,597
Other tenure type/not stated	24	71	10	258	60,510
% Rented	69.2%	76.6%	94.9%	63.5%	34.2%
% Rented - other landlord type	49.8%	53.5%	75.3%	54.8%	5.0%
% Other landlord (of total dw)	34.5%	41.0%	71.5%	34.8%	1.7%
% Social housing (of total dw)	2.5%	2.6%	2.6%	2.2%	3.7%
Total	812	2,590	491	6,186	1,656,831

Source: ABS Census 2016 Community Profiles

With respect to the appropriateness of housing to household need, Indigenous households show higher than average numbers of people per bedroom and larger average household size (see Figure 10). Proportions of dwellings that need an extra bedroom indicate overcrowding (which hampers health and educational outcomes). In the Isaac LGA, Indigenous households' rate of overcrowding was more than twice that of non-Indigenous households.

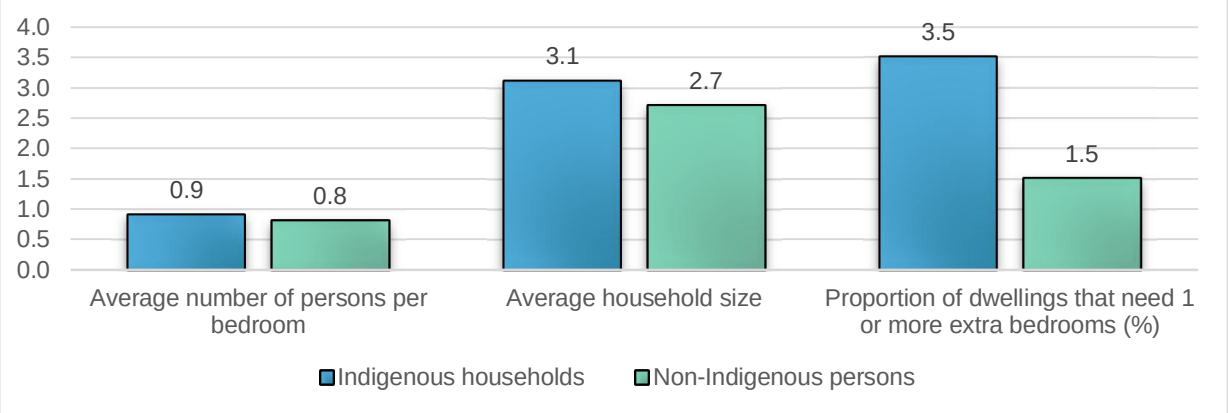


Figure 10: **Indigenous and non-Indigenous housing appropriateness indicators Isaac LGA**

Source: ABS Census 2016 Isaac LGA Indigenous Community Profile

3.4.3 Housing trends

The Isaac region has experienced significant fluctuations in housing affordability during the past five years. During 2011-2013, there were very high cumulative demands for housing, and housing prices in each of the potentially affected communities soared, with rental costs reaching record highs and outstripping rental costs for equivalent housing on the coast. Rental cost inflation caused significant financial stress for households who didn't have access to mining wages or subsidised housing and resulted in the loss of key workers (including health and retail workers) from each town. It also resulted in significant overcrowding, with an increase in temporary dwellings such as caravans and shipping containers, multiple workers sharing single dwellings, and local people sharing over-crowded houses.

In response to the housing crisis, BMA and the Urban Land Development Authority (ULDA) constructed housing in Moranbah. However, by mid-2013 a number of mining construction projects had been completed, and some operational workforces contracted (or ceased in the case of Norwich Park Mine, which was put into care and maintenance).

The development of large WAVs near Dysart and Moranbah also contributed to a decrease in housing demand for NRW. As a result, housing pressures eased and the cost of housing plunged. Rental costs and asking prices are currently lower than for comparable housing in the adjacent LGAs.

This is borne out by median sale prices for all dwellings in 2018 which included:

- $138,000 in Isaac LGA (down from $519,500 in 2012);
- $170,000 in the Central Highlands (down from $410,000 in 2012); and
- $325,000 in the Mackay LGA (down from $418,000 in 2012)[41].

Current data on housing affordability presented below have been sourced by postcode from realestate.com.au for Dysart, Moranbah, and Middlemount[42], however limited data was available for Middlemount due to small turnover rates. Rental vacancy rates were determined using SQM Research data.[43]

3.4.4 Residential land

The closing stock of approved residential lots (those associated with current approvals and awaiting development) in the Isaac LGA at September 2018 was 320 lots, with five new residential dwellings and six new lots approved in the year to December 2018, indicating a good supply for immediate residential development[44].

As at March 2018, the Isaac LGA had 899 ha of broadhectare land suitable for residential development, which had decreased by three ha during the preceding twelve months, and representing 16% of broadhectare land stock in the MIW Regional Planning Area (RPA). On a 'high yield' scenario (smaller lots and more medium density dwellings) this would yield 4,942 dwellings, and on a 'medium yield' scenario, 4,451 dwellings. QGSO estimates that over the next 2 years, broadhectare land which is likely to be developed is expected to yield approximately 896 dwellings.[45]. As such, in the short to medium term, there is capacity for significant residential development in the Isaac LGA.

BMA currently owns a total of 141 vacant residential lots in Moranbah and 17 residential lots in Dysart, some of which would support multi-unit developments. BMA has no current plans to develop its vacant residential land, but periodically reviews the quality of its housing stock and its suitability to workforce needs. BMA's vacant residential lots may be developed if a shortfall between workforce requirements and available stock is identified.

[41] QGSO 2018e

[42] Realestate.com.au Investor Information. September 2018

[43] SQM Research. 2018a.

[44] QGSO. 2018d

[45] QGSO. 2018h

3.4.5 Housing purchase

The analysis in Table 26 is based on analysis of Realesate.com.au listings for local towns in September 2018 and early April 2019.

Between Dysart, Moranbah, and Middlemount, there were 152 dwellings available for purchase in April 2019, ranging from older style, chamfer board and timber homes of three bedrooms and one bathroom constructed during the 1970s, through to four and five bedroom homes of timber and block construction constructed during the last five years (in Moranbah). This was an increase of 32% on the total of 115 dwellings available in September 2018, due largely to an increase in the number of houses available for purchase in Moranbah, potentially indicating an increase in market confidence.

Table 26: Dwellings for purchase September 2018 and April 2019

Town	Sep-18			April-19		
	Houses	Units	*Total*	Houses	Units	*Total*
Dysart	24	1	*25*	26	1	*27*
Moranbah	79	11	*90*	114	10	*124*
Middlemount	1	5	*6*	0	1	*1*
Total	*106*	*9*	*115*	*140*	*12*	*152*

Source: Realesate.com.au/Invest Accessed 14 April 2019

As shown in Table 27, the median sales price for houses in Moranbah in the year to 31 December 2017 was $185,000, which had increased to $200,000 (by 8.1%) in the year to December 2018. Compared to the same period six years ago (when housing prices were highly inflated by demand), the median house sales price for houses had decreased by 71.4% which equates to an average annual rate of -14.3%.

Dysart did not experience the same surge in residential building as Moranbah during 2010-2013, and the housing stock is generally older and with less diversity of housing types. In Dysart, the median sale price was at $71,250 for the year to 31 December 2017, which had increased to $85,000 (by 19.3%) in 2018. Limited data were available for Middlemount which has a very small private housing market, and had no houses listed for sale at March 2019.

Table 27: Median house sale prices in Dysart and Moranbah

Town	2018 Median	2017 Median	1 Year change	2013 Median	2013-2018 change	2013-18 Average Annual change	Price range March 2019	
Dysart	$85,000	$71,250	19.3%	$580,000	85.34%	17.07%	$85,000	$250,000
Moranbah	$200,000	$185,000	8.1%	$700,000	71.43%	14.29%	$165,000	$650,000

Source: Realestate.com Investor Information. 28 March 2019.

The range of asking prices for houses at the end of March 2019 (Table 28) was:

- in Dysart, $85,000 for an older three bedroom house, to $250,000 for a four bedroom, newly renovated house; and
- in Moranbah, $165,000 for a relatively modern style three bedroom house, to $650,000 for a five bedroom modern house.

In December 2018, local median housing prices were less than half the Mackay LGA's median and approximately 87% of the Central Highlands median price.

Table 28: Housing costs trends – sale prices

Area	2012	2017	2018
Central Highlands (LGA)	$400,000	$160,000	$184,000
Isaac (LGA)	$530,000	$140,000	$160,000
Mackay (LGA)	$420,000	$320,000	$335,000

Source: Department of Natural Resources and Mines. 2018. SERIES: Attached and detached dwellings: median sale price.

3.4.6 Rental housing

Collectively, there were 92 rental dwellings listed on the private market in the communities of interest in September 2018, including 84 houses and 8 units, with 47.8% of those in Moranbah and 47.8% in Dysart. In April 2019, the total number available had increased to approximately 107 rental dwellings, (see Table 29) with 53.3% of those in Moranbah. 36.4% in Dysart and 10.2% in Middlemount.

Table 29: Rental Dwellings at September 2018 and April 2019

Town	Sep-18		Mar-19		Sep-18			April-19		
	Median Rent		**Median Rent**		**Rental Listings**			**Rental Listings**		
	Houses	**Units**	**Houses**	**Units**	**Houses**	**Units**	**Total**	**Houses**	**Units**	**Total**
Dysart	$175	$150	$180	$165	42	2	44	35	4	39
Moranbah	$300	$310	$350	$350	38	6	44	46	11	57
Middlemount	$250	$243	$250	$250	4	0	4	6	5	11
Total					84	8	92	87	20	107

Source: RealEstate.com.au Invest Accessed September 2018 and April 2019

At April 2019, median rents were lowest in Dysart at $180/week for a house and $165/week for a unit, and highest in Moranbah at $350/week for a house and $350/week for a unit[46].

Based on a small number of available rental dwellings, median rents in Middlemount were $250/week for units and houses. By comparison, median rents in the Mackay postcode were $300/week for houses and $230/week for units in the same period, confirming that the Isaac rental housing market has normalised.

Whilst housing affordability improved markedly in local communities between 2013 and 2016, Department of Social Services data indicate that at June 2016, 33.7% of Moranbah residents and 19% of Broadsound-Nebo SA2 residents on low incomes in private rentals were paying more than 30% of their gross income in rent[47]. This is a sign of housing stress (which compromises family resources and housing security), and a reminder that increases in housing prices can rapidly affect low incomes households' wellbeing.

[46] RealEstate.com.au Investor Information – Rental data last updated 14 April 2019

[47] Torrens University Public Health Information Development Unit. 2018.

Rental vacancy rates provided by SQM Research indicate that at the end of February 2019:

- Dysart had a vacancy rate of 4.0%, down from 6.3% in February 2018 and from 12.0% five years previous in February 2014;
- Moranbah had a rental vacancy rate of 1.5%, the same rate as in February 2018 and down from 8.5% in February 2014; and
- in Middlemount, the vacancy rate was 1.1%, down from approximately 2.5% in February 2018 and 3.8% in February 2014 (noting there is a small private rental pool in Middlemount[48]).

These data indicate that, following the dramatic slump during 2013-2014, demand for rental housing in the three towns has increased strongly during the past five years. Part of this demand has been driven by the local population, as young people and key workers are now able to afford rental housing. Demand has also been driven by people attracted to the towns for their affordable housing and lifestyle. The REIQ classes rental markets into three categories: 'weak'(a vacancy rate of 3.5% and over), 'healthy' (2.5-3.5%) or 'tight' (0-2.5%)[49]. On this basis Moranbah's rental market would be considered tight and Dysart's healthy, however Dysart has a relatively small rental pool and increased demands could see its rental market classified as 'tight'. If vacancy rates remain below 2.5%, experience indicates that rental price increases are likely.

It is possible that rental vacancy rates are higher than the listed figures because most houses owned by mining companies are privately managed by the companies and not registered by the market. This was an observation noted during consultation for the SIA.

3.4.7 Social housing and homelessness

In 2016 there were 68 dwellings in Moranbah which were identified in the as social housing (owned by either the State or a community or church organisation), 13 social housing dwellings in Middlemount, and 20 social housing dwellings in Dysart. This equated to 2.5% of occupied dwellings in Moranbah and Middlemount, and 2.6% of occupied dwellings in Dysart, which was lower than the Queensland average (see Table 30).

The key social housing providers in the Moranbah/Dysart area are Emergency and Long Term Accommodation Moranbah (ELAM) which manages a portfolio of public and community-owned housing in Moranbah and Dysart, and the Isaac Affordable Housing Trust (IAHT), a not for profit organisation which manages recently constructed affordable housing in Moranbah, Dysart and Clermont. Consultation with ELAM and the IAHT indicates that both have experienced a surge in occupancy over the past 12 months and effectively all of their properties are occupied.

Consultation with service providers also indicated that increasing demand has recently seen rental housing choices restricted. They also noted that DPHW's policy which allocates public housing to tenants from across Queensland has seen increases in demand for support services.

[49] REIQ. 2018.

Table 30: Social Housing 2016

Social housing type	Moranbah SSC		Dysart SSC		Middlemount SSC		QLD
	No.	%	No.	%	No.	%	%
State authority rental	65	2.5%	17	2.1%	8	1.6%	3.2%
Community church rental	3	0.1%	3	0.4%	5	1.0%	0.5%
Total Social Housing	68	2.6%	20	2.5%	13	2.6%	61,533

Source: ABS 2016 Census - General Community Profiles for SSC, LGA and QLD STE.

Estimates of the prevalence of homelessness in the SA2 Study area, based on the 2011 and 2016 Census are presented in Table 31 and indicate approximately 29 people within Moranbah SA2 were homeless in 2016, and a further 14 people were homeless across the Broadsound-Nebo SA2. The ABS recorded a decrease in homelessness between 2011 and 2016 which is likely to reflect the improvement in housing affordability, however local services are seeing an increase in support demands for people who moved to the area for work without securing permanent accommodation, and demands associated the number of lower socio-economic households moving to the LGA.

Table 31: Homelessness estimates

Homelessness estimates	2011	2016
Moranbah SA2	74	29
Broadsound – Nebo SA2	25	14

Source: 2049.0 - ABS Census of Population and Housing: Estimating homelessness, 2011 and 2016

3.4.8 Short-term accommodation

Short-term, temporary accommodation facilities in the local area are listed in Table 32 and include:

- four hotels/motels and one caravan park in Dysart;
- seven hotels and serviced unit complexes and two caravan parks in Moranbah; and
- four hotels/motels in Middlemount.

Short-term accommodation is primarily used for accommodation of mine and railway workers, sales businesses, public service, and social services staff.

Table 32: Short-term accommodation, SIA Local Study area

Facility	Moranbah	Dysart	Middlemount
Moranbah Motor Inn	✓		
Moranbah Drovers Rest Motel	✓		
Black Nugget Hotel/Motel	✓		
Moranbah Outback Motel	✓		
Western Heritage Motel	✓		
Moranbah Isaac Motel	✓		
Coal Country Caravan Park	✓		
Oaks Moranbah	✓		
Jolly Collier Motel		✓	
Country Roads Motor Inn		✓	
Middlemount Hotel / Motel			✓
Swag Motel			✓
Oaks Middlemount			✓
Capricorn Villas			✓

Source: Google Maps and Business Listings.

3.4.9 Workforce accommodation

QGSO's estimate of the number of WAV beds in the Isaac LGA since 2006 is shown in Figure 11. The number of beds increased sharply during 2010-2013 to reach 21,745 beds. During the following contraction in the mining industry, the number of beds fell (as WAV sections were mothballed or decommissioned) and in June 2018, there were an estimated 18,780 beds.

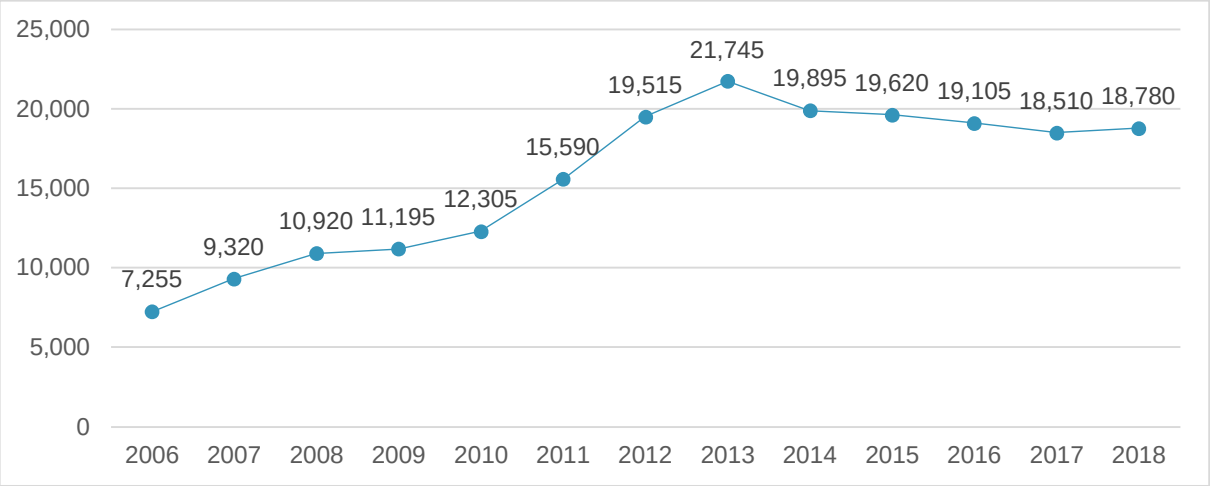


Figure 11: WAV Beds Isaac LGA 2006-2018

Source: Queensland Government Statistician's Office (QGSO). http://www.qgso.qld.gov.au/index.php (Accessed 2019).

Data provided by IRC indicate that at June 2018, there was a total of 18,752 existing WAV beds in the Isaac LGA, with a total approved capacity of 31,288 beds (see Annex A, Table A-2).

BMA owns one WAV in Dysart (BMA Dysart Village) and four villages in or near Moranbah (Moranbah SPV BMA Village, Buffel Village, Daunia Mine Village and Curtin House, which is currently closed). The Eureka Village provides accommodation exclusively for BMA's Goonyella Riverside personnel so has been considered as part of in the total number of rooms available to BMA.

IRC data indicate:

- Dysart has a total of 3,275 existing beds and a total approved capacity of 3,670 beds, including a potential additional capacity of 395 beds; and
- Moranbah and surrounds (within approximately 30 km) have a total of 6,111 existing beds and a total approved capacity of 14,104 beds, including a potential additional capacity of 7,993 beds; and
- Middlemount has a total of 2,300 existing beds and a total approved capacity of 2,729 beds, including a potential additional capacity of 429 beds.

BMA-owned WAVS included:

- in Dysart, one WAV with 430 existing beds and a total approved capacity of 691 beds, including a potential additional capacity of 261 beds; and
- in or near Moranbah, four existing WAVs with 3,557 beds (including the currently closed Curtin House) and a total approved capacity of 7,060 beds, including a potential additional capacity of 3,503 beds, of which 3,000 are conditionally approved for the Red Hill Mining Lease Project and 503 are approved for Buffel Village.

3.5 Health and community wellbeing

According to the World Health Organisation (1948), health is 'a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'. An extensive range of factors (health determinants) influence and indicate the level of health and wellbeing in a community. Indicators of community health and wellbeing are discussed below.

3.5.1 Socio-economic factors

Findings from a review of relevant demographic, socio-economic and population health statistics for Isaac region indicate relatively low levels of socio-economic vulnerability to ill health, including:

- high individual and household incomes, although household incomes in Isaac LGA have declined by an average -17% between 2016 and 2011 which can create stress and vulnerability around established financial commitments (see 3.2);
- a lower proportion of residents in Isaac LGA (compared to Mackay LGA and the State) modelled to have experienced barriers to accessing health care as a result due to cost (see Table A-3 in Annex A)50; and
- 1.8% of Isaac LGA's population had a need for core assistance, compared to 5.2% for Queensland.

[50] REMPLAN 2018a. Isaac Regional Council Community Profile

Ageing is also a key determinant, as the risk of poor health increases with age. As shown in 3.2 the Isaac LGA has a young population with just 5.4% over 65 years in the Isaac LGA compared to 15.3% for Queensland.

Representation of Aboriginal and Torres Strait Islander residents (who generally experience poorer health outcomes than non-Indigenous people) was below the State average (3.6% compared to 4% for Queensland). However, income and housing measures for Isaac LGA indicate distinct inequities between Indigenous and non-Indigenous residents (see Section 3.2.3).

Housing stress is a cause of individual and family stress, and often of poor health as it reduces disposable income for resources to support health. As discussed in Section 3.3, residents of Dysart, Moranbah and Middlemount generally have access to good quality affordable housing, and levels of housing stress are likely to be low in the Isaac LGA, due in part to the currently affordable private rents and in part to subsidised rents.

However, many property owners in the communities of interest have experienced emotional and financial stress as a result of declining property values over the past four years. Increased mining activity in the Isaac region and a subsequent increase in business confidence are likely to see a slow but steady increase in housing values in the mining towns over the next few years, which will be positive for the health of these property owners.

3.5.2 Physical and mental health

The following analysis is based on a comparison of Isaac LGA indicators with Mackay LGA and the Queensland average indicators sourced from the Social Health Atlas of Australia (PHIDU)[51], published in July 2018. Data considered are provided in Annex A Table A-3.

Modelled population health estimates for 2014-15 based on an age-standardised rate per 100 people suggest that in Isaac LGA:

- slightly more people self-rated their health as fair or poor compared Queensland as a whole (ASR 17.4 compared with 16.4 and 15.4 respectively);
- more people aged 18 years or over had at least one of four health risk factors (smoking, high alcohol use, obesity, or no / low exercise levels in the previous week (ASR 86.5 compared with 79 for Queensland);
- more people aged 18 years or over had high blood pressure (ASR 28.2 compared with 23.2 for Queensland); and
- more people aged 18 years or over were obese (ASR 37.4 compared with 29.3 for Queensland).

Residents of Isaac LGA were modelled to have higher hospital admission rates for injury, poisoning and other external causes (3,528.2 per 100,000 compared to 2,953.9 per 100,000 for Queensland), and for parasitic and infectious diseases (admissions modelled at 579.7 per 100,000 compared to 553.2 per 100,000 for Queensland).

[51] Torrens University Public Health Information Development Unit, July 2018

However, there were lower than average rates of admissions for other diagnoses including cancers (587.5 per 100,000 compared to 3,027.8 per 100,000 for Queensland), mental health (545.1 per 100,000 compared to 796.1 per 100,000), and circulatory (1,732.5 per 100,000 compared to 2,445.2) and regulatory system diseases (ASR 1,789.7 compared to 1,919.0 for Queensland).[52]. This partially reflects the youth of the Isaac population and the nature of their work and leisure pursuits.

3.5.3 Indigenous health

Queensland Health data on the burden of disease in Queensland's heath and hospital service (HHS) regions was released in 2017 based on 2011 data. For the Mackay HHS region, the data indicates that Aboriginal and Torres Strait Islander residents experienced 2.1 times the expected burden of disease and injury compared to Queensland non-Indigenous rates. The leading causes were mental disorders (21%), cardiovascular disease (14%), cancers (10%), diabetes (9%), chronic respiratory disease (8%) and unintentional injuries (5%). As a result, there was an 11.8-year gap in health adjusted life expectancy between Aboriginal and Torres Strait Islander residents in the HHS region and the total Queensland population[53].

Consultation by Elliott Whiteing in 2017 with Queensland Health's Aboriginal and Torres Strait Islander Health Unit (Central Queensland Division) indicated that the key health issues being experienced by Indigenous people remained generally consistent with the 2011 findings[54]. It was affirmed that social health determinants (including over-crowding, educational attainment and employment participation) were key issues. It was also noted that Indigenous people in the Isaac and Mackay LGAs were displaced from housing and their communities during the last boom period, with consequences for individual and family health, and that this remains a key risk if cumulative impacts are experienced.

Key priorities for Aboriginal and Torres Strait Islander Health in the CQ region include mental health and improved participation of Indigenous people in sustainable employment. It was noted that Indigenous people often require emotional and social support (including budgeting and planning for long term goals) to ensure their jobs are sustainable and make a difference to their families. Traineeships and apprenticeships in mining, stock handling (on mining owned properties) and care of land acquired for offsets were mentioned as employment opportunities.

3.5.4 Mental health

Mental illness is common, potentially affecting 20% of the community in any 12-month period. Women experience higher rates of 12-month mental illness (22%) than men (18%), with higher rates of anxiety and mood disorders, however, men have twice the rate of substance use disorders (7.0% compared with 3.3% for women). Suicide is the main cause of premature death among people with a mental illness.[55]

The age standardised rate of suicide deaths per 100,000 population between 2010 and 2014 was higher in the Isaac LGA (ASR 15.5) than the Queensland and Australian averages (13.6 and 11.7 respectively)[56].

[52] Torrens University Public Health Information Development Unit, July 2018

[53] Queensland Health 2017b

[54] Elliott Whiteing. 2018.

[55] ABS. 2008.

[56] Torrens University Public Health Information Development Unit. 2017. cited in Flat au, P. Centre for Social Impact, The University of Western Australia. 2017.

This section considers findings from the Queensland Government's Mental Health Activity Data Collection (MHADC) data set for the Moranbah and Broadsound-Nebo SA2s, for the three-year period from July 2012 to June 2015. The data show that the number of service contacts fluctuated over the three-year period, but with a general upward trend, and a peak for both SA2s in June 2015 (273 for Moranbah SA2 and 277 for Broadsound-Nebo SA2).

Figure 12 presents the three-year trend in specialised mental health service contacts[57] for residents in the two SA2s, presented at six monthly intervals. The data show that the number of service contacts fluctuated over the three-year period, but with a general upward trend and a peak for both SA2s in June 2015 (273 for Moranbah SA2 and 277 for Broadsound-Nebo SA2).

For Moranbah SA2, the numbers of service contacts were lower during 2012, but increased during 2013-2014, with spikes in February for both years (refer to Figures A-2 and A-3 Annex A). The volume of service contacts fluctuated during 2014 but increased again during the first half of 2015, with a three year peak of 273 in June 2015.

Service contacts followed a similar trend in the Broadsound-Nebo SA2, but with several months where service contacts were higher than in Moranbah SA2 (from a lower population base), indicating potential vulnerability to changes such as the loss of employment and declining business trade.

Analysis of service contacts indicate increased frequency in the use of mental health services but doesn't distinguish whether the number of contacts are attributed to distinct consumers. Analysis of distinct consumers accessing clinical mental health services (data is available in Annex A, Figures A-2 and A-3) also showed a general upward trend in the number of consumers, peaking in June 2015 with 93 consumers in Moranbah SA2 and 54 consumers in Broadsound Nebo SA2.

The increasing numbers of consumers could be attributed to an increasing prevalence of mental illness or mental health conditions in the resident population, or the influence of external factors (for instance financial and housing stress) but could also be the result of better access and promotion, leading to an increased uptake of services.

[57] Service contact is defined as: "The provision of a clinically significant service by a specialised mental health service provider(s) for patients/clients, other than those patients/clients admitted to psychiatric hospitals or designated psychiatric units in acute care hospitals, and those resident in 24 hour staffed specialised residential mental health services, where the nature of the service would normally warrant a dated entry in the clinical record of the patient/client in question".

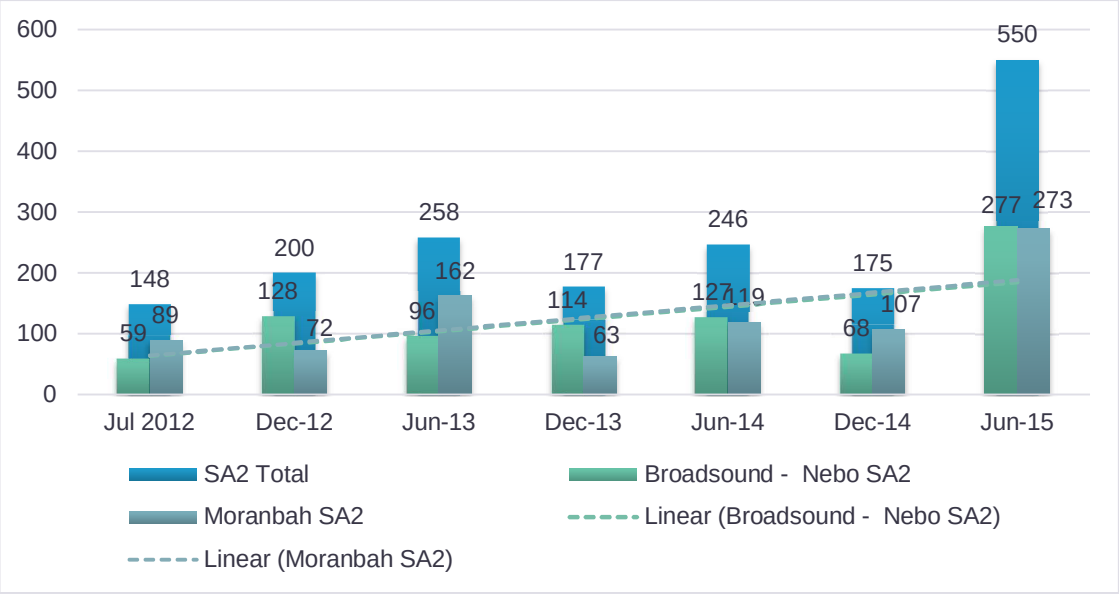


Figure 12 : No. of specialised mental health service contacts Jul 2012-June 2015

Source: Queensland Health, Queensland Government, Mental Health Activity Data Collection

3.5.5 Mental health in the mining industry

The Minerals Council of Australia (MCA) Blueprint for Mental Health and Wellbeing[58] describes mental health as "the ability to cope with life stresses and the fulfilment of goals and potential', which is critical to overall health and wellbeing. A mental health problem is defined as symptoms such as changes in emotion or behaviour not of sufficient severity to be diagnosed as a mental disorder, whilst a mental health disorder is defined as 'a clinically recognisable set of symptoms or behaviours associated with distress and with interference with personal functions'.

Whilst there is limited evidence on the extent of mental illness in the mining industry, 2012 research by the University of Newcastle and Hunter Institute of Mental Health indicated that, based on an average of 41,264 mining employees in NSW in 2011, between 8,000 and 10,000 people would experience mental illnesses in any 12-month period. This included approximately 5,777 employees likely to have experienced an anxiety disorder, 2,500 who would have experienced depression and 2,000 who would have experienced a substance use disorder[59]. The report cites research findings that risks are compounded by living alone, lack of local networks and high physical demands, whist long working hours and associated fatigue have been demonstrated to be associated with increased risks of depression and anxiety. The report notes that the lack of awareness of mental health issues and a 'macho culture" can be barriers to obtaining care and advice, and a supportive environment in the workplace can help address this problem.

Mental illness affects the industry through absenteeism, presenteeism (coming to work while unwell), injuries and lower productivity. The MCA's Blueprint notes that workplace mental health programs delivering significant returns including improvements in staff engagement and morale, improved productivity, improved organisational adaptability, better health and safety, and reduced staff turnover.

[58] Minerals Council of Australia. 2015
[59] University of Newcastle and Hunter Institute of Mental Health 2012.

3.5.6 Safety and security

Modelled estimates from 2014 indicate the 61.8% of people aged over 18 years in the Isaac region felt safe or very safe to walk alone in their local area after dark, compared with 46.8% of 100 people in Mackay LGA and 50.9% for Queensland. This suggests that perceptions of community safety in Isaac LGA are better than average[60].

Analysis of crime trends was undertaken using the QRSIS Offices data for Isaac LGA, the MIW region and Queensland for the period 2011/12 - 2015/16. Rates are expressed as the rate per 100,000 people. Crime trends include:

- the Isaac's LGA's rate of offences against the person has remained stable over the five years, whilst the rate of offences against property has dropped, as has the rate of total offences; and
- Isaac's offence rates were substantially lower than the regional and State averages. For example, the rate of total offences was 47% lower than the State rate, and 45% lower than the regional rate.

Whilst some community members have historically expressed concern that the concentration of NRW in local towns could accelerate crime rates, inputs from police officers in the LGA indicate that workforce accommodation facilities are a low source of call outs, as behaviour is generally strictly managed with breaches resulting in loss of accommodation. However, it was also noted that early advice regarding mine workforce and accommodation arrangements assists police and other emergency services to plan effectively for the region.

3.5.7 Domestic and family violence

Consultation participants (including community service providers and police) provided anecdotal evidence of an increase in domestic and family violence (DFV), influenced by the economic downturn, and drug and alcohol use.

In August 2017, as part of the Queensland Government's response to domestic and family violence (DFV), the Department of the Premier and Cabinet (DPC) commissioned the Queensland Government Statistician's Office (QGSO) to conduct the Queensland Social Survey 2017 (QSS). Findings of note included an average 16.2% of Queensland residents reported being aware of DFV involving a family member or close friend in the last 12 months and 10.7% were aware of DFV involving a neighbour over the same period[61].

Queensland Courts' DFV statistics for Mackay Magistrates Court[62] identifies that 753 Domestic Violence Orders (DVO) were initiated through the Mackay court in 2017/18 (see Table 33). This was an increase of 20.87% on applications lodged five years earlier, but down -3.83% on applications initiated in the previous twelve months. Comparatively, Queensland also experienced a 19.89% increase in applications lodged over five years, but a drop of -5.27% in the previous twelve months. Of note, both jurisdictions recorded a substantial increase between 2014/15 and 2015/16 which suggests a change in policy or reporting methodologies at this time.

[60] Torrens University. Public Information Development Unit. 2018.

[61] QGSO. 2017a.

[62] Queensland Courts. 2018.

A count of all offences relating to contraventions of DVOs lodged with the Mackay Magistrates Court in 2017/18 is also provided in Table 33 and shows a 100.40% increase in contravention charges lodged in Mackay over five years, but a drop of -5.51% in the previous twelve months. For Queensland, the count over five years increased 78.73%, but had dropped by 3.18% in the last twelve months.

Table 33: Magistrate Court DVO applications and Contravene charges lodged, Mackay and Queensland total, 2013/14 to 2017/18

DVO applications (initiated)							
District	2013/14	2014/15	2015/16	2016/17	2017/18	12 month change %	Total change
Mackay	623	639	791	783	753	-3.83%	20.87%
QLD	25,340	26,800	32,252	32,072	30,381	-5.27%	19.89%
Contravene DVO charges lodged							
Mackay	248	259	465	526	497	-5.51%	100.40%
QLD	11,187	13,321	19,035	20,650	19,994	-3.18%	78.73%

Source: Queensland Magistrates Court. 2018

3.5.8 Road safety

The cumulative traffic volumes of mining projects have led to ongoing road safety issues in the Isaac LGA, with particular concern about the Peak Downs Highway's poor safety record.

A 2016 report by Central Queensland University[63] (CQU) researchers aimed to assess the mining impacts of road travel conditions in the Bowen Basin. The research used a case study approach including a travel survey with 70 households Moranbah and Emerald. Social impacts identified by Moranbah and Emerald households as part of the research included:

- increased traffic leading to congestion, which impacts on travel time;
- deterioration of road pavements due to truck weights;
- increased demands on emergency services to respond to accidents and over-sized vehicle escorts;
- safety issues associated with fatigued or inattentive commuters;
- dust from vehicle movements on unsealed roads;
- impacts on the movement of farming harvests and stock; and
- disruption of school buses and other public transportation.

Queensland Police in the Isaac LGA confirmed that escorting wide loads was an ongoing demand on resources, however it is managed by enabling police to escort loads on a private basis when they are off shift.

[63] Akbar, D., Kinnear, S. Chhetri, P. and Smith, P. 2016.

A review of the latest available crash data in the SIA Study Area[64] showed a total of 39 crashes were recorded in the five years between June 2012 and June 2017, of which 1 was fatal (see Table 34). the largest proportion of the accidents occurred on Dysart Road (44%), followed by Goonyella Road (38%). Dysart Road between Peak Downs Highway and Lake Vermont Road is approximately 51.4 km. As there were 17 accidents in the past five years, that is equivalent to an average accident rate of 0.33 accidents per kilometre.

Table 34: Crash Data, 2012-2017

Severity	**Number of crashes**	**Percentage of total crashes**
Minor injury	2	5%
Medical treatment	13	33%
Hospitalisation	23	59%
Fatal	1	3%
Location	**Number of crashes**	**Percentage of total crashes**
Peak Downs Highway	4	10%
Dysart Road	17	44%
Goonyella Road	15	38%

Source: AECOM. 2018. SEMLP. Transport and Traffic Impact Assessment

3.5.9 Natural resources

Access to water resources

The SIA Study Area is serviced by town water supply, however mining companies hold water allocations for Moranbah, Dysart and Middlemount, and IRC relies on agreements with industry for town water allocations.

Under the Queensland Government's Building our Regions program, Queensland Government with Isaac Regional Council are investing in critical water infrastructure upgrades in the region. These works include an upgrade of Dysart's Water Treatment Plant, including construction of a new 5 megalitre raw water storage tank; new dissolved air flotation (DAF) pre-treatment facility; new granular activated carbon (GAC) filters; and new associated pumps, mechanical and electrical works. The Dysart's water treatment plant upgrade program in recent years has been supported by a BMA financial contribution.

Building our Regions has also contributed $10.59 million to the Moranbah Reservoir and Associated Works, which is expected to increase the existing plant's one-day water storage capacity to up to three days, involving upgrades to the reticulation network, supply main and feeder mains to ensure supply meets the catchment's needs and firefighting requirements[65].

Groundwater remains a critical resource for surrounding grazing and grain production operations.

[65] Isaac Regional Council. 2017.

Air quality

The Department of Environment and Science (DES) monitors PM10 in Moranbah and publishes the data hourly on its website. Monitoring data are not available for other communities in the Isaac region.

The data for Moranbah indicate that in the first nine months of 2017, the level of PM10 was generally below the recommended air quality standard for 24-hour exposure to PM10, with a total of 13 days during the period when the recommended standard was exceeded (twice in July, four times in August and seven times in September). However, the level of PM10 approached the standard on many occasions throughout the nine months, and the maximum level recorded during the period was 72.8 µg/m366. This is an indication that dust may be problematic in Moranbah.

The findings of the Project's air quality assessment are summarised in Section 4.4.4.

3.6 Social infrastructure and services

Potentially affected communities were planned and developed with a comprehensive range of community, health and emergency services, also cultural and recreational facilities. Social infrastructure has been maintained and enhanced over time by Councils, Government agencies and mining companies' community investments. BMA has made significant contributions to developing and enhancing Moranbah and Dysart through investment in housing, community programs and facilities, Moranbah's water supply network, and road infrastructure. BMA also developed and operates the Moranbah Airport and owns the Dysart Airport (3.5 km south of the township) which provides access to the Royal Flying Doctor and Medivac Services.

Issues described by SIA stakeholders include:

- cumulative impacts of mining industry growth are straining health and emergency services, particularly as NRW are inadequately considered in Government planning;
- there is capacity within local schools to grow, but school resources are being stretched as the result of student turnover and new or transient families with complex needs;
- service deficits including:
    - residential and support services for ageing population;
    - increased sporting opportunities and community resources to support them in Dysart;
    - disability support and employment pathways, mental health and allied health;
    - childcare which responds to shift workers' needs;
- limited entertainment/recreation for young people in Dysart, with resulting unsafe behaviours;
- recruitment and retention of community services and government staff is challenging; and
- increasing numbers of transient families have seen increased social and health issues (e.g. drug use and family violence).

[66] Department of Environment and Heritage. 2017b

3.6.1 Early childhood services

The IRC LGA has a total of 11 early childhood education and care services, including five long day care services and one school aged care services[67] (shown in Table 35).

In 2016, 11.2% of Moranbah's population was aged under 5 years (comprising 979 children), which was a stronger representation than for Queensland (6.3%). As shown in Table 35, Moranbah has four early childhood services which includes two child care centres and one kindergarten, two family day care services, and playgroup. Service monitoring by Elliott Whiteing since 2016/17 indicates the potential loss of 1-2 childcare service listings in the last 18 months.

Dysart has one day care program and one kindergarten, with two playgroup listings. In 2016, Dysart was home to approximately 277 children aged under 5 (representing 9.2% of the population, compared to Queensland's 6.3%). Middlemount has one facility and one playgroup network. In 2016, Middlemount was home to 210 children aged under 5 years (representing 11.4% of the population, which is also higher than Queensland's average). Service monitoring by Elliott Whiteing since 2016/17 suggests at least one, possibly two services have closed in the last 18 months.

SIA consultation indicated that:

- available childcare places were limited in each town, with Middlemount experiencing particularly high demand;
- more flexible childcare options are required for shift workers; and
- additional out of school hours childcare places are required for parents doing 12 hour shifts.

Table 35: Early Childhood Facilities, Services and Networks

Location	Early Childhood Facilities, Services, Networks	Facility	Service	Network
Dysart	Lady Gowrie Dysart Child Centre and Community Space	1	1	2
	Dysart Kindergarten			
	Playgroup Queensland – Kiddy Koalas, Mulligrubs			
Middlemount	C&K Middlemount Community Childcare Centre Playgroup Queensland – Mulligrubs	1	0	1
Moranbah	Simply Sunshine Childcare	3	3	3
	Moranbah Early Learning Centre			
	Bright Beginnings Family Day Care			
	Bright Kids After School Care			
	C&K Moranbah Community Kindergarten and Preschool			
	OwletSitter Family Day Care Service			
	Little Peeps Family Day Care			
	Playgroup Queensland			

[67]QGSO. 2018e. Queensland Regional Profiles

Source: Australian Children Education and Care Quality Authority (ACECQA). Starting Blocks 2018; MyCommunityDirectory. 2018

3.6.2 Schools

As shown in Table 36, the Project's nearby communities are serviced by:

- three public primary schools, including one in Dysart and two in Moranbah;
- two secondary schools, in Dysart and Moranbah; and
- the P-12 Middlemount Community School Middlemount (established from the amalgamation of the primary school (est. 1980) and high school (est. 1988) in 2000). [68]

In 2016, children aged 5-15 years made up 18.9% of the LGA population, including 511 in Dysart (17.1% of the Dysart population), 1,518 children in Moranbah (17.4% of the Moranbah population), and 301 children in Middlemount (16.3%).

In SIA consultation, all local schools indicated that new enrolments are welcome and schools have capacity for increased enrolments, with adequate notice of workforce ramp-up and population increases.

Table 36: Primary and secondary education facilities

Location	School	Primary	Secondary
Dysart	Dysart State School	1	1
	Dysart State High School		
Moranbah	Moranbah East State School	2	1
	Moranbah State School		
	Moranbah State High School		
Middlemount	Middlemount Community School	1 (merged)	

Source: Desktop research, updated 5 March 2018

Day 8 enrolment figures for the five-year period from 2014-2019 (see Table 37) indicate Moranbah schools experienced increases in enrolments of at least 10% during 2018 and 2019, indicating an increase in the number of families living in town over the past year, which service providers advise is due to both new families and those returning to town as employment opportunities have increased. Dysart schools have experienced a small decrease in enrolments indicating that population growth has not been as strong here.

[68] Ibid.

Table 37: School enrolments, Day 8 2014-19

School Name	2015	2016	2017	2018	2019	1 yr change (no.)	1 yr change (%)	5 yr change (no.)	5-year annual average change
Moranbah East State School	642	687	606	575	650	75	13.0%	8	1.2%
Moranbah State School	548	563	559	574	634	60	10.5%	86	15.7%
Moranbah State Schools Total	1190	1250	1165	1141	1284	143	12.5%	94	7.9%
Moranbah State High School	625	607	622	647	687	40	6.2%	62	9.9%
Moranbah Schools - All	1,815	1,857	1,787	1,794	1,971	177	9.9%	156	8.6%
Dysart State School	355	356	361	349	335	-14	-4.0%	-20	-5.6%
Dysart State High School	151	167	178	174	159	-15	-8.6%	8	5.3%
Dysart Schools - All	506	523	539	520	494	-26	-5.0%	-12	-2.4%
Middlemount Community School	391	363	308	245	257	12	4.9%	-134	-34.3%

Source: Queensland Department of Education and Training. 2019. Day 8 Enrolment Figures

3.6.3 Further education and training

The Coalfield Training Excellence Centre (CTEC, or Big Blue Shed) facility is a highly valued community asset, established through a BMA-community-Department of Education and Training partnership, which facilitates and delivers local training and employment outcomes. It is also a valued support for career pathways, setting requirements for applicants to demonstrate clean disciplinary records and strict criteria for behaviour. CTEC is currently only available to Moranbah High School Students[69] some of whom were trained by CTEC.

In January 2018, BMA welcomed its largest intake of local apprentices in several years, with 40 new apprenticeships created across its Bowen Basin mines, and in 2019, this had increased to 45 apprenticeships.

Central Queensland Institute of TAFE has campus hubs at Emerald and Mackay and identifies itself as the lead provider of training to the mining industry in Queensland[70]. It offers relevant training in skills and competencies required for employment in the mining industry, courses in various trades as well as in areas such as hospitality.

[69] Mackay Daily Mercury, Bailey, P. 23 January 2018. **40 apprentices start with BMA**

[70] Central Queensland Institute of TAFE. 2018

The Isaac LGA has no local access to university courses (except via online resources), however there are several local training services and facilities with a focus on training for employment in the mining industry. Additional training services available at Mackay also service the localities within the SIA Study Area. James Cook University has a small campus based at the Mackay Hospital's Education and Research Centre (MERC), enabling medical, social work and dental clinical placements.

The MIW Regional Plan identified that a lack of tertiary education facilities in the region can result in young people relying on obtaining employment in the mining industry or leaving the region[71].

3.6.4 Primary health services

Primary health services in the SIA Study Area are presented in Table 38. Additional primary and allied health services are provided by the Mackay Hospital and Health Service, with hospitals in the SIA Study Area based at Moranbah and Dysart, and a nurse-led Community Health Centre provided at Middlemount.

SIA consultation participants noted:

- increased demands on Hospital, GP and mental health services during the past year, as a result of both population increases and FIFO workers' demands, however a lower level of demand than was experienced during the 'peak years of 2011-2013;
- most specialist services have to be accessed in Mackay (two hours away) or other regional centres, and none of hospitals in Isaac LGA operate birthing facilities, which is expensive and stressful for young families;
- skilled health worker recruitment and retention was one of the biggest challenges;
- hospital service capacity in Dysart was described as adequate, with room to meet growing population needs;
- allied health services in Dysart and Middlemount are growing and there is increasing availability of visiting women's health services through the Hospital and the Dysart Medical Centre;
- in Moranbah, the primary concern was addressing the competition between the health and service needs of local residents in addition to the needs of nearby communities, while also responding to the demand generated by NRW and project sites in the district;
- in Middlemount, service demand was slower in recent years but remained stable. Middlemount patients requiring access to additional health services are supported by the Dysart Hospital and a shared allied health service model between Middlemount and Dysart; and
- population stimulus in Middlemount and Dysart would be welcomed to increase service provision, support the growth of the allied health model, and potentially improve recruitment options.

[71] Queensland Department of Local Government and Planning. 2012

Table 38: Primary health services, SIA Study area

Town	Facility / Service	Practice /Service No.	Practitioners*
Dysart	Dysart Medical Centre	1	1
Moranbah	Oaktree Medical Centre	2	3-4
	Sonic HealthPlus Moranbah		4
Middlemount	Middlemount Medical Centre	1	1

Source: General Practitioners in Isaac LGA, sourced from North Queensland PHN, August 2017. *Note: Counts updated to reflect consultation with service providers in 2018.

Queensland Health's Mackay Hospital and Health Service Rural Services advised the SIA team that a benchmark of one GP to 600 people is appropriate in the local context. This may be an aspirational benchmark based on achieving and maintaining good community health in regional communities, but has not been achieved to date in local towns (or many other areas). With approximately eight GPs currently listed in Moranbah, comparison to this benchmark indicates an undersupply of six GPs, particularly given many NRW and residents from surrounding towns including Dysart, Coppabella and Nebo rely on Moranbah's health infrastructure. Middlemount would require an additional two doctors to reach the benchmark.

In Dysart, there were previously two local doctors serving general practice and hospital service needs, however this has been reduced to one, which – on local evidence of waiting times and an estimated GP rate 1: 3,000 people - is clearly insufficient (by up to four GPs based on the Rural Services benchmark). Dysart residents have noted the loss of specialist services such as a monthly skin surgeon, women's health and gynaecology over the past few years. However, women's health services have recently been re-contracted, and visiting antenatal and gynaecology services are now increasing again through the Dysart Hospital and Medical Centre.

Middlemount currently has one doctor at the medical centre, (two short of the three required by the Rural Services benchmark) and a nurse-led service at the Middlemount Community Health Centre. Middlemount Community Health Centre is developing a shared allied health service model with Dysart to enhance community access to services.

Mental health services are provided through the Moranbah District Mental Health Service, which also provides outreach services to other local towns. Consultation participants noted that cumulative numbers of NRW can represent a substantial load on mental health services and clinical nursing staff.

The recent decline in resourcing for outreach services was also identified by consultation participants, with needs for increased mental health, domestic violence, and youth health services noted.

3.6.5 Hospital and health services

As shown in Table 39, Moranbah Hospital offers approximately 12 beds, general medical services including accident and emergency services, admissions, diabetic education, aged care and outpatient services. Allied health services are provided by Rural Health (Queensland Health) through the Moranbah Community Health Centre, and include speech pathology, physiotherapy and social work. Visiting health services include a psychiatrist, a paediatrician, and the Royal Flying Doctor Service's Women's Health Clinic.

Dysart Hospital has nine beds and one emergency room. Visiting health services include speech pathology, palliative care, alcohol tobacco and other drugs, mental health, and women's health services. Dysart also has funding for a school-based youth health nurse. Middlemount Community

Health service is a nurse-led operation Monday to Friday, with a strong focus on preventative health and women's health.

Patients who require treatment beyond basic services are sent to regional hospitals, the nearest being in Mackay. The recently redeveloped Mackay Base hospital offers specialist services that are not provided in the SIA Study Area such as obstetrics and gynaecology, paediatrics, emergency medicine, orthopaedic surgery, anaesthetics, intensive care, coronary care, psychiatry, aged care; renal medicine, ophthalmology, palliative care, and day surgery.

Table 39: Hospital and Health Service Profile, SIA Study area

Characteristic	Moranbah Hospital	Dysart Hospital	Middlemount Community Health
Number of beds (2017)	Approximately 12 beds	Approximately 9 beds	NA
Hospital services	24-hour acute and emergency care. Clinics include general practice, outpatients and a diabetic education group.	9-bed acute ward and one high dependency / emergency room	NA
Allied health	Speech pathology, physiotherapy and social work.	NA	NA
Visiting services	Psychiatrist, a paediatrician, and the Royal Flying Doctor Service's Women's Health Clinic	Visiting speech pathology, palliative care, alcohol tobacco and other drugs, mental health, and the Royal Flying Doctor Service's Women's Health Clinic	Visiting women's health nurse
Community health / Outreach		Home and Community Care, and meals on wheels	Nurse-led community health screening and support service with a focus on preventative health

Source: Queensland Health. 2017. Hospital and Health Facility Profiles.

3.6.6 Police and emergency services

Each town has a Police Station, Ambulance Station, a fire Station and a State Emergency Service (SES) unit, which service the towns, rural properties, roads and mines (See Table 40). The Magistrates Court House and a Queensland Government Agents Service servicing the LGA are located in Moranbah. SIA consultation indicates that the police and ambulance services have difficulty recruiting and retaining officers, whilst the auxiliary fire brigades and SES struggle to maintain a stable and experienced membership, referring to Dysart in particular.

IRC have advised that Council encountered significant difficulties during Cyclone Debbie as a result of the failure of a number of communication channels. The prohibitive cost of remediation works for existing hardware required to bring the emergency management networks to a reliable standard has led Council is investigate the installation of a new 160 MHz VHF Digital Network, for which it is seeking partnership arrangements with major mining companies operating in the region.

Table 40: Police, Emergency Service and Justice Profile, SIA Study area

Town	Police	Ambulance	Fire	Other	Justice
Dysart	Dysart Police Station (2 Officers)	QAS (2 Officers)	QFRS		
Moranbah	Moranbah Police Station (11 uniformed officers, 3 Criminal Investigation Branch officers and 2 traffic policing officers serving the district	QAS (24 Hr – 1 Officer in Charge, 3 Paramedics)	QFRS	SES Moranbah	Moranbah Court House
Middlemount	Middlemount Police Station (2 Officers)	QAS Station (1 officer)	QFRS		

3.6.7 Community and civic services

Moranbah offers the widest range of community and civic services and community and family support services in the SIA Study Area, as summarised in Table 41.

The Moranbah and District Support Service runs targeted programs including a rural family support program and a Neighbourhood Centre program. ELAM provides assistance for individuals or families in Moranbah and district who are homeless, or in crisis and at imminent risk of homelessness. Centacare also offers community services in Moranbah, employment support services are provided through Community Solutions, and financial counselling is available through the Financial Counselling Service and Salvation Army Moneycare Program. Moranbah's new Youth and Community Centre (due for completion in 2019) will also provide an important meeting place and a wide range of services for community members, especially young people.[72] The centre has been developed through a partnership between the IRC, BMA, local community groups and the Department of Communities, Child Safety and Disability Services.

There are no aged care residential services in the potentially affected communities. Hinterland Community Care (HCC), based in Dysart, offers in-home care and community linking services for the frail, aged and people living with a disability and provides services in Dysart, Moranbah, Nebo, Middlemount and their surrounding districts. Access to aged care is available in Clermont (100 km south of Moranbah), where there are two facilities, and in Mackay.

72 Queensland Department of State Development. 2016e. 9 December.

Table 41: Community and Civic Services

Town	Community and Civic Facilities & Services	Community and Family Support
Dysart	Dysart Civic & Recreation Centre Dysart Community Centre (& Community Development Group Inc) Disability Services Local Area Coordinator Rural Support Worker (Dept. Communities)	Hinterland Community Care Inc (Aged and Disability Support Services)
Moranbah	Moranbah Community Centre Moranbah Youth and Community Centre (construction expected 2019)	Moranbah and District Support Services Emergency and Long Term Accommodation in Moranbah Community Solutions Centrecare Salvation Army Moneycare Program Hinterland Community Care Inc.
Middlemount	Middlemount Community Hall	Capella Tieri Middlemount Community Support Network

Source: My Community Directory, 2018; Yellow Pages 2018

3.6.8 Recreation and cultural facilities

The potentially affected communities offer a wide range of sport and recreation and arts, culture and amenity facilities, with Moranbah having the highest level of provision, commensurate with its larger population.

Moranbah offers a wide range of sport and recreational facilities, and several local associations and hobby groups.

The Moranbah Miners' League Club provides a centre for the strong local focus on rugby league, whilst basketball, netball and other sports are played on the fields at the western end of town. The town pool was redeveloped as the Greg Cruickshank Aquatic Centre through a BMA and IRC partnership in 2012, and is a highly valued facility during the warmer months.

Dysart also benefits from the Dysart Indoor Multipurpose Sports and Recreation Centre, including a new Olympic size swimming pool and offers a range of weekly classes to cater to all ages. Social sports including volleyball, netball and basketball fixtures are also held at the centre.

Middlemount's town centre features the Middlemount Leisure Centre with a gymnasium, and the Middlemount Pool. Middlemount also features a number of modern public exercise equipment sites, sporting ovals and sportsgrounds.

Table 42 summarises the facilities available.

Table 42: Recreation and Cultural Facilities

Location	Sport and Recreation	Arts, Culture, Amenity
Dysart	Dysart Recreation Centre and Swimming Pool Dysart Golf Club Dysart Bowling Club Cycling Centenary Park Lions Park Fox Park Leichardt Oval and Recreation Park Lucy Daly (Soccer) Oval Warren Oval Hickey Oval Netball / Basketball Courts Tennis Courts	Dysart Library and Art Space Dysart Civic Centre
Moranbah	Greg Cruikshank Aquatic Centre Darryl Bourke Oval, Will Kiehle Oval, Ted Rolfe Oval and Eastern Sporting Field Moranbah Speedway and Association BMX Track and Club Moranbah Pony Club and Rodeo Grounds Moranbah Golf Club Moranbah Miners' League Club Moranbah Tennis Courts Moranbah Bowls Club Moranbah Rifle Range and Pistol Club Clubs and organisations including football, hockey, netball, Basketball, Volleyball, Cricket, Gymnastics, Boxing Club, Karate, Fishing, Darts, Motorcycle Riders, Race Club	Moranbah Library Coalface Art Gallery Moranbah Arts Council Moranbah Civic Centre
Middlemount	Netball / Basketball Courts Walking Tracks Ovals (3) and sportsgrounds	Middlemount Leisure Centre Middlemount Library

Source: My Community Directory, 2017; Yellow Pages 2017; DCSG 2011, ULDA 2011

Arts, culture, and amenity

The Dysart Civic Centre is recognised as one of three major venues in the Isaac region for holding performances and functions, in addition to Moranbah's Community Centre (with multiple rooms offering a collective theatre capacity of 900+ seats) and Middlemount's Community Hall (with a 700 seat theatre capacity).

Moranbah has a cultural and civic centre including the art gallery, library and civic centre, providing a home for a range of cultural programs and events. IRC has identified that almost all local arts, culture and heritage activities are managed and presented by volunteers and hobbyists[73]. There is also a community radio station. Both the Moranbah Library and Gallery and the Dysart Library and Art Space are modern facilities that provide an exhibition space for local and regional art, craft and creative practitioners.

3.7 Economic and employment profile

This section describes the labour force and key industries of employment for the Isaac LGA and the broader MIW and Central Queensland regions. Additional data to which the text refers are provided in Annex A Tables A4 – A7.

Community objectives for employment which were identified in SIA interviews and workshops included:

- the need to increase apprenticeship opportunities and employment pathways of young people;
- improving the limited employment opportunities for people with disability;
- provision of permanent employment and long term contracts to encourage the stability of the workforce and the community;
- increasing and retaining skilled workers in local towns, with underground mining seen as specialised and desirable employment;
- the potential for increased local employees to increase the human resource pool for community infrastructure providers and businesses; and
- minimising draw of labour from local businesses to mining operations.

3.7.1 Isaac LGA labour force

Census 2016 data for labour force participation in the Isaac LGA are provided in Table 43. Features included:

- of the 15,641 Isaac residents aged 15 or over, 10,490 people (67%) were in the labour force (either working or looking for work) compared to 61%[74] for Queensland;
- approximately 9.7% of males and 25.8% of females 15 years and over were not in the labour force, reflecting the availability of jobs and the youth of the population;
- the workforce included 337 Indigenous people, of whom 28 (8.3%) were unemployed;
- women represented 40.6% of the workforce, but only 39.9% of employed people, so female unemployment was higher at 2.7% than for men (2.2%); and

[73] Isaac Regional Council. 2011.

[74] ABS. 2016. Census of Population and Housing – Queensland STE.

- approximately 517 people were unemployed, including 230 unemployed men and 288 unemployed women.

The data suggest that whilst employment rates are high in the Isaac LGA for Indigenous people, and for both males and females, there may be an opportunity to increase female and Indigenous participation.

Table 43: Labour force participation, Isaac LGA 2016

Labour force component	Cultural diversity			Gender diversity				
	Indigenous	Non Indigenous	Not stated	Males		Females		Total
	No.	No.	No.	No.	%	No.	%	No.
Persons 15 years+	451	12,681	2,505	8,699	55.6	6,937	44.4	15,641
In labour force (male/female % of total workforce)	337	10,053	97	6,229	59.4	4,260	40.6	10,490 (67%)#
Employed (male/female % of employed people)	308	9,572	96	6,000	(60.2 %)	3,977	(39.9 %	9,972
Unemployed	28 (8.3%)	478 (4.7%)	3	230	2.2	288	2.7	517
Not in the labour force	107	2,498	40	848	9.7	1,793	25.8	2,635
Labour force status not stated	12	135	2,368	1,628	18.7	883	12.7	2,515

Source: Census 2016: Community Profiles. ABS sampling and rounding procedures result in minor variations in totals. # Labour force participation rate

Census 2016 data based on place of usual residence reveal that the Isaac LGA's largest occupational group was machinery operators and drivers at 23.7%, followed by technicians and trades workers at 20.7%. This reflects the LGA's strengths in mining and associated business sectors (e.g. engineering and mechanical maintenance). There was a very low representation of community and personal service workers at 6.1% in, compared to 11.3% at the State level (see Annex, Table A-4) which is an indication of the narrower range of services available in the local towns compared to larger centres, and their reliance on Mackay and other regional centres for specialised support services.

As a result of mining industry contraction and population loss between 2011 and 2016, the number of Isaac LGA usual residents who were employed contracted by 2,097 people. This was led by decreases in employment in mining (of more than 1,000 people) and construction (of more than 400 people). Retail trade and accommodation and food services also experienced relatively large decreases (see Annex A Table A-4).

Mining accounted for 6,024 people working in the LGA in 2016 (42% of employed persons) compared to 2.3% for Queensland. The mining industry's specialisation ratio in the Isaac LGA was very high at 7.66. Health Care and Social Assistance was the second highest employment industry (at 6.7%), followed by Agriculture Forestry and Fishing (6.1%). Construction accounted for 659 employees (4.6%) (see Annex A Table A-6).

As shown in Annex A (Table A-9) mines located in the Isaac LGA and/or serviced by Isaac LGA towns provided approximately 22,291 jobs at 31 March 2018, which was an increase of 1,410 jobs over the previous six months (or 6.8% growth). Open cut mines employed 17,043 people (up by 864 people or 6.2%) and underground mines employed 4,888 people up by 555 jobs or 12.8%).

Noting that 6,024 residents of the Isaac LGA worked in mining in 2016, these data indicate that LGA is a significant importer of labour.

3.7.2 Indigenous employment

At the 2016 Census, there were an estimated 3,310 Indigenous people in the labour force in the Mackay SA4, and an estimated 4,487 Indigenous people in the Central Queensland SA4's labour force. Unemployment was higher than general unemployment, at 19.6% in the Mackay SA4 (compared to the Census count of 7.8% for the total population) and 22.7% in the Central Queensland SA4 compared to the Census count of 8.7% for the total population.[75] An estimated 648 Indigenous people in the Mackay SA4 and 1,018 Indigenous people in the Central Queensland LGA identified themselves as unemployed in the Census. This is likely to under-estimate the number of Indigenous people due to under-representation of Indigenous people in the Census (see Annex A Table A-8).

Collectively, unemployed Indigenous people across the two regions represent a strong potential labour pool for both construction and operation of the Project.

QRC's most recently available Indigenous Participation Survey with member companies[76] indicates that Indigenous employment remained relatively strong between 2014 and 2015, despite the significant job losses that occurred throughout 2015 in the coal and Coal Seam Gas (CSG) sectors. The 22 companies that participated in the survey reported a total of 1,100 Indigenous employees (FTE) at December 2015, which was an increase of 88 employees since 2014. Women represented 23% of the 22 companies' Indigenous employees in 2015, which was higher than the 15% overall rate of female participation reported in QRC's 2012 survey of female participation in the industry.

However, comparison of the 14 companies that provided data for both 2014 and 2015 indicated a decline in their Indigenous employment numbers. There was also a decline in the number of Indigenous people employed by contractors as a result of the completion of large mining and CSG construction contracts.

Indigenous job losses were highest for machinery operators / drivers and labourers, indicating that skilled operators and experienced labourers are likely to be available. The majority of Indigenous employees in 2015 (82%) were residential employees and 18% were FIFO/DIDO commuters. The report notes reasons for optimism about Indigenous participation in the resources sector, with increased numbers reported, continuing investment in new trainees, increased Indigenous employment numbers in some parts of the mining industry and continuing support of Indigenous businesses.

[75] Table I14 selected labour force, education and migration characteristics by indigenous status by sex
[76] Barclay, M. Weldegiorgis, F. Limerick, M. and Sutton, M. (CSRM) 2016.

3.7.3 Regional labour force

This section considers key characteristics which indicate the capacity of the labour force in the Mackay SA4 and Central Queensland SA4, which represent a significant labour pool for mining projects in the Bowen Basin.

Since 2016, mining employment availability has increased along with increasing coal prices. Mining industry employment numbers recorded by Business Queensland[77] indicate that at 31 March 2018, there were 28,450 people employed in open cut coal mines in Queensland, which was an increase on the previous six months of 1,573 people or 5.8%. Underground coal mines in Queensland employed 6,277 people at 31 March 2018, which was an increase on the previous six months of 735 people or 13%. In total, 34,727 people were employed by coal mines.

QGSO's analysis of labour force trends for the Mackay SA4 (MIW region) in the year to June 2018 indicates that:

- the labour force increased by 3,900 people over the year, with the number of employed people rising by 5,700 people, and the number of unemployed people decreasing by 1,800;
- unemployment decreased by two percentage points, declining to 3.4%, lower than the Queensland average of 6.0%; and
- labour force participation increased by 3.30 percentage points, and was 9.7 percentage points higher than the State average.

This indicates a strengthening of the labour market in the past year, due in part to an increase in mining employment opportunities. The data also indicate a decrease in the Mackay SA4's population but a small increase in labour force participation over the past five years (see Table 44).

In the Central Queensland SA4 in the year to June 2018:

- the labour force decreased by 2,600 people, with the number of employed people decreased by 2,100 people and the number of unemployed people decreasing by 400 people;
- fluctuations in unemployment have been less dramatic than in the Mackay SA4, changing by 0.2% over the past year; and
- labour force participation increased by 1.2%.

Whilst unemployment was higher in the Central Queensland region at 6.0% in June 2018, the data indicate a less volatile labour market than in the Mackay SA4.[78]

Following very strong employment growth in Queensland during 2017, increases in employment slowed during 2018, however the number of employed people in Queensland increased by 2.2% (or 52,600 people) over the year to July 2018[79].

The Mackay SA4 accounted for 5,700 of Queensland's additional employees during the year to July 2018 (approximately 11% of Queensland's total), which is due in part to an increase in mining employment as described below. The unemployment rate in the Mackay SA4 in June 2018 (at 3.4%)

[77] Business Queensland. 2018

[78] QGSO. 2017e

[79] Queensland Government Statistician's Office. 2018d. Labour Force (trend update).

was the lowest of all 19 SA4s within Queensland[80] and considerably lower than Queensland's rate of 6.1%. Youth unemployment had also fallen from 10.2% to 7.0% over the year in the Mackay SA4, and was the lowest in Queensland after Brisbane Inner City.[81]

The mining industry has less prominence for the Central Queensland SA4 (with the exception of the Central Highlands LGA). The number of employed persons in the Central Queensland SA4 in the year to June 2018 decreased by 2,100 persons, or 1.9% over the year, and the unemployment rate in June 2018 was 6.8%, the seventh highest of the 19 SA4s within Queensland[82]. Youth unemployment in the Central Queensland SA4 fell only slightly from 13.5% to 12.3% over the year to June 2018.

Table 44: Labour force trends, Mackay and Central Queensland Regions

Labour force status	2013–14	2014–15	2015–16	2016–17	2017–18	1 yr variance	5 yr variance
Mackay SA4							
Employed persons	100,000	92,700	88,600	93,500	99,200	5,700	-800
Unemployed persons	4,400	7,300	6,500	5,300	3,500	-1,800	-900
Labour force	104,300	100,000	95,100	98,800	102,700	3,900	-1,600
Not in the labour force	35,000	38,900	42,700	37,900	33,200	-4,700	-1,800
Population aged 15 yrs+	139,300	138,900	137,800	136,800	135,900	-900	-3,400
Unemployment rate (%)	4.2	7.3	6.8	5.4	3.4	-2.00	-0.80
Participation rate (%)	74.9	72	69	72.3	75.6	3.30	0.70
Central Queensland SA4							
Employed persons	116,200	115,700	114,200	110,900	108,800	-2,100	-7,400
Unemployed persons	6,700	7,800	8,100	8,300	7,900	-400	1,200
Labour force	122,900	123,500	122,300	119,300	116,700	-2,600	-6,200
Not in the labour force	54,100	54,200	54,700	56,900	58,700	1,800	4,600
Population aged 15 yrs +	177,000	177,700	177,100	176,200	175,500	-700	-1,500
Unemployment rate (%)	5.4	6.3	6.6	7	6.8	-0.20	1.40
Participation rate (%)	69.4	69.5	69.1	67.7	66.5	-1.20	-2.90
Queensland							
Unemployment rate (%)	6.0	6.5	6.2	6.2	6	-0.2	0.00
Participation rate (%)	65.9	65.5	65.5	64.5	65.9	1.4	0.00

Source: QGSO 2017e. Please note that there are small random adjustments made to all cell values to protect the confidentiality of data. These adjustments may cause the sum of rows or columns to differ by small amounts from table totals.

[80] Queensland Government Statistician's Office. 2018f.
[81] Queensland Government Statistician's Office. 2018g.
[82] Ibid.

3.7.4 Employment in Queensland

The change in percentages of Queensland residents employed by industry during the last ten years is shown in Figure 13. There was a 12% increase in the number of employed people over all in the ten year period. The largest increases in employment by industry were in the Health Care and Social Assistance (an increase of 57.9%), Administrative and Support Services (36.6%) and Mining (33.5%) industries. The largest decreases by industry were in Information Media and Telecommunications (19.1%), Agriculture, Forestry and Fishing (18.5%), and Rental, Hiring and Real Estate Services (9.6%).

There was a small decrease (1.4%) in the number of people employed in the construction industry overt the ten years. The increase in the percentage of people employed in mining over this period was almost three times larger than the increase in the total number of people employed over the ten year period.

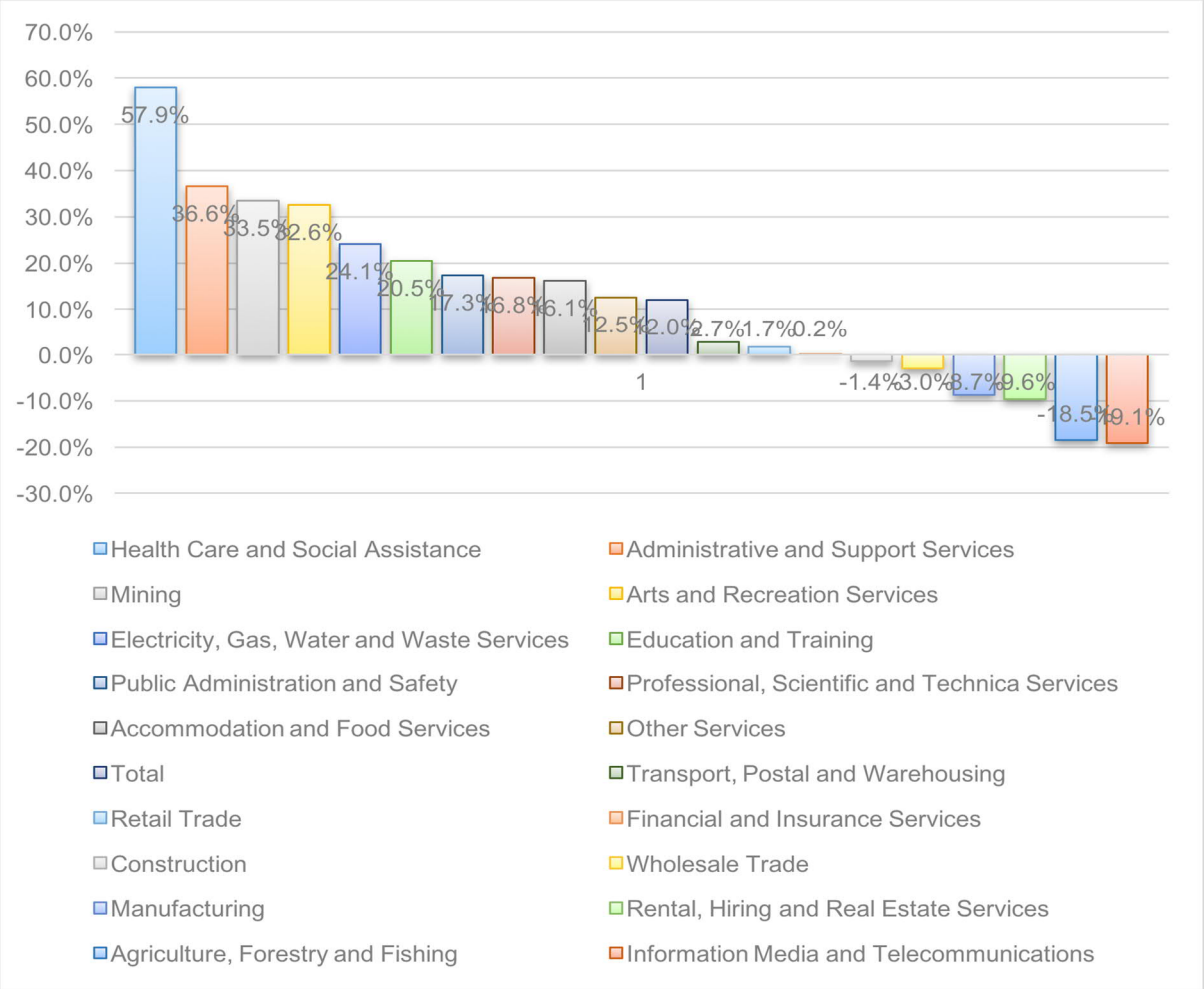


Figure 13: Change in employment by industry in Queensland 2008-09 and 2017-18

Source: ABS 6291.0.55.003, Labour Force, Australia, Detailed, Quarterly, May 2018. Comprises full-time and part-time employment, based on ANZSIC 2006.

As an indication of mining employment trends, Table 45 compares the number of residing employees reported by QRC member companies in 2015-16 and 2016-17, for the Isaac and nearby LGAs.[83] These data indicate that the mining industry accounted for 3,694 full time equivalent residing employees in the Isaac region in 2016-2017[84] (546 people more employees than in the previous year). Increased mining employment was also evident in the other nearby LGAs.

Table 45: QRC Members' employment changes, selected LGAs

LGA	2015-2016	2016-2017	Change
Isaac	3,148	3,694	546
Mackay	3,162	4,028	866
Central Highlands	3,217	4,154	937
Rockhampton	1,176	1,280	104
Total – Four LGAs	10,703	13,156	2,453

3.7.5 Unemployment trends

Figure 14 presents the five year unemployment trends for the Moranbah and Broadsound-Nebo SA2s and the LGAs in the MIW region at June and December of each year.

Unemployment rates in the Isaac LGA were consistently lower than in the other LGAs, tracking closely to the unemployment rates in the Broadsound-Nebo SA2 and the Moranbah SA2, and declining to 1.5% in December 2018, compared to the Mackay LGA's 3.9% and the Whitsunday LGA 's 3/6%.

As the Isaac LGA's unemployment rate was already low (with less room for movement and fewer people to draw on), more significant positive changes have been seen in the remainder of the Mackay SA4. The unemployment rate has decreased from a high of 8.4% in the Mackay LGA and 9.9% in the Whitsunday LGA in December 2015 to 3.9% and 3.6% respectively in December 2018. This is an indicator of the solid employment growth in the Bowen Basin mining sector which draws strongly from the MIW Region.

QGSO's unemployment data for December 2018 indicate that the youth unemployment rate was significantly lower at 7.0% in the Mackay SA4 compared to the Queensland average and almost double half the youth unemployment rate in the Central Queensland SA4 in December 2018 (see Table 46). Of note, youth unemployment in the Mackay SA4 had fallen by 3.0 percentage points in the past year. This reflects the strength of the mining labour force in the Mackay SA4 and its capacity to respond to increased demand in the Bowen Basin's mining sector.

[83] Queensland Resources Council. 2018.
[84] Queensland Resources Council. 2017.

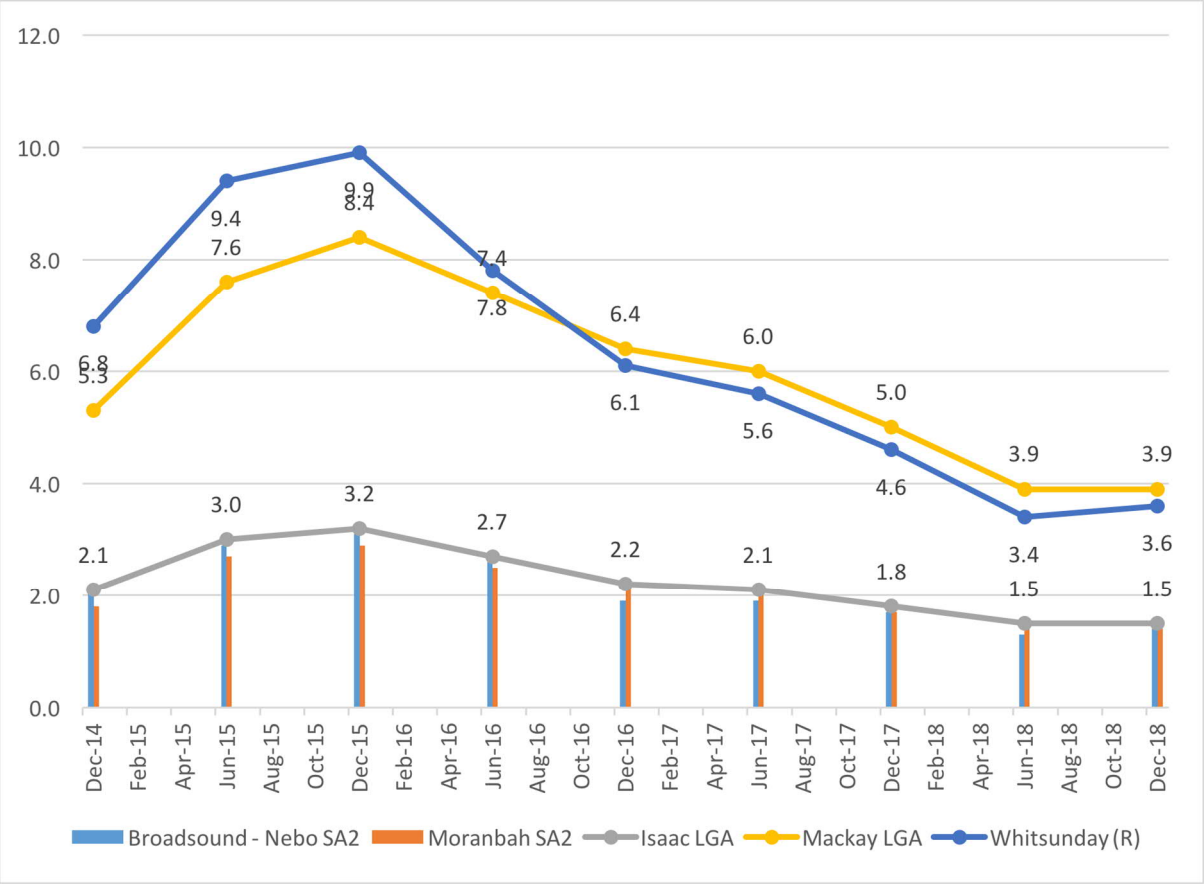


Figure 14: Unemployment, SA2s and LGAs, 2014-2018

Source: Australian Department of Employment - Small Area Labour Market research for SA2s and LGAs.

Table 46: Youth Unemployment 2016-2017 (%)

Region	December 2016 (%)	December 2017 (%)	December 2018 (%)	1 year Change
Mackay SA4	8.4	10	7.0	-3.0
Central Queensland SA4	10.4	12.5	13.6	1.1
Queensland	13.5	13.1	12.8	-0.3

Source: QGSO - Regional youth unemployment, December 2016, 2017, 2018

3.7.6 Labour availability

As described in Section 3.7.1, the mining industry in the Isaac region employed 42% of the population in 2016, providing a strong potential labour pool for the Project. In the Mackay SA4 in 2016, mining was the highest industry of employment employing 11,300 people or 14.4% of the employed workforce, followed by Health Care and Social Assistance at 9.1% and Accommodation and Food Services at 8.2%.

Whilst the mining industry employed 8.7% of workers in the Central Queensland SA4 Region's residents, it was only the third highest employing industry behind Health Care and Social Assistance at 10.5% and Education and Training at 9.0% (see Annex A, Table A-6). In comparison to Queensland's average participation in the mining industry (2.3%) these data represent the strength of the mining workforce in the region, but also a vulnerability to mining industry decline.

Analysis of construction sector employment numbers for 2011 and 2016 (Table 47) identified the following changes:

- in the Mackay SA4, the number of people employed in the construction industry decreased by 2,368 people (approximately 33% of the sector's employment) with decreases spread fairly evenly between the Building Construction, Heavy and Civil Engineering and construction services industry, indicating a decline in construction employment opportunities across the board; and
- in the Central Queensland SA4, the declines were much lower at a total of 899 employed people or approximately 11%, with the largest decline in building construction.

The decrease in the Mackay SA4 largely reflects the completion of construction on a number of mining projects in the Isaac LGA, and consequential losses in indirect employment affecting the building construction industry.

Table 47: Construction Industry Employment, Mackay and Central Queensland Regions

Sector	Mackay SA4			Central Queensland SA4		
	2011	2016	Variance	2011	2016	Variance
Heavy and Civil Engineering Construction	1,446	744	-702	1,662	1,439	-223
Construction Services	3,668	2,824	-844	4,093	3,761	-332
Building Construction	1,698	912	-786	1,836	1,337	-499
Construction, not further defined	266	226	-40	326	483	157
Total	7,078	4,710	-2,368	7,917	7,018	-899

Source: QGSO, 2018

Analysis of mining sector employment numbers in the two regions between 2011 and 2016 (Table 48) identified the following changes:

- in the Mackay SA4, the number of people employed in the mining industry increased by 1,177 people or approximately 13.3% with coal mining responsible for most of the increase; and
- in the Central Queensland SA4, mining employment grew by a more modest 2.9%, with oil and gas extraction responsible for adding the majority of new jobs.

Table 48: Mining Industry Employment, Mackay and Central Queensland Regions

Sector	Mackay SA4			Central Queensland SA4		
	2011	2016	Variance	2011	2016	Variance
Coal Mining	10,744	13,467	2,723	6,478	6,701	223
Oil and Gas Extraction	152	247	95	125	607	482
Metal Ore Mining	64	244	180	466	538	72
Non-metallic Mineral Mining and Quarrying	146	105	-41	225	338	113
Exploration and Other Mining Support Services	1,633	634	-999	908	333	-575
Mining, not further defined	653	468	-185	353	288	-65
Total	13,392	15,169	1,777	8,555	8,803	248

Source: QGSO, 2018

Collectively, the Mackay and Central Queensland SA4s in 2016 had:

- a construction industry labour force of 11,728 people, of whom 2,183 were employed in Heavy and Civil Engineering Construction; and
- a mining workforce of 23,972 people, of whom 20,168 (84.1%) were employed in coal mining, from which the Project could draw.

Further discussion of labour availability is provided in Section 4.2.6.

3.7.7 Skills shortages

The Mackay Isaac Whitsunday Regional Office of the Department of State Development, Manufacturing, Infrastructure and Planning (DSD) has advised that it has been aware of skills shortages in the Mackay Isaac Whitsunday region since late 2016. During 2017, DSD initiated consultation with businesses in the Mining Equipment, Technology and Services (METS) and construction sectors, labour hire companies and peak bodies, to investigate the types of skills in demand and the impacts skills shortages were having on businesses' ability to complete contracts.

Approximately 60% of businesses who provided survey responses as part of this project identified shortages in quality staff and skilled labour. DSD consultation with local METS and construction businesses identified extreme difficulty in recruiting machinery operators, and a shortage of experienced, qualified workers including boilermakers, carpenters, concreters, electricians, diesel fitters, riggers, fabricators, machinists, diesel mechanics, trades assistants, and blaster painters. Businesses advised that skilled workers are being recruited from outside the region and interstate, and that skilled labour shortages are placing pressure on companies to fulfil contract obligations, service client needs, or grow their businesses.

Labour hire firms who operate in Mackay affirmed to DSD that they were experiencing difficulty in recruiting operators, maintenance staff and positions such as work place health and safety officers, project managers, industrial cleaners and scaffolders. The labour hire companies identified a noticeable skill shortage since the beginning of 2017.

DSD consultation with the Queensland Resources Council confirmed there are particular skill shortages in relation to mine shut downs, particularly for boiler makers and industrial electricians. Both labour hire companies and QRC noted that the traditional shutdown periods of 2-3 weeks have largely

moved to a series of mini shutdowns of 1-3 days which affects the capacity to attract contractors to the region. In response, the Resource Industry Network (RIN) submitted an application to DSD requesting Jobs and Regional Growth Funding to address the labour shortage in relation to shutdowns, by bringing experienced resource services labour that left Mackay when the mining boom ended back into the region.

Resource Industry Network (RIN) is the not-for-profit group representing the resource sector and allied industries within the Mackay Region. In August 2017 RIN reported that members had identified 'a noticeable pick up in the market within the engineering and heavy industrial sector' and as many skilled workers left the region with the mining industry downturn, they were having difficulties in recruiting[85].

The most recent Australian Industry Group Construction Outlook survey (published in July 2018)[86] found that:

- employment in major construction had increased by 4.3% in the year to February 2018;
- labour shortages are increasing, with 66.7% of respondents (Australian construction businesses), reporting either 'major' or 'moderate' difficulty in recruiting skilled labour. This was a large increase from the March 2017 survey period when 39.1% of respondents reporting either major or moderate difficulty in recruiting skilled labour;
- skilled labour sourcing difficulties were expected to worsen during 2018; and
- labour costs pressures are increasing, with heightened pressures expected to be exerted in 2018.

The Australian Department of Employment's list of occupations provides insights into the likely ease of accessing particular skills. The latest list produced for Queensland was for the year 2016-17 (see Table 49).

Companies and projects were expecting some difficulties in recruitment. A 'shortage' is defined when employees are unable to fill or have considerable filling vacancies, whilst 'recruitment difficulty' means some employers have difficulty filling vacancies. Key areas of shortage relevant to operations include metal fitters, machinists and sheet metal trades workers, and plumbing and gas fitting trades which were classified as 'recruitment difficulty.'

Skills shortages research conducted by the Australian Industry Group in 2016, based on employers' inputs, indicated that the top three occupations where they expected to experience the most skills shortages in in 2017 included technicians and trades workers as the largest area of concern, with 50% ranking this grouping as the top occupation where shortages would be experienced, and 12% identifying machinery operators and drivers as the largest area of concern[87]. Both groups are relevant to the Project's operational requirements.

[85] Resource Industry Network. August 2017.
[86] Australian Industry Group and Australian Constructors Association. 2017.
[87] The Australian Industry Group. 2016.

Table 49: Mining industry skill shortages, Queensland, December 2016

Occupational group	Labour market rating
Structural Steel and Welding trades workers	No Shortage
Sheet metal trades Workers	Regional shortage
Painting trade workers	Shortage
Plumbing and gas fitting trades	Recruitment Difficulty
Electricians (general)	No shortage
Metal Fitters and Machinists	Regional Shortage
Mechanical engineers	No shortage
Electronic instrument trades workers	

Source: Department of Employment - Labour Market Research and Analysis Branch. 2016.

3.7.8 Job vacancies

Figure 15 shows the ten year trend in job vacancies for a composite index of the top ten occupations in the mining industry (see Table 50) since January 2007. This provides an indication of the number of jobs on offer and the level of competition for mining-specific skills and labour.

Total vacancies were highest in mid 2008 at approximately 5,500, before falling sharply to reach approximately 2,200 vacancies in mid 2009. The number of vacancies then increased steadily to reached a peak of more than 5,400 in late 2011 (during the previous mining construction boom), again falling sharply throughout 2012 to reach approximately 2,611 vacancies at the end that year, and continuing to fall to a low of approximately 1,070 vacancies in January 2016.

With the increase in coal prices over the past two years, the number of vacancies steadily increased from mid 2016 to reach 2,845 vacancies in mid 2018. Total vacancies have fallen since September 2018, and totaled approximately 2,260 in January 2019, similar to the mid 2009 level.

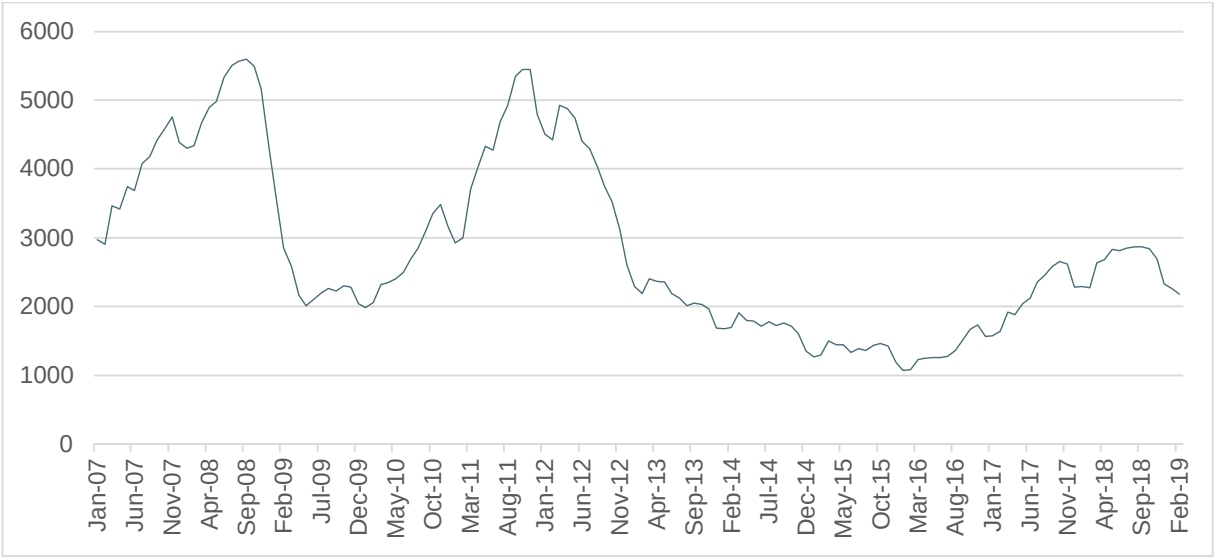


Figure 15: Mining industry vacancies Jan 2009 - Jan 2019

Source: Department of Employment – Labour Market Portal
http://lmip.gov.au/default.aspx?LMIP/GainInsights/VacancyReport

Inputs from a range of stakeholders indicate that the construction, mining and mining service industries are experiencing skills and labor shortages across a broad range of roles. BMA has advised that recruitment for all trades and technicians is currently challenging, with electricians, boiler makers and diesel fitters' roles hardest to fill, and dragline operators, equipment maintainers and drill and blast professionals also in short supply.

Table 50 provides the number of job vacancies in the top ten mining occupations in Queensland at January 2019 and shows that, of the 2,258 vacancies counted in January 2019, the greatest shortages were for Metal Fitters and Machinists and Electricians.

Table 50: Vacancies for mining occupations (Queensland) January 2019

Occupation	No. Vacancies
Metal Fitters and Machinists	563
Electricians	430
Structural Steel and Welding Trades Workers	247
Earthmoving Plant Operators	205
Drillers, Miners and Shot Firers	162
Production Managers	129
Mining Engineers	170
Other Building and Engineering Technicians	116
Occupational and Environmental Health Professionals	116
Industrial, Mechanical and Production Engineers	119
Total	2258

Source: Department of Employment – Labour Market Portal
http://lmip.gov.au/default.aspx?LMIP/GainInsights/VacancyReport

3.7.9 Business and supply chain

The Isaac LGA's economic strengths[88] include:

- significant thermal and metallurgical coal deposits, collectively producing more than 54% of Queensland's total saleable coal in 2015;
- a long-standing agricultural industry, valued in 2015 at $192 million;
- high levels of trade qualified residents, and significant human and physical capital in mining-related businesses; and
- areas of significance to the tourism industry.

IRC's economic profile acknowledges that the region's production of high grade metallurgical coal provides a greater certainty in its future industry and economic base, but notes that regional leaders

[88] REMPLAN. 2018. Isaac Regional Council Economic Profile

continue to explore ways to strengthen and diversify its economy to offer socio-economic sustainability for generations to come. The profile notes Isaac is strategically placed to capitalise on the economic opportunities associated with the rise of Asia and northern Australia Development initiatives, with consistently high solar radiation and proximity to existing transmission infrastructure and markets, and opportunities for biofuel production[89]. The Isaac coast is also identified as an emerging tourism precinct for development in the Mackay Destination Tourism Plan 2014.[90]

Stakeholders consulted as part of the SIA indicated that:

- there is an opportunity for small business growth with vacant shops and offices available in each potentially affected community;
- there has been growth in the number of unregistered businesses which operate through the internet, affecting the number of registered businesses; and
- all businesses are looking for an increase in population to sustain their profitability, however an increase in Dysart's local workforce and local spend was seen as critical, noting that Moranbah has a more diverse range of mining operations and businesses and is more resilient to industry cycles.

A profile of businesses in the Isaac LGA and the Mackay SA4 has been developed using Remplan's analyses of ABS collect counts of registered businesses.

Approximately 1,728 registered businesses were operating in the Isaac LGA in June 2017, representing 11% of registered businesses in the broader Mackay SA4. Of these, 1,083 (62.6%) were non-employing businesses (e.g. sole traders, owner operators and small family farms). A further 458 businesses (26.5%) were small businesses with 1-4 employees and 154 businesses (8.9%) employed 5-19 people. Just 33 businesses (1.9%) in the Isaac LGA employed 20-199 people and there was no business with more than 200 employees.

In the Mackay SA4 in June 2017, there were 9,056 non-employing businesses (60.2%), 3,936 businesses (26.1%) with 1-4 employees, 1,628 businesses (10.9%) with 5-19 employees, 412 businesses with 20-199 employees (2.6%) and 9 businesses (0.05%) employing more than 200 people.

In all, small businesses employing less than five people represented more than 89.2% of Isaac's businesses, slightly higher than the Mackay SA2's 86.4%, due to the location of the region's biggest businesses in either the Mackay or Whitsunday LGAs.

Mining operations often have their business registrations in a different jurisdiction and therefore are not accurately represented in the statistics. Figure 16 demonstrates the percentage change in business numbers for each category (number of employees) between June 2016 and June 2017, as an indicator of the change in business viability in the two regions. Between June 2016 and June 2017:

- the total number of business increased by 3.47% in the Isaac LGA and just 0.17% in the Mackay SA4;
- the most significant increase (4.57%, compared to -0.91% for Mackay SA4) was the number of Isaac LGA businesses employing 1-4 people, followed by the number of non-employing businesses (up 4.03% compared to 0.5% for Mackay SA4); and

[89] REMPLAN. 2018b. Isaac Regional Council Economic Profile

[90] Tourism and Events Queensland. 2014

- businesses comprising 5-9 employees in the Isaac LGA dropped by -2.5% but grew 1.5% across Mackay SA4.

Indigenous business

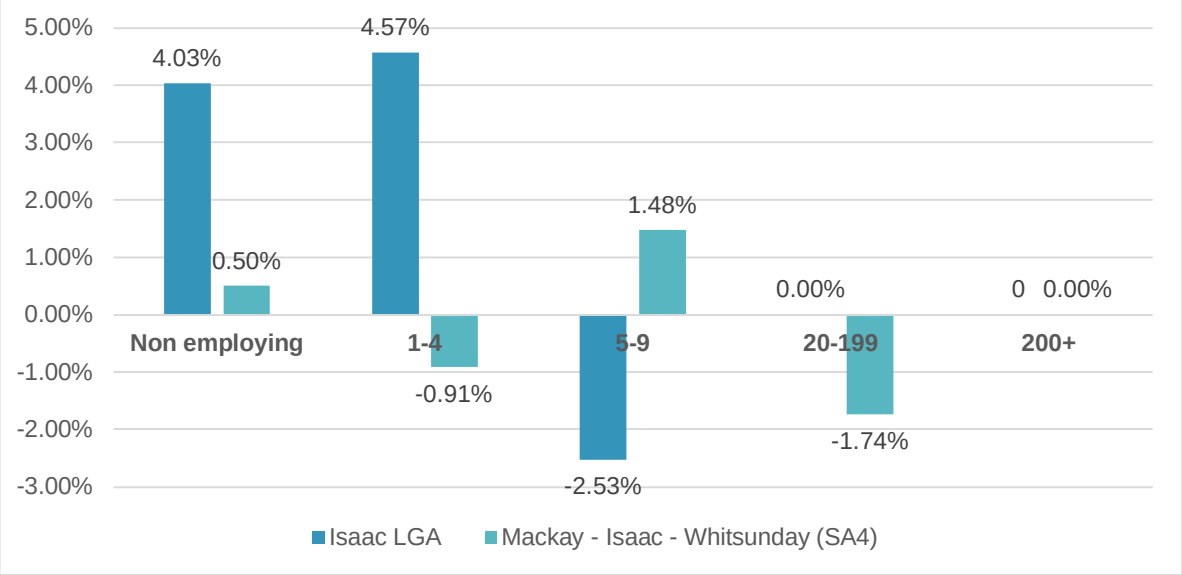
A review of listings on the Black Business Finder[91] identified two Indigenous-owned businesses in the Isaac LGA, including Integrative Management Solutions (iMS) in Moranbah and NCS Mining in Nebo. There were 16 Indigenous businesses listed in the Mackay LGA ranging from mining contract services to trades and printing services. Another 17 businesses were listed in the Rockhampton LGA including employment and training services, contract and workforce services, security and cultural services.

CSRM's 'Benchmarking Leading Practice in Aboriginal Business Procurement in the Extractive Resource Sector' Report[92] focuses on Aboriginal business engagement in the mining and gas industries, based on the experience of Aboriginal business and skilled industry practitioners. The report recommends that four components are addressed to achieve Aboriginal business participation:

- promoting and enabling a positive internal environment;
- innovative and targeted sourcing strategies;
- management system for Aboriginal procurement; and
- competent external engagement.

It includes practical guidance on addressing the four components, which has been considered in the Project's Local Content Strategy. BMA's strategy for engagement with Indigenous businesses is described in Section 6.4.

Figure 16: Isaac LGA and Mackay SA4 Business Counts Percentage Change June 2016-17



Source: REMPLAN. 2018. Isaac Regional Council Economic Profile

[91] ICN Queensland. 2017. Black Business Finder.
[92] Barnes, R., Harvey, B. and Kemp, D. 2015

4. IMPACT ASSESSMENT

4.1 Community values, land use and settlement

This section describes the potential for any impacts on land uses, amenity, the settlement pattern, community identity and community cohesion.

4.1.1 Stakeholder views on the Project

As noted in Section 2.4, potentially impacted communities include Dysart, Moranbah and Middlemount. A profile of key stakeholders and issues of relevance to the SIA is presented in Section 2.5.

Community sentiment in the Isaac region is that new mining operations are supported, with the availability of local employment, business supply opportunities and potential population growth driving this support. Stakeholders confirmed that BMA and other mining companies need to maintain their social licence to operate by ensuring communities benefit from mining projects, and working collaboratively with communities to address emerging issues such as housing shortages or strains on social infrastructure.

Key themes identified with respect to potential impacts and benefits and the SIA section where they are addressed are summarised in Table 51.

Table 51: Potential impacts and benefits identified by stakeholders

Impact area	Impacts and benefits	Section
Communities and stakeholders	• Potential to strengthen population growth and increase community resources which support wellbeing	4.4. 4.4
Housing and Accommodation	• Potential for in-migrating personnel's demands to exacerbate rental housing shortages • Potential to stimulate investment in housing, including development of residential lots and housing in Belyando Estate • Reduced benefits to communities of remote WAVs	4.3
Health and wellbeing	• Potential to strain Council waste management facilities' capacity • Residential and non-residential workforces demand on water supply and roads • Exacerbation of current demands on Council and health services from NRW • Increasing demands on Hospital, GP and mental health services, as a result of both population increases and FIFO workers' demand • Potential to increase demand on community facilities including childcare • Potential to increase demand on mental health care services with limited capacity • Fewer emergency resources are available in towns when they are required at mine sites.	4.4

Impact area	Impacts and benefits	Section
Local business	• Potential to stimulate business activity in Dysart, Moranbah and /or Middlemount through increased population • Benefits of BHP's Local Buying Program and Local Buying Foundation plus potential Project opportunities • Potential to increase competition with mining operations for labour and skilled personnel • Potential for personnel's partners to contribute to the pool of skilled workers for local services and businesses	4.5
Cumulative impacts	• Contribution to cumulative impacts of mining industry growth on health and emergency services • Potential for contribution to fluctuating demands from population cycles and multiple mining projects to affect service capacity Potential for housing shortages • Potential for non-local residents' needs to affect service access	4.6
Workforce and employment	• Increase in local apprenticeship and training opportunities • Employment opportunities which would retain young people in local communities • Availability of employment and training pathways for Indigenous people	4.2

Consultation undertaken by the University of Western Australian for BHP in 2016 indicates that stakeholders identified the top five impact areas of BHP operations in Queensland, in order, as:

- security of employment in the community;
- population instability, with rapid shift from influx to deflux;
- mental health;
- the viability of local businesses; and
- school viability and quality.

This is generally consistent with the key issues identified in Project consultation. Potential social impacts and benefits are discussed in following sections.

4.1.2 Land ownership

Both properties located within the Project Site (Lake Vermont and Meadowbrook) are owned by BMA.

Relocation of the existing Vermont water pipeline and powerline into a new infrastructure and transport corridor would not affect any private properties.

Interviews were held in June 2018 with the two landholders whose properties may be affected by noise dust or other impacts, to seek their views on potential impacts on their properties or the broader community, and any mitigation strategies required. The landholders did not identify any negative impacts as a result of to the Project proceeding, with the exception that one noted that the existing Saraji Mine contributed to occasional dust issues during adverse weather, and that the mining industry was a source of competition for labour for his business.

The findings of the groundwater assessment indicate that there would be no groundwater drawdowns which would affect the use of bore water by local property owners.

Both of the above-mentioned landholders indicated they were comfortable with the terms of their agreements with BMA, and confirmed the existence of positive relationships with BMA and its staff.

4.1.3 Impacts on amenity

The Project's Noise and Vibration Assessment identified the nearest sensitive receptors to the Project Site as summarised in Table 52. Meadowbrook and Lake Vermont Homesteads are located within MLA 70383. All other sensitive locations are outside current ML or MLA areas.

Table 52: Identified sensitive receptors nearest to the Project

Receptor	Ownership
Kyewong Homestead	Private landholder
Lake Vermont Homestead	BMA
Saraji Homestead 1	Private landholder
Saraji Homestead 2	Private landholder
Saraji Homestead 3	Private landholder
Tay Glen Homestead	Private landholder
Meadowbrook Homestead	BMA

Prior to consideration of mitigations, noise emissions from the Project during construction and operation phases are modelled to sometimes exceed the nominated Acoustic Quality Objectives at the three homesteads on Saraji Homestead 1, Saraji Homestead 2, Saraji Homestead 3, the Meadowbrook homestead and the Lake Vermont Homestead.

Proposed noise management strategies include noise control measures, community consultation and complaints management to be implemented for the Project. The potential for impacts on the amenity of the three homesteads on Saraji have been addressed through co-existence agreements between BMA and the property owners. Meadowbrook was purchased by BMA in October 2018. On this basis, further changes to local landholders' amenity are expected be minimal and well tolerated by stakeholders.

4.1.4 Changes to land use or settlement pattern

The Project, located some 25 km from the nearest community of Dysart, is unlikely to have a negative effect on the settlement pattern by constraining residential expansion or inhibiting local development. There is potential for support for population growth and therefore the development of new housing within the established urban footprint.

The Project results in the acquisition of Meadowbrook, a cattle breeding property. Commercial arrangements with the properties' owners will enable them to continue their cattle breeding operations in the region, which include additional properties in the Isaac LGA. BMA also has an existing agreement with the property owners for use of land within Tay Glen, including a partnership agreement involving a land swap enabling the owners to use other land owned by BMA for their grazing operations.

The Project would result in an incremental increase the area of land within Isaac LGA which is used for mining purposes, however stakeholders did not express any concern about this increase, which is in keeping with the continuation of coal mining as one of the region's most important industries.

As an underground mine, the Project has a smaller surface footprint than an open-cut mine, and the potential for land disturbance is reduced. An area of approximately 1,155 ha will be disturbed for mine infrastructure, including the MIA, CHPP, conveyors, roads and a rail spur and balloon loop, and the infrastructure and transport corridor.

A total area of approximately 2,072 ha will be mined underground within ML 1775 and MLA 70383. As noted in the Project's Project Subsidence Management Plan (SMP), subsidence may result in general impacts including:

- surface depressions or cracking, impacts on surface water resources, erosion and sedimentation until a stable profile is restored; and
- the potential for groundwater drawdown and consequent ecological impacts.

The SMP summarises subsidence impact modelling[93] (Minserve, 2017) which identified potential impacts as maximum predicted subsidence of 3.2 metres above the northern panels and 3.5 metres over the southern panels.

The proposed approach to managing subsidence is to use pro-active measures to predict and potentially improve the overall condition of the potentially affected area.

Due to the gradual nature of the subsidence, it is expected that grazing activities will continue during mining operations but out of direct operational areas while any related subsidence occurs. The existing and proposed topography as represented in the Rehabilitation Management Plan (RMP) indicates that the post mining proposed topography will be suitable for the post-mining land use of grazing.

Following the mine's closure, approximately 25 years after its commencement, land which was disturbed by mining infrastructure or subsidence will be progressively rehabilitated in line with BHP's completion criteria and consideration of the Mined Land Rehabilitation Policy (DES, 2018).

4.1.5 Visual amenity impacts

The regional and local landscape surrounding the Project Site is considered to be generally representative of the Bowen Basin region. Mining is the predominant activity within the region and as such, facilities and activities associated with this use are visible. The eastern part of the Project (within MLA 70383) comprises flat grazing lands associated with the Isaac River and its tributaries, the central part of the Project Site is considerably fragmented by open cut mining activities and to the west, the landscape is influenced by the presence of the Norwich Park Rail Line and the adjoining Dysart-Moranbah Road. Assessment of the Project's potential for impacts on visual amenity indicated that:

- the Project Site lies in an area dominated by rural land uses interspersed with large mines;
- there are no protected landscapes close to the Project Site or other areas that are likely to be used for recreation, with the nearest State Forest (Bundoora State Forest) located over 50 km

south of the Project Site and the Peak Range National Park located around 40 km west of the Project Site; and

- the Project Site is not located close to any designated tourist drives that would be affected by any landscape changes.

As such, the Project is located in an area with few sensitive visual receptors and generally low landscape sensitivity.

The assessment notes that much of the Project is underground, but associated above-ground mine infrastructure will result in localised changes to views during both operation and construction, primarily experienced by travellers on the Dysart-Moranbah Road and by two private homesteads on Saraji Station. Changes to the rural landscape are noted as result of subsidence, which will result in changes to landform, however, due to the location of the proposed underground mining area, opportunities for these changes to be experienced by sensitive receivers are limited. No significant impacts on landscape character, scenic amenity or lighting were identified.

4.1.6 Community identity and functions

As described in Section 3.1, Dysart, Moranbah and Middlemount were founded as communities for personnel and families associated with the mining industry, including business and services employees, and this remains their key function today. The three towns proudly identify as mining communities, but also strongly value their rural way of life, with a culture of active community participation, willingness to help other community members, and self-reliance.

The development of the Project would reinforce the Isaac region's position as one of the foremost coal producing regions in Australia, and contribute to local communities' roles in servicing current and future mining employees and families. In Dysart in particular, the development of an underground coal mining project alongside Saraji Mine, an employer of more than 40 years, is likely to strengthen confidence and optimism in the town's future, and be positive for locals' sense of identity.

The Project's development is likely to support the Dysart community's function as a home town for local mining personnel, by increasing the number of people living in the town and contributing to social resources. This effect may also be seen in Moranbah, but will be less noticeable in the context of Moranbah's larger population.

Consultation with Barada Barna people did not identify any specific impacts to cultural or social values. However, BMA will consult with the BBAC again prior to Project construction to confirm their understanding of the project's social impacts and benefits.

IRC's Community Strategic Plan, Isaac 2035[94] aims to strengthen the region across four key areas: improving essential infrastructure; diversifying the economy; supporting communities; and protecting the natural environment. The Project will contribute to some diversification of the economy by introducing an additional underground mine to the Isaac LGA's mix of local mining operations, which are predominantly open cut. However, the Project's more significant contribution is to supporting communities by increasing the long-term availability of mining employment in the Isaac LGA and the MIW more generally.

4.1.7 Community cohesion

The potentially impacted communities' longevity (with Moranbah and Dysart approaching 50 years of settlement) and the relative constancy of mining employment over decades have supported strong social capital and a sense of permanency in the towns. Close bonds engendered by shared employment experiences, participation in sports and community events are defining features. Availability of local employment is likely to strengthen bonds between personnel and families, and support retention of local young people who would otherwise be lost to training and employment opportunities in other regions.

The potential for an increase in local populations (see section 4.3) is likely to strengthen community resources which contribute to cohesion, with increased numbers of family members available to participate in and volunteer for local events and sporting group development.

During times when cumulative numbers of NRW were very high (e.g. 2008-2012) community members have felt a threat to the towns' functions in servicing mining industry families, with unplanned and unfunded demands on services, and changes to the local/non-local resident balance which affect the town's social character as close and self-contained communities.

BMA will continue to mitigate potential impacts on community identity and cohesion related to increased numbers of non-local personnel, for example, through its ongoing support for local schools, accommodation support for its employees, support to businesses through the Local Buy program and through its ongoing multi-faceted relationship with IRC. This relationship includes aspects related to the joint funding of mutually beneficial projects in addition to BMA's substantial rate-related contributions, water supply arrangements and regular joint planning and update sessions.

4.1.8 Indigenous engagement

BHP's Reconciliation Action Plan (RAP) commits to acknowledging and respecting the rights of Aboriginal and Torres Strait Islander peoples, and contributing to their economic empowerment and social and cultural well-being.

The current RAP (2017-2020) applies to all new operations or major capital projects, as will the future RAP which will span years after 2020. The Project will:

- seek to reach agreements with Aboriginal and Torres Strait Islander peoples which deliver sustainable improvements in their economic, social and cultural wellbeing;
- minimise impacts on aspects of significant heritage value;
- develop and implement an Aboriginal and Torres Strait Islander Economic Empowerment Plan as outlined in Section 6.7.4;
- deliver Aboriginal and Torres Strait Islander cultural awareness and competency training, in consultation with Barada Barna people, to Project employees; and
- maintain grievance and complaints mechanisms which are culturally appropriate and accessible too Aboriginal and Torres Strait Islander peoples.

Prior to commencement of construction, BMA will consult with the BBAC and local Indigenous community organisations to, if necessary, amend baseline data of specific relevance to Indigenous people, and ensure that the SIA's recommended strategies for Indigenous engagement and employment are still appropriate.

4.2 Employment

This section details the project's workforce requirements, recruitment strategy, training and development strategies and workforce wellbeing strategies.

Key issues identified by stakeholders that are considered in this section include:

- a strong preference for maximising local employment opportunities through recruitment, housing and accommodation management, and relocation incentives;
- increases in local apprenticeship, training and employment opportunities required to retain local young people;
- sustaining the populations of local towns; and
- protection of workforce health and safety, including a focus on mental health.

4.2.1 Workforce profile

Construction

BMA will own and operate the Project, and contract the construction of the CHPP, MIA and associated infrastructure to a construction contractor(s).

The timing of the Project is yet to be determined. For EIS-related impact modelling purposes, construction has been assumed to commence in FY 2021 with site set-up and construction of the mine portal. Construction of the CHPP, MIA and associated infrastructure would commence in FY 2022, and construction would be completed in FY 2023 with construction of the conveyor, rail spur and balloon loop.

A construction workforce of 500 people is expected to be required in FY 2021, increasing to 1,000 people during FY 2022 and FY 2023 (see Figure 17). These estimates have been used to predict the Project's potential impacts on the Isaac LGA's employment opportunities (this section) and on the LGA's population, housing capacity and social infrastructure (following sections).

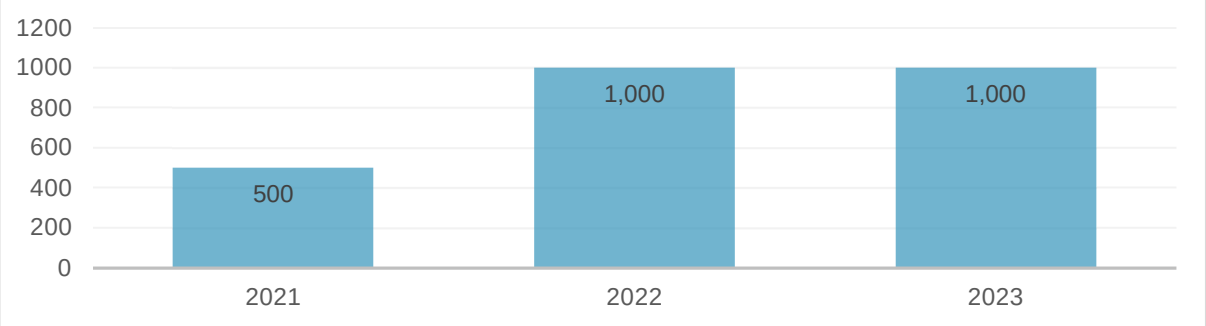


Figure 17: Construction workforce estimates

Construction personnel will work across two 12 hour shifts, with an operating schedule of 24 hours a day, seven days a week, 365 days per year. Rosters are typically confirmed in the late stages of project execution planning, but are likely to include a roster of 21 days on and 7 days off, with two 12 hour shifts changing over at 6 am and 6 pm.

Skilled occupations required for construction include heavy equipment operators, long wall construction specialists, engineers, construction managers, supervisors and labourers, tradespeople including boilermakers, carpenters, scaffolders and electricians. Personnel including engineers, geologists, environmental scientists and management and administrative personnel are also required.

The Project represents a substantial employment benefit to people in these occupational groups, with contracts of up to three years available.

Operations

The Project's first coal is anticipated to be produced in FY 2023, and at full development in FY 2025, approximately 500 operational personnel are expected to required. The estimated ramp-up for the operational workforce is shown in Figure 18 and indicates that approximately 260 personnel would be required during 2023-2024, up to 500 personnel would be required from 2025 to 2041, and a ramp-down to 260 personnel is likely from 2042-43, prior to the decommissioning phase.

Occupational groups required for operations will include heavy equipment operators, drillers, skilled trades (i.e. electricians, boilermakers, special mechanics and diesel fitters) and professionals (i.e. engineers, geologists, scientists, mine managers and administration staff). Figure 18 provides an indicative breakdown of the operational workforce by operators, skilled trades and professionals.

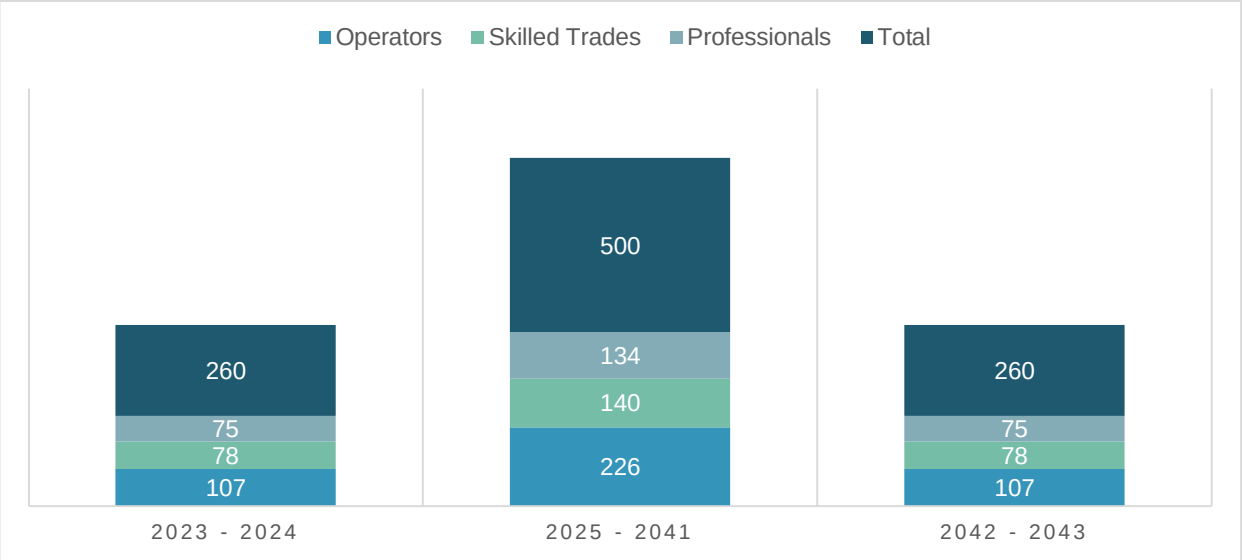


Figure 18: Operations workforce estimates

The Project would operate 24 hours a day, seven days a week, 365 days a year. An operational roster pattern of eight days on, six days off, seven nights on and seven nights off is planned, offering a high ratio of rest days to work days and a roster pattern which is conducive to work/lifestyle balance.

This will also allow Isaac LGA residents from outside Moranbah, Dysart and Middlemount to travel home at the end of their rosters, as long as combined on-site hours and travel time do not exceed 14 hours (applicable to the workforce's daily commute, and at the beginning and end of a series of shifts), as required by BMA's workforce fatigue management policy.

Given BMA's locally targeted recruitment strategies for this Project, it is considered that up to 100 existing residents and 100 new in-migrating residents could be employed for operations. With an estimated total workforce of 500, this level of local employment would limit the commuting workforce (FIFO and DIDO) to 300 personnel, or approximately 60% of personnel.

The Project will also provide additional opportunities for local employment through support services such as transport and the supply of goods and services.

Decommissioning

The operations workforce would decrease from up to 500 people to approximately 250 – 260 employees and contractors in the two years prior to Project closure, with subsequent job losses for Project employees and contractors. After 2043, if no extensions are sought and approved, the Project's workforce would decrease to a staff of approximately 20 personnel to manage decommissioning and rehabilitation. The loss of jobs may be experienced as a disruption to family plans and careers, however the planned transition to a smaller workforce and clear, early advice plans to employees, local communities and IRC will mitigate impacts on family and community wellbeing. It is also possible that other mines, particularly underground mines, will provide a ready place of employment when the project closes, however Federal and State energy policies may see some constriction in mining employment by 2045 so this is uncertain.

4.2.2 Workforce management principles

BMA's workforce management principles for the Project are:

- facilitating the employment of Project employees who choose to live in the Isaac LGA (as required by the SIA Guideline 2018);
- a dual focus on recruiting existing local residents and attracting new residents to the key centres of Dysart and Moranbah;
- no discrimination against job applicants on the basis of where they live;
- supporting BHP's goal for 50% female employment by 2025;
- working towards a target of 5.75% Indigenous personnel by 2025;
- provision of both long term employment and contract employment opportunities;
- supporting personnel who intend to move to the Isaac LGA to do so, including through provision of subsidised housing;
- enabling all personnel who live within a safe daily driving distance to choose their living arrangements (i.e. residential or commuting);
- a commitment to workforce training and skills development for all personnel employed by the Project; and
- all Australian citizens and permanent residents will be eligible to apply for Project jobs.

4.2.3 Recruitment

BHP's drivers for increasing the number of locally-based personnel include:

- maintaining Project access to a strong local skills base;
- support for permanent population growth which will increase local towns' vitality and sustainability;
- a commitment to an inclusive and diverse workforce, with a focus on increasing the number of women and Indigenous people employed;
- development of a strong workplace health and safety culture supported by a cohesive workforce; and
- a commitment to actively support personnel's choice of living arrangements.

As part of planning for the construction phase, BMA will:

- identify businesses with relevant capacities in consultation with BMA's Local Buying Program;
- include the Project's commitments to maximising the involvement of Isaac LGA residents and those from the Central Queensland and MIW regions in construction management and major works package contracts;
- require the construction contractor to brief businesses and prospective applicants in Moranbah and Mackay about Project opportunities;
- provide advance notice of the construction schedule through BMA's Local Buying stakeholder register;
- ensure Indigenous businesses in the Isaac, Central Queensland and MIW regions who may have capacity to supply the construction phase are identified and contacted as part of the construction tendering and sub-contracting process; and
- monitor the success of local employment and local business participation and require principal contractors to report on local employment statistics.

The Project's recruitment strategy for operations will ensure equitable and non-discriminatory access to employment opportunities. Isaac LGA residents will be encouraged to apply for Project employment (construction and operations) and will be given full and fair consideration in recruitment processes. BMA will also target people from the Central Queensland and MIW Regions, including women and Indigenous people.

As part of its recruitment strategy for operations BMA will:

- advertise project employment opportunities within the Isaac LGA at an early stage of the recruitment process;
- include in its job advertisements a statement that Isaac LGA residents, women and Indigenous people are strongly encouraged to apply;
- contact BMA's recruitment network and partners (including the Moranbah and Dysart State High Schools, Mackay TAFE, CQU, BBAC and Mackay and Rockhampton-based recruitment and employment support agencies) to advise them about the Project schedule and employment opportunities;
- promote employment opportunities through:
    - community and stakeholder engagement networks;
    - the Project's recruitment contact network;
    - BMA websites;
    - BBAC, QRC and RIN;
    - employment agencies operating in the Isaac, Central Queensland and MIW Regions;
- provide job applicants with access to online information pack including a profile of local communities to support 'new local' employees to understand the amenity, services and housing options on offer; and
- identify new personnel's housing needs and facilitate provision of housing for personnel who wish to move to Moranbah or Dysart.

As part of its commitment to workplace diversity and inclusion, BMA will also collaborate with Hinterland Community Care in Dysart and MDSS in Moranbah to identify and support programs and partnerships which develop employment pathways for local people with disability.

4.2.4 Indigenous employment

BHP's Reconciliation Action Plan 2017-2020 details its commitments to Indigenous employment. The key objective is to 'contribute to the economic empowerment of Aboriginal and Torres Strait Islander peoples through investment which provides opportunities for employment, training, procurement and Indigenous enterprise support'.

BHP's target is to achieve Aboriginal and Torres Strait Islander employment of 5.75% of its total managed workforce including direct, contracting and labour hire employees by 2020-21. The Project is likely to set a goal of 5.75% for its first year of operations.

The Isaac LGA's labour force in 2016 included 337 Indigenous people, of whom 28 people or 8.3% were unemployed. There were also 114 Indigenous young people of 15-24 years in 2016, many of whom will reach working age during the Project's early operational years. The Mackay LGA's workforce included 2,334 Indigenous young people in 2016, of whom 21.5% were unemployed.

The Isaac and Mackay regions should therefore be considered as a primary recruitment area for Indigenous workers. Barada Barna people living in other regions could also be attracted to work in the Project through engagement of the BBAC during the recruitment phases for construction and operations.

During the term of its previous RAP, BHP invested almost $26 million the education and training involving Indigenous people. Established BHP programs and staff resources for implementation of culturally specific training initiatives will be implemented for the Project.

An Aboriginal and Torres Strait Islander Economic Empowerment Plan will also be developed for the Project as outlined in Section 6.7.4.

4.2.5 Choice and flexibility

Accommodation choices

Queensland Resources Council (QRC) surveys in 2011 and 2015 to determine resource sector employees' views on their accommodation arrangements and choices indicated that the ability to choose accommodation arrangements is important for employees, with 83% of residential respondents and 65% of NRW indicating that it was 'very important' they were given the option of deciding between long-distance commuting or living locally[95].

Project employees will be given a choice of:

- living in towns within the Isaac LGA which are within a safe daily driving distance;
- drive-in drive out arrangements, which will be available to residents in other parts of the Isaac LGA and adjacent LGAs, subject to fatigue management requirements; and
- FIFO arrangements from a designated FIFO hub in one or more regional centres within Queensland.

The Project's support for local settlement is discussed in Section 4.3.3.

[95] QRC and URS (2015) Workforce Accommodation Arrangements in the Queensland Resources Sector

Commuting arrangements

BMA anticipates that some personnel from other regions would choose to move to the Isaac region for project employment, and some would choose to live in WAVs while they are on roster. Population and hosing considerations are outlined in Section 4.3.

Personnel who live within a 1 hour drive of the Project will be able to commute to work daily. People driving to work will access the Project Site via the Dysart-Moranbah Road, (an IRC road) which runs along the western edge of the proposed MIA. Access to the MIA and the CHPP will require a new intersection with Dysart-Moranbah Road, which will require approval from the Department of Transport and Main Roads (DTMR), Queensland Rail and IRC. An internal access road would be required to link the proposed WAV to Lake Vermont Road, with a new intersection at the juncture.

People who live more than 1 hour's drive from the project will be required to stay in a WAV during their rostered-on shifts. Those who can travel home by road within fatigue management requirements will have access to DIDO arrangements, and personnel whose homes are further away will be provided with FIFO arrangements.

The Moranbah airport will be used for the transportation of non-local Project personnel. Currently, the Moranbah airport is operating approximately 36 flights per week on a Dash 8 (or equivalent) aircraft with approximately 60 passengers per aircraft. During operations, the Project could result in up to 15 additional trips per week. This increase can be accommodated within the existing capacity of the Moranbah airport.

The Project may require one or more FIFO hub(s) to support workers travel, the location of which will be selected with consideration to the availability of appropriately skilled and experienced personnel during the year prior to the Project's anticipated operational commencement.

Permanent and contracting jobs

BMA anticipates that approximately 70% of operational personnel would be permanent BMA employees and 30% would be contractors. Contracting opportunities offer flexibility for BMA and personnel, however unions are concerned that contract employment does not offer the benefits of permanent employment (such as job security and support for stable local populations).

Contracting is an established part of the business model for many companies (in mining and across other industry sectors). Companies based in the Isaac and Mackay LGA are key suppliers for BMA's existing mining operations and will be a key source for contracted personnel, supporting local businesses' sustainability and job options for locally based personnel.

Flexible work practices

Engagement with the local Women in Mining forum identified the potential to employ local people to replace relief drivers who would otherwise have come from other regions. As a result, BMA has instituted the 'local crib relief' program at the Saraji Coal Mine, which offers shorter shifts aligning with school hours, allowing personnel to maintain skilled local employment and balance family responsibilities.

BMA advises that to date the program has created 50 local roles, directed $4 million in wages into the local community, and brought 20 families back into the area into housing previously left vacant (with approximately 20 families currently on a waiting list). Workplace benefits have included greater productivity and an improvement in workforce culture and morale

BHP has established BHP Operations Services (OS) as internal company which currently has more than 500 employees. OS was established to stabilise the workforce and improve the workplace safety culture, by reducing the use of contracting arrangements and offering employment security[96]. OS offers permanent roles and flexible working arrangements, including night-shift only, day-shift only, part time, job share, staggered shifts and casual work, and a choice of 2 on/1 off, 1 on/2 off rosters. OS is currently recruiting for people with mining or related heavy industry experience but anticipates that trainee or apprentice positions will be available in the future. Interest in employment by OS has been very high, and BHP anticipates that some of OS's employment practices (such as flexible working arrangements) will also be highly attractive to Project personnel.

The learnings from the Saraji Coal Mine and OS will be applied to the Project, and other flexible working arrangements will be offered as part of the Project's employment options.

Benefits of Project Employment

As noted in Section 3.7, the Mackay and Central Queensland SA4s had a collective 2,183 people employed in Heavy and Civil Engineering Construction, so it is likely construction workers in both regions will benefit from Project opportunities. Given regular demands for these specialist skills in the Bowen Basin, some of the construction personnel are likely to be drawn from the Isaac LGA and adjacent LGAs, however personnel with specialist mine construction skills are highly mobile, and the majority are likely to be drawn from other regions.

Prior to the Project's construction, BMA will refine construction workforce estimates to provide a greater level of detail on the workforce ramp-up. Updated data will inform discussion with IRC and other stakeholders regarding personnel's demands on local resources in the LGA, and will also inform BMA's briefings to business in the Isaac LGA and the Mackay-Isaac Whitsunday region to ensure they are aware of the range and timing for opportunities to supply the Project.

The availability of long term, skilled employment would be a significant benefit to local and regional residents who are skilled and/or interested in employment in the mining industry. The Project's 500 operational jobs will increase the number of direct BMA jobs in the Isaac and Central Highlands LGAs by more than 5%, and support ongoing employment and training opportunities for the region's residents. In particular, the choice of living locally or commuting will be attractive. As an underground mine, the Project will also offer skills diversification and development for existing mining personnel.

4.2.6 Likely availability of personnel with relevant skills

Section 3.7 details the economic and employment profile in the Isaac LGA, with supplementary information on the wider labour force regions of Mackay and Central Queensland SA4 regions.

Key factors supporting labour availability in the Isaac LGA and broader region include:

- a young population and higher than average labour force participation;
- a construction industry labour force of 11,728 people and a coal mining workforce of 20,168 across the Mackay and Central Queensland SA4s;
- higher unemployment among women and Indigenous people than white men;
- increasing participation of Indigenous people and women in mining;

[96] BMA. 2019.

- considerable strengths in occupational groups which support mining e.g. machinery operators and drivers, and technicians and trades workers;
- the likelihood of latent unemployment i.e. people who are unemployed or underemployed but not registered as jobseekers; and
- evidence that labour force participation has increased (and unemployment decreased) in the Mackay SA4 in response to increased mining job opportunities over the past year.

Key factors constraining local and regional labour availability include:

- the Isaac LGA is a significant importer of labour;
- the number of job opportunities in mining has increased over the past few years;
- unemployment in the Isaac LGA and in the Mackay SA4 is currently low;
- there are skills shortages in the region with difficulties recruiting machinery operators, maintenance staff, project managers, industrial cleaners and a range of trades;
- BMA is currently having difficulty recruiting for all trades and technicians, dragline operators, equipment maintainers and drill and blast professionals; and
- the number of vacancies in key mining occupations totalled approximately 2,260 in January 2019.

Department of Industry, Innovation and Science forecasts[97] indicate that Australian exports of metallurgical coal for steel making are expected to increase between 2018 and 2023, with an average compound annual growth rate of 3.5% per annum, however the value of Australian metallurgical coal exports is expected to decrease by an average of 1.2% per annum between 2016-17 and 2022-23[98]. On this basis, modest ongoing growth in mining industry employment might be anticipated, with potential to exacerbate current labour and skills shortages.

In this context, and in view of the employment choices and flexibility the Project will offer, BMA expects to be able to recruit some of the Project's workforce from the Isaac LGA and others from within the Mackay and Central Queensland SA4s, with personnel from other Queensland regions making up the balance.

With an assumed two years before construction may commence and four years before operations may commence, labour availability is likely to change. Monitoring strategies which address this variability are outlined in Section 7. BMA's key strategies addressing skills shortages are outlined in the following section.

4.2.7 Training and development

The Project's operation depends on the availability of adequately trained and experienced staff.

IRC has identified the need to upskill the local workforce as a response to forecast changes relating to mechanisation /automation of coal mines.

BMA undertakes a number of strategies to strengthen the skills base and availability of labour for project construction and operations, including school and industry based training partnerships across the Bowen Basin, structured training through traineeships and apprenticeships, and strategies to increase Indigenous people's employment opportunities.

[97] Department of Industry, Innovation and Science. 2018b (Forecast Data)
[98] Department of Industry, Innovation and Science. 2018a. p.15

BMA is also facilitating training and trade qualifications for local young people through its support for the Coalfields Technical Centre of Excellence (CTEC) in Moranbah.

In 2018, BMA provided 40 new apprenticeships each year at Bowen Basin mines, noting apprenticeships as a key part of the company's commitment to local communities. The 2018 intake included 15 people from Moranbah, seven from Blackwater, seven from Dysart, seven from the Mackay area and four from Central and North Queensland. The 2019 intake of 41 apprentices had a similar breakdown. The Project will participate in BMA's apprenticeship program by providing ten apprenticeships by 2025 and maintaining this commitment throughout the Project life.

For the construction phase, the Principal contractor will coordinate across construction contractors to manage the demand for tradespeople over the course of construction. To facilitate opportunities for training and employment of local people, the Principal contractor may require liaison with Construction Skills Queensland and the Department of Education and Training.

For operations, BMA will co-ordinate direct employment of apprentices and trainees. Training and development strategies for the Project's workforce will include a focus on new entrants to mining and re-training of existing mining personnel for underground mining. BMA's commitment to in-service training and 'back to work' opportunities for injured workers will also support workforce development.

BMA will assess skills availability for the construction and operational phases, six months prior to construction and one year prior to operations, to enable specific training and recruitment strategies to be established in time to resource the Project.

A range of local and regional training organisations are available to support increased training and capacity development initiatives. Strategies for increased training supply will include a focus on the existing skills gaps and capacities within the Isaac and MIW regions, to increase opportunities for local people to access training opportunities.

4.2.8 Workforce health and wellbeing

BMA is committed to providing workplaces which support physical and mental health.

Workers' health and safety will be the Project's first objective during both construction and operation. The Project will fully comply with mine safety and health legislation, including the *Mining and Quarrying Safety and Health Act 1999, Coal Mining Safety and Health Act 1999* and their associated Regulations as amended in 2017, as well as all Recognised Standards as published by Business Queensland.

Workers accommodated in local towns will have access primary, specialist, dental and allied health professionals, and a wide range of physical and cultural facilities which support individual and community wellbeing (see Section 3.6). Personnel accommodated in WAVs have access to purpose-built accommodation and associated services such as healthy eating, communications technology and fitness programs (see Section 6.5).

As a result of recent coal workers' pneumoconiosis cases, there maybe be concerns about mine dust contributing to lung diseases. The Coal Mine Workers' Health Scheme (CMWHS) is used to determine fitness for work and provide early diagnosis and intervention for respiratory diseases such as coal mine workers' pneumoconiosis and silicosis.

This includes screening coal mine workers to detect early signs of disease, referring workers for follow-up, diagnosis and management if required, reducing dust exposure for workers with respiratory abnormalities, and collecting, analysing and reporting data to support reviews of dust exposure levels and occupational exposure limits for coal mines[99].

BMA will comply with CMWHS requirements for employers, which include:

- arranging and pay for workers' health assessments, using providers registered with DNRME to undertake respiratory health assessments;
- appointing nominated medical advisers (NMAs) in writing and notify DNRME on appointment and ending of engagement;
- using health surveillance information provided by DNRME to inform preventative measures;
- providing current and emerging respiratory health information to workers; and
- participating as a member of relevant committees or other groups.

Mental health

Australian Institute of Health and Welfare research indicates that 45% of Australians aged 16 to 85 will experience a common mental health disorder (such as depression, anxiety or a substance use disorder) in their lifetime. On the basis that mental illness is common, all employers including mining companies have a responsibility to ensure that workplaces support good mental health issues[100].

Research on the mental health of male mining workers published in 2014 analysed indices of relationship quality, work-family balance, and mental and emotional health for males employed in the Australian mining industry. The report noted qualitative research had found relationship and mental health difficulties amongst mining workers, primarily relating to long rosters, shift work, and (for NRW) long absences from home However, the researchers noted that speculation that miners may be at elevated risk of poor mental health outcomes was not well supported by empirical evidence (at the time). The findings, based on analysis of data from the Household, Income, and Labour Dynamics in Australia (HILDA) survey did not support the hypothesis that resources sector employment is associated with greater relationship/work-family stress, or with poorer mental and emotional health, relative to employment in other occupations. However, longer working hours were associated with measures of work-family stress[101] .

Research by working on remote Australian mining and construction sites in South Australia and Western Australia during 2013-2015 found elevated levels of psychological distress in the remote mining and construction workforce in Australia, with workers aged 44 years or less, workers who had separated from their partner, and workers employed on compressed roster swings (2 weeks on/1 week off or 1 week on/1 week off) showing higher levels of distress, and potential for FIFO workers to experience mental health issues as the result of isolation from their families, roster patterns and a workplace culture which may fail to acknowledge mental health issues[102] (Bowers et al. 2018).

[99] Business Queensland. 2018.

[100] Australian Institute of Health and Welfare 2018

[101] McPhedran, S. and De Leo, D. 2014

[102] Bowers, J. Lo, J. Miller, P., Mawren, D. and Jones, B. 2018.

MCA's Blueprint for Mental Health and Wellbeing[103] notes that employers and industry can play a role in addressing mental health and describes a mentally healthy workplace as one which "strives to support the mental health of employees at all levels… creates a positive working environment that builds individual skills and resilience, reduces workplace risks to mental health, and supports staff with mental health conditions".

The Project will initiate a suite of strategies to enhance awareness of mental health issues and access to support services in the workplace.

As part of the tendering process for construction, Principal and major contractors will be required to demonstrate an excellent health and safety record, describe in detail how they will manage work practices (including offsite driving) to minimise risks to personnel, and detail how they will promote a healthy workplace.

For the operations phase, BMA will adhere to the Our Requirements documents for Health, Safety, Environment and Community.

BMA also contracts an Employee Assistance Program (EAP) provider to provide proactive support for mental health and family issues. To promote workforce health and minimise impacts on local services, BMA will also:

- employ staff with paramedical or nursing qualifications to manage minor health issues on site and deliver health and wellbeing programs focused on physical and mental health;
- explore a contract with a local GP clinic to provide workplace health services e.g. Coal Board medicals, immunisation, health promotion programs and access to a GP for employees living in the construction WAV;
- develop personnel's skills to identify and respond to mental ill-health in the workplace, including staff awareness, referral pathways between the workplace and health care providers, and engendering a culture that supports mental wellbeing;
- promote use of the Queensland Government's 13 HEALTH (13 43 25 84) confidential phone service which provides health advice;
- ensure awareness of domestic and family violence, and how to seek help at the worksite, through the EAP or through community services; and
- promote recovery through return to work after illness or injury.

Fatigue management

Fatigue management is a core policy for BMA projects and operations. BMA's construction contractor will employ fatigue and journey management policies which are consistent with BMA's requirements. This will include rest days for construction workers to maintain sleep levels, and attend to health and fitness.

[103] Minerals Council of Australia. 2015.

Fatigue and journey management procedures for operations will include:

- a training approach which educates managers, supervisors and workers in fatigue management, including:
    - how to recognise the effects of fatigue;
    - the influences of a healthy lifestyle and non-work activities;
    - the effects of medical conditions, sleep disorders and drugs and alcohol;
    - personal measures to manage fatigue; and
    - how to access the EAP;
- standard rosters which can only be varied through risk assessment and authorised sign-off;
- monitoring employees and contractors shifts to ensure fatigue management guidelines are met;
- accommodation in ensuite rooms with state-of the-art light, noise and temperature control; and
- separation of crews on night and day shift within the WAVs utilised to accommodate operational personnel.

Additional journey management strategies include:

- bus transport to and from the village and work sites, as well as to and from the airport;
- providing guidelines to workers which outline acceptable safe journey management practices; and
- discouraging the use of private transport by workers.

Operations workers are also required to provide individual journey management plans which detail how they will safely travel between their homes and the airport (and back), in line with BMA guidelines.

Compliance will be monitored, including through regular consultation with the Queensland Police, and policies and practices modified if required.

4.2.9 Effects on local and regional labour markets

As described in previous sections, the Isaac LGA and nearby LGAs have significant strengths in the construction and mining services industries which will enable them to respond to Project opportunities. In 2016 the Isaac LGA's workforce included 364 construction industry workers (see Table A-5) and 6,024 Mining industry workers (see Section 3.7.1). At the broader regional level, there were 11,728 people in the Mackay and Central Queensland SA4s combined that were employed in construction, and 23,472 people employed in mining (see section 3.7.6).

The requirement for 1,000 construction personnel would exceed the Isaac LGA's construction workforce capacity by approximately 200%, requiring a large proportion of workers to be sourced from other regions. In the context of the combined construction industry workforces in the Mackay and Central Queensland' SA4s, 1,000 personnel would represent approximately 8.5% of the 2016 workforce, however the Heavy and Civil Engineering Construction sector is most likely to supply personnel. This sector had a workforce of 2,183 personnel across the two SA4s in 2016, so the Project's requirement would require approximately 46% of these personnel. As such the Project has potential to draw construction labour away from other businesses and industries in the region that rely on specialist heavy construction skills. However, construction personnel are highly mobile and are likely be drawn from across Queensland regions, with minimal long term effects on labour availability.

With 500 operational personnel required, this would represent 8.3% of the Isaac LGA's resident mining workforce and 2.1% of the mining workforce residents in the Mackay and Central Queensland SA4s combined. People who are new to the mining industry are also being targeted through recruitment and workforce development strategies, so the demand on existing local and regional industries would be reduced, and long term negative effects on labour availability are not anticipated.

There is however a risk that Project demands for personnel and contracted services will exacerbate current skills shortages and result in recruitment difficulties for other local businesses and industries in the short term after the Project commences, and labour shortages which may see a drain of labour from local businesses and services to the Project. Of note, many Project personnel who move to the Isaac LGA for Project employment will bring partners and young people with them, providing a source of additional labour for local businesses and services and could offset any labour drain.

Local initiatives and partnerships which would assist local businesses and services to improve their capacity to recruit and retain staff would be considered under the C-Res Local Buying Foundation Program (see section 4.5.).

4.2.10 Indirect employment

Economic impact assessment undertaken as part of the EIS[104] indicates that the Project is likely to lead to indirect employment.

During the construction phase, the average yearly contribution to employment made by expenditures pertaining to construction related activities at the regional, state and national level are estimated at:

- an average employment contribution of 445 FTEs, comprising 226 direct FTEs and 219 indirect FTEs in the MIW Region (Mackay SA4);
- an average employment contribution of 719 FTEs, comprising 236 direct FTEs and 483 indirect FTEs in the rest of Queensland; and
- an average employment contribution of 143 FTEs, comprising 46 direct FTEs and 97 indirect FTEs in the rest of Australia.

Contribution to employment during the operational phase of the Project are estimated at:

- an average employment contribution of 683 FTEs, comprising 385 direct FTEs and 299 indirect FTEs, in the MIW SA4;
- an average employment contribution of 407 FTEs, comprising 253 direct FTEs and 153 indirect FTEs in the rest of Queensland; and
- an average employment contribution of 508 FTEs, comprising 307 direct FTEs and 201 indirect FTEs in the rest of Australia.

This likely to make a contribution to the wellbeing of personnel and their families who obtain employment indirectly created by the Project.

[104] CDMSmith, 2019

4.3 Population, housing and accommodation

This section describes the Project's potential impacts on the Isaac LGA's population and housing availability, and outlines proposed workforce housing and accommodation arrangements.

4.3.1 Basis of assessment

Assessment of impacts on population and housing has assumed that the Project may be constructed during 2021-23 and commence operations in 2023, reaching full operations in 2025.

Residential population estimates for the Isaac LGA during this period have been estimated (see Table 53) using the QGSO's projected average annual percentage increase of 0.6% for the Isaac LGA (see Section 3.2.1). The population is expected to increase by approximately 794 people during 2021 – 2026. QGSO's projections factor in available information and include consideration of the Isaac region's existing and known future industry profile.

Table 53: Isaac LGA Population estimates 2021-2026

Isaac LGA	2021	2022	2023	2024	2025	2026
Est. Resident Population #	20,762	20,887	21,012	21,138	21,265	21,556
Est. NRW *	11,580	11,760	11,170	11,130	11,292	11,292
Est. Total FTE Population ~	32,342	32,647	32,182	32,268	32,557	32,848

Sources: # QGSO. 2018h Projected population by LGA, medium series, apportioned using projected average annual percentage increase. *QGSO. 2018. Bowen Basin: Non–resident population projections, by local government area (LGA), 2018 to 2024, NB: 2017 Estimated by QGSO. 2018-2024 projected by QGSO. 2025-2026 estimated by consultant based on previous 5 year average. ~ Addition of estimated residential land non-residential population.

The estimated number of NRW in the Isaac LGA during this period is shown in Figure 19, based on QGSO's Series B projections for NRW. The number of NRW is estimated to increase from approximately 10,580 to 11,580 in 2021 and 11,760 in 2022, before declining to 11,130 in 2024. The number of NRW during 2025-2026 has been estimated based on the previous 5-year average.

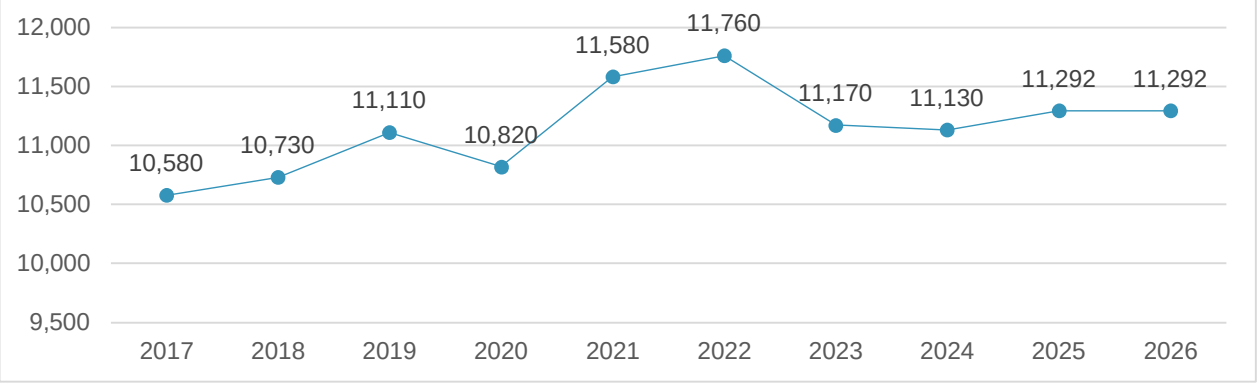


Figure 19: NRW Isaac LGA (Series B) 2017 – 2024

Source: QGSO. 2018. Bowen Basin: Non–resident population projections, by local government area (LGA), 2018 to 2024, NB: 2017 Estimated by QGSO. 2018-2024 projected by QGSO. 2025-2026 estimated by consultant based on previous 5 year average

4.3.2 Population changes

Construction

The construction phase is likely to draw some personnel from within the Isaac LGA, however given the specialised nature of the work and the mobility of construction labour, the majority are likely to be drawn from other regions. Assuming 10% of construction employees may be drawn from within the Isaac LGA, the construction workforce would include 450 NRW during 2021 and up to 900 NRW in 2022-2023.

The construction roster is likely to approximate 21 days on and 7 days off. On this basis, estimates of population impacts during construction are based on 75% of the construction workforce (including NRP) being rostered on at any one time.

This would see 338 NRW in the LGA, which is equivalent to an increase of approximately 2.91% on the estimated number of NRW in the Isaac LGA in 2021, 5.74% in 2022 and 6.04% in 2023 (when the projected NRW population is estimated to have decreased slightly).

Compared to the FTE population (NRW plus estimated residential population), this would be an increase of approximately 2.10% on the estimated FTE population in Isaac LGA in 2023. As shown in Table 54, with construction coinciding with the first year of operations, the total (temporary) increase in the estimated FTE population would be equivalent to approximately 2.52%.

The Isaac LGA's services and businesses are accustomed to servicing population influxes, however construction would lead to a requirement for accommodation (as discussed in section 4.4.4) and to small and temporary increases in demands for health services, emergency services and infrastructure such as water and waste water management as discussed in section 4.4.

The construction phase would see also an increase in the number of males in the Isaac LGA. In 2016, 54.5% of residents were male[105], so the number of males in the LGA at 2022 is likely to be in the order of 11, 280 people. Assuming 90% of non-resident construction workers are male, and 75% of those are on shift at any one time, this would see an additional 607 males in the Isaac LGA in 2022-2023, resulting in a temporary increase in the imbalance between males and females.

Construction personnel are proposed to be accommodated in a WAV on MLA 70383 (refer Figure 1), minimising interactions with residents, except in settings such as service or business transactions. Whilst local towns are resilient to population influxes of this nature, all personnel will be made aware of their obligations to behave in a respectful manner to local residents, business staff and service providers. as discussed in Section 4.2.2.

As noted, indirect employment would also be created in the MIW Region as a result of Project and workforce expenditure in the construction phase. To the extent that this indirect employment is generated within the Isaac LGA, and requires the importation of additional workers, a small additional population increase may result, however this is not quantifiable.

[105] ABS Quickstats. 2018.

Operations

Assuming construction commences by 2021, BMA anticipates that approximately 260 personnel would be required during 2023-2024, and up to 500 personnel would be required from 2025 to 2041. During 2042-43, prior to decommissioning the Project, the workforce would likely ramp down to 260 personnel.

BMA's strategies to increase local availability of personnel include:

- prioritising local recruitment;
- providing traineeships and apprenticeships to attract young people to the industry; and
- maximising employment opportunities for women and Indigenous people.

Project employment is therefore likely to attract local residents, both skilled workers and those who are new to the industry. On this basis, the SIA has assumed that approximately 100 personnel could be existing Isaac LGA residents, including those who are new to the industry or attracted from other local mining operations.

BMA's key incentives to attract personnel to the Isaac LGA include:

- the opportunity for well-paid, long term, skilled, locally-based employment;
- promotion of opportunities to live in the communities of Dysart and Moranbah;
- offering subsidised housing to Project personnel who choose to move to Dysart, or Moranbah subject to availability; and
- investing in community development to enhance the amenity and quality of community services and facilities in local towns to increase their attractiveness to new personnel and families.

Given the proposed recruitment strategy plus the attractiveness of long term employment, subsidised housing, ongoing training and development, and the amenity and lifestyle offered by local towns, this assessment has assumed as a 'base case' that an additional 100 personnel could be attracted to live in the Isaac LGA by the end of 2025.

BMA considers that this base case suitably balances the "pull" factors mentioned above with the constraints associated with the high level of labour importation to Isaac LGA.

Estimates of population change and housing demand resulting from the Project as shown in Table 54 and discussed below are based on the following assumptions:

- up to 100 existing Isaac residents could be attracted to Project employment by Year 3 of operations (assumed as 2025);
    - 60% of existing Isaac residents employed by the Project would maintain their existing housing arrangements (as owner occupiers, tenants or family members of people with existing housing entitlements) and 40% (primarily those already employed in mining) would require new housing arrangements;
    - existing local residents who require housing would all require family housing (i.e. one worker per dwelling);
- up to 100 operational personnel would originate from other regions and settle locally in Moranbah or Dysart:
    - the average new household size would be equivalent to the Isaac LGA 2016 average of 2.7 people per household;
    - at least 20% of new residents would share units or houses at an average rate of 2 people per dwelling, with the balance being family households;

- operational personnel from outside a one-hour daily driving distance would be accommodated in existing WAVs in the LGA to support fatigue management, which could represent approximately 300 personnel; and
- with a roster pattern of eight days on, six days off, seven nights on and seven nights off, approximately 50% of the operational workforce (including NRW) would be on site at any one time.

As shown in Table 54, attracting 100 personnel and their families to the region would result in a population increase of approximately 270 people by 2025, equivalent to a 1.27% increase in the estimated residential population. As the majority of the BMA housing on offer is in Dysart, this is likely to lead to a significant increase in the Dysart population, in the order of 200 or more people.

Based on historically low unemployment levels in the Isaac LGA, and assuming current skills and labour shortages continue, the Project is also likely to draw a large proportion of its operational workforce from outside the Isaac LGA. Project personnel will be given the option of locally based employment (enabled by provision of BMA-subsidised housing) or commuting arrangements.

On the assumption that 100 existing residents and 100 new local personnel could be recruited, up to 300 NRW would be employed. This would result in an increase of 150 NRW on shift by 2025, which would represent an increase of 1.33% on the projected NRW population. Commuting arrangements would be predominantly FIFO but may include DIDO arrangements.

IRC has noted that it considers both full-time residents and NRW as important in planning for services and infrastructure, to ensure that all have access to an appropriate level of services while they are living or staying in the LGA. Together, estimated numbers of new residents and NRW on shift at 2025 would represent an increase of approximately 1.29% on the estimated FTE population in 2025.

As for the construction phase, the Project is likely to generate additional indirect employment in the Isaac LGA, resulting in a small but unquantifiable additional population increase, and supporting the sustainability of local communities.

Table 54: Estimated population and housing demand change

Isaac LGA population and housing impacts	2021	2022	2023	2024	2025	2026
Est. Resident Population	20,762	20,887	21,012	21,138	21,265	21,556
Est. NRW	11,580	11,760	11,170	11,130	11,292	11,292
Est. FTE Population	32,342	32,647	32,182	32,268	32,557	32,848
Construction population change						
Construction workforce	500	1,000	1,000			
Construction NRW	450	900	900			
At 75% on shift (equivalent to the number of WAV beds required)	338	675	675			
Increase on Est. NRW	2.91%	5.74%	6.04%			
Increase on Est. FTE population	1.04%	2.07%	2.10%			
Operations population change						
Est Workforce			260	260	500	500
Est. Commuting – total			156	156	300	300
Est. commuting personnel on shift at 50%			78	78	150	150
Increase on Est. NRW			0.70%	0.70%	1.33%	1.33%
Est. existing local personnel			50	50	100	100
Est. new local workers			50	50	100	100
New local residents @ 2.7 per household			135	135	270	270
Increase on Est. residential population			0.64%	0.64%	1.27%	1.25%

Isaac LGA population and housing impacts	2021	2022	2023	2024	2025	2026
Increase on Est. FTE % (NRW and new local residents)			0.66%	0.66%	1.29%	1.28%
Combined population impact - construction and operations 2023			810			
Combined impact on NRW 2023			6.74%			
Combined impact on estimated FTE 2023			2.52%			
Operations housing requirement						
Est. housing requirement for 40% existing locals			20	20	40	40
Family dwellings for new residents at 80%			40	40	80	80
Shared dwellings for new residents at 2 people/dwelling			5	5	10	10
Est. total housing requirement operations			65	65	130	130
Est. Number of WAV beds required			753	78	150	150

4.3.3 Housing and accommodation

As described in Section 3.4, the Isaac region has experienced significant fluctuations in housing affordability and availability during the past five years. With recent increases in mining employment and improvements in housing affordability, local towns are currently experiencing strong demand for rental dwellings.

The most recently available data indicate that rental vacancy rates are very low in Moranbah and low in Dysart. There were 107 dwellings listed for rent and 152 dwellings listed for sale between the towns of Moranbah, Dysart and Middlemount in April 2019 (see Table 55).

Table 55: Housing available at April 2019

Town	Rental Listings			Stock on market (purchase)		
	Houses	Units	Total	Houses	Units	*Total*
Dysart	35	4	39	26	1	*27*
Moranbah	46	11	57	114	10	*124*
Middlemount	6	5	11	0	1	*1*
Total	87	20	107	*140*	*12*	*152*

Source: Realestate.com.au/Invest Accessed 14 April 2019

Construction

All non-local construction personnel would be accommodated in the construction WAV, and the Project would discourage non-resident construction personnel from renting local housing, to avoid the potential to limit permanent residents' housing choices.

WAVs utilised by BMA are shown in Table 56 based on data provided by BMA and IRC. BMA data indicate that the four WAVs owned by BMA had a total capacity of 3,949 rooms (38 less rooms than indicated by IRC's data as provided in Section 3.4.9, as Curtin House is not in operation, and there are minor variances in the number of existing rooms in the Moranbah Single Persons Village (SPV) and Buffel Park). BMA personnel also utilise a total of approximately 1,433 rooms in WAVs owned by third parties. Of the 3,949 rooms available in these facilities, approximately 480 rooms (12.2% of total capacity) were available in March 2019. Other WAVs in the Isaac LGA (such as the Civeo Village Coppabella) have considerable additional capacity (see Table A-2).

Table 56: WAVs owned or used by BMA, March 2019

WAV	Ownership	Total Rooms	Utilised rooms	Available rooms
Moranbah SPV	BMA	594	590	4
Dysart SPV	BMA	430	425	5
Eureka	BMA	1,486	1,169	317
Buffel Park	BMA	1,439	1,286	153
Total BMA		3,949	3,469	480
Leichhardt Village	Third party	500	370	Fluid

WAV	Ownership	Total Rooms	Utilised rooms	Available rooms
Dysart Ausco	Third party	400	283	Fluid
Dysart Civeo	Third party	280	760	Fluid
Total Third Party		1,180	1,413	Fluid

Source: BMA Workforce Accommodation data on BMA rooms and utilisation; IRC data (2016) on WAVs' approved capacities

Current approvals for increased capacity of BMA facilities include an additional 261 beds at the Dysart SPV, 3,000 beds for the approved but not developed Red Hill Mining Lease (RHML) Project, and 503 beds for the Buffel Park Village.

The RHML WAV, if constructed, would accommodate RHML personnel, and be approximately 90 kms by road to the Project's north-northwest, which would be a two hour around trip for Project personnel and therefore not suitable for the Project.

As per Table 56, approximately 153 rooms are available in the Buffel Park WAV. There are no current plans to expand the Buffel Park WAV, and at approximately 58 km by road to the Project, Buffel Park is not a preferred option for construction personnel. There is also potential for the Dysart SPV to be expanded by approximately 261 rooms (see Annex A Table A-2). This of itself would be insufficient for expected numbers of non-resident construction personnel, and would cause an increase in the already high percentage of people in Dysart who are NRW, which may not be supported by local residents.

The Project's timing is uncertain, as is the availability of WAV accommodation when the Project's construction commences. However, given recent employment growth in response to increasing coal prices and the likelihood that some of the projects with an approved EIS or working towards an EIS would proceed, cumulative pressures on existing WAV stocks are likely.

The Project therefore includes a proposed WAV for the construction phase to accommodate up to 1,000 people. This would:

- ensure personnel can be located in quality accommodation close to the Project Site;
- limit personnel's travel time between the Project Site and their accommodation;
- reduce personnel's use of local roads;
- enable access to health, recreation and support services within the WAV, which will reduce demands on local services; and
- minimise the Project's demands on housing, and avoid inflation of rental costs.

The construction WAV will be located along the eastern boundary of MLA 70383 and will cover an area of approximately 80 ha. Buildings will be pre-fabricated and transportable to minimise site construction impacts.

The construction WAV will consist of:

- village reception, offices and gatehouse;
- accommodation modules;
- wet and dry messes, recreation centre, gymnasium, sports field, walking tracks, bus and recreation shelters, and muster shelters.
- training room;
- laundry facilities and linen store;

- communications, IT rooms, transformer and substation;
- kitchen facilities;
- first aid facilities; and
- water treatment plant and sewage treatment plant.

All buildings will be in accordance with the requirements of relevant statutory regulations and codes.

A dedicated first aid room will be provided within the village reception building and will have access directly from the reception area and access via the ambulance bay which will be located adjoining the building. The first aid room and equipment will comply with the requirements of the First Aid Advisory Standard 2004 as well as the *Coal Mining Safety and Health Act 1999*.

An EAP for counselling and emotional health issues, and regular health promotion programs will also be provided.

Following the completion of construction, the construction WAV would be dismantled and removed from site.

As sufficient accommodation beds for all non-local personnel will be available in the construction WAV, impacts on short term accommodation are not expected.

Operations – local workers

Table 54 indicates that up to 130 dwellings could be required to house Project personnel by 2025, including existing residents who would lose their housing entitlements as the result of leaving their current jobs, and personnel (BMA employees and contractors) who would move to the Isaac LGA. Non-local contractors, having fixed-term employment and with permanent bases elsewhere, are less likely to establish a permanent local home in local towns, however some rental housing demand would be expected, so the requirement for up to 130 dwellings has been considered below.

At March 2019, BMA owned a total of 528 dwellings in Dysart, of which 29 dwellings were vacant and ready for allocation, and 161 dwellings were under care and maintenance until required, sold or redeveloped (see Table 57). BMA also owns 871 dwellings in Moranbah, of which 37 were vacant and ready for allocation.

Table 57: BMA Dwellings at March 2019

Area	BMA Properties	Occupied Properties	Properties in Care and Maintenance	Vacant and ready for allocation
Moranbah	871	834 (96%)	0 (0%)	37 (4%)
Dysart	528	338 (64%)	161 (30%)	29 (5%)
Total Isaac LGA	1,399	1,172 (84%)	161 (12%)	66 (5%)

Figures 20 and 21 show the location of BMA's residential properties and landholdings in Dysart and Moranbah respectively, demonstrating that BMA's properties are well distributed across the two towns.

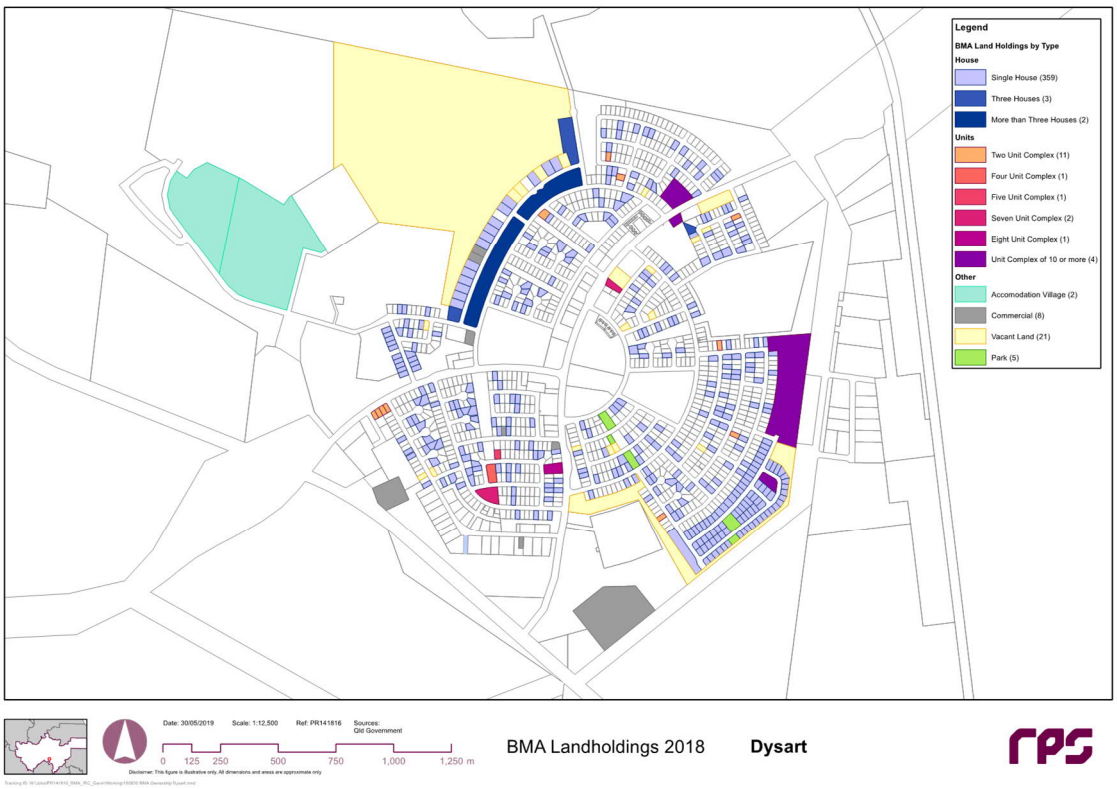


Figure 20: BMA landholdings in Dysart

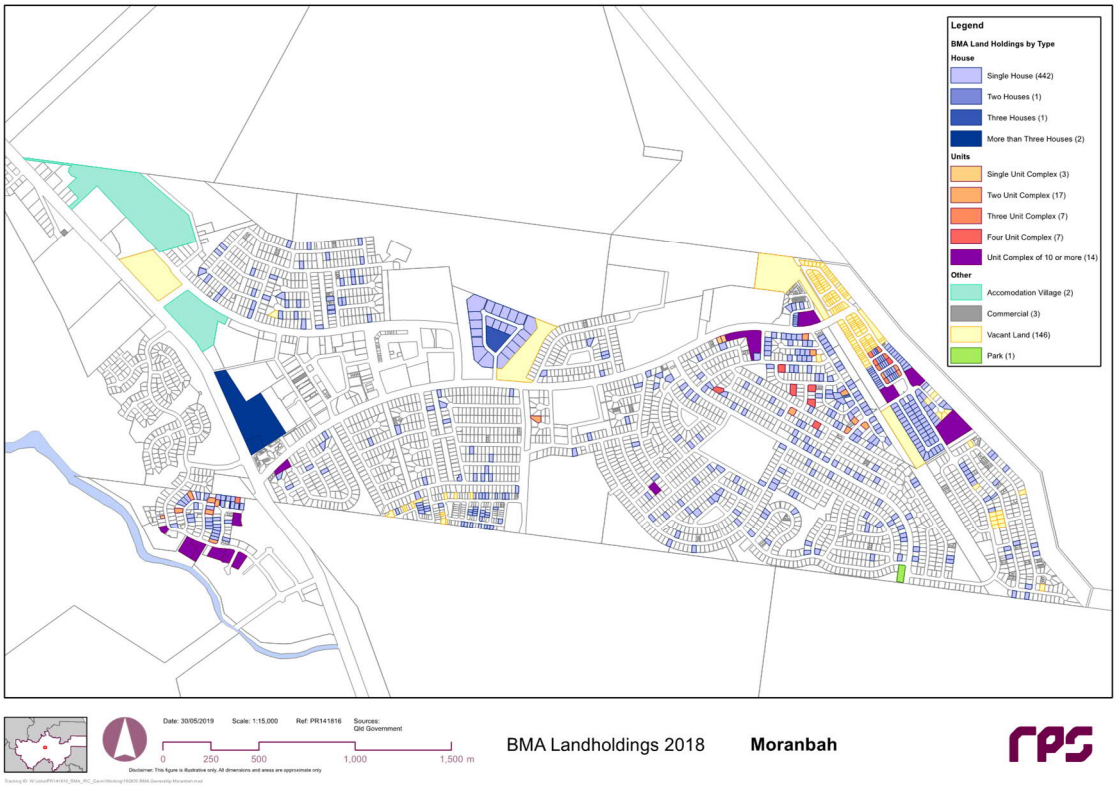


Figure 21: BMA landholdings in Moranbah

All BMA employees are eligible for company-provided accommodation options which include units, houses and WAV accommodation. Allocation of accommodation options is determined taking into account an employee's preferences, needs, the number of dependent children and other relevant family circumstances. BMA provides significant subsidies for housing costs, and also provides an ongoing housing maintenance and upgrades program.

BMA invests in the refurbishment of properties (as necessary) to return them to its employee rental pool, and will ensure that housing will be available for all BMA personnel who wish to relocate to Dysart. This would substantially mitigate demands on local housing stocks and minimise any rental price increases that would otherwise be induced. Some personnel may also choose to move to Moranbah and would be provided with housing there, subject to availability. Employees choosing to relocate from outside the region to live in Dysart or Moranbah may be also entitled to relocation assistance.

Contractors' housing requirements are likely to increase incrementally between 2023 and 2025. BMA will consult with its contractors to ascertain the requirement for housing of non-local personnel. If this consultation indicates that there is a shortfall between housing currently used by the contractors or their employees, BMA will arrange for contractors' access to BMA housing, equivalent to this requirement.

With up to 190 BMA dwellings currently available in Dysart, and a further 37 dwellings available in Moranbah, BMA considers that it has a sufficient number of dwellings in Dysart and Moranbah to accommodate Project personnel who choose to move to the LGA. BMA periodically reviews its housing stock and implements an ongoing maintenance and upgrade program to ensure quality housing stock is available to its workforce. If this housing supply is inadequate due to any unforeseen

factors, BMA will develop new housing on its vacant and build-ready lots (which include a total of 141 vacant residential lots in Moranbah and residential 17 lots in Dysart). On this basis, BMA expects to be able to accommodate all locally-based personnel using its existing housing stocks.

On the expectation that BMA will provide housing in Dysart and potentially Moranbah for all personnel who wish to move to the Isaac LGA, impacts on housing affordability as the result of personnel settling locally are not expected.

Indirectly, an increase in business employment and service demand will also lead to increased demand for housing in Moranbah, Dysart and potentially Middlemount. IRC has noted that businesses in Dysart are already experiencing difficulties accommodating their workers, due to rising rental costs. BHP remains open to interest from other parties, including local services and businesses, regarding the use of surplus BHP housing, and will consult with the Dysart Business Group and Moranbah Traders Group regarding their members' needs and potential arrangement for use of BHP housing.

Short term adjustments in the market may see an increase in rental costs as a result of the combined effects of indirect employment and contractors' housing demands, however with residential land available and at lower costs than in previous years, and based on the expectation of long-term contracting opportunities, housing development is likely to be stimulated.

IRC advised in consultation that the most recent land valuations saw decreases of up to 40% in residential land values in the Isaac LGA. This is uncomfortable for property owners, but also affects Council's rates base. There is potential for housing demand induced by the Project to cause a small increase in property values, however this is likely to be a small and incremental effect and is unlikely to impact housing affordability.

Operations – non-local workers

The Project had proposed to seek approval for a new WAV to support the Project's operational stage, dependent on labour market conditions and housing market conditions during the pre-project phase. The proposed operational WAV has been removed from the Project on the basis of feedback from key stakeholders including the IRC and OCG.

BMA will accommodate its non-local operational personnel in existing WAVs, which collectively had sufficient spare capacity (and substantial approved capacity for expansion) in 2019. As the operational commencement date is not certain, but is at least four years in the future, identification of WAVs which will accommodate personnel is premature, but these are expected to include the Dysart SPV, Buffel Park and Dysart Ausco which is located on a site owned by BHP Coal. BMA would monitor demand for WAV beds as part of its recruitment process, and plan to ensure that all NRW have access to WAV beds when required. As all non-local personnel will be accommodated in local WAVs, impacts on short term accommodation are not expected.

4.4 Health and community wellbeing

This section discussed potential impacts and benefits for social resources which support community health and wellbeing. Stakeholder inputs of relevance to impacts on health and community wellbeing include:

- a construction workforce of up to 1,000 people would create a substantial demand on health and emergency services;
- there are fewer emergency resources available in towns when they are required at mine sites;

- an operational workforce of up to 500 personnel was expected to see substantial demands on health and emergency services, whether new locals and family members or NRW;
- childcare services are currently limited;
- insight regarding workforce build-up is desirable two to three years in advance to enable a response (i.e. increased resources) in time to increase health, school and community services; and
- concern for increased cumulative impacts on the safety of the local roads.

4.4.1 Potential for social disruption or exacerbation of disadvantage

Non-local workers have long been part of mining operations in the Isaac LGA, with accommodation provided on mining leases for 'single status' local and non-local personnel from the late 1960s. Use of non–resident production workforces in the Bowen Basin commenced in the 1990s but increased substantially during the 2000s, reaching a peak of 25,035 people in June 2012[106].

As noted in Section 3.2.4, there were approximately 2,465 NRW in Moranbah, 1,790 in Dysart, and 1,455 in Middlemount in 2018[107]. WAVs were utilised by 89% of NRW staying in the Isaac LGA in June 2018[108], mitigating impacts on housing and local venues, however stakeholders describe large percentages of non-local workers as diminishing the sense of close connections and familiarity. Communities within the Isaac LGA have extensive experience in accommodating non-local workers, and Project-related increases are not expected to impact on local community or cultural values.

However, during periods when there are high cumulative numbers of NRW in the LGA, residents experience the NRW influx as a strain on roads, public venues and health services, and there are occasional concerns about safety in relation to NRW behaviour. Crime statistics (presented in Section 3.5.6) indicate that local towns are very safe communities, notwithstanding the numbers of NRW currently accommodated in and around the towns. Non-local construction workers may not observe local values such as family-friendly public places, and may offend through anti-social behaviour or poor driving behaviour. Large increases in the number of non-local males in town centres and venues may also make women uncomfortable, and there is potential for inappropriate or illegal behaviour to reduce feelings of safety for women, or to impact on women's safety.

Recruitment of workers will occur across a range of age, gender and other groups to promote balance and positive behaviour amongst the workforce.

BMA's Workplace Conduct Policy provides clear guidelines to follow concerning conduct, and requires all workers to treat others with courtesy, dignity and respect, both at work and outside of work. Expectations of behaviour in town, and respect for local values, will be made explicit in on-boarding and induction programs for the Project. This will include behaving respectfully and courteously to service providers such as hospital, GP clinic and ambulance staff. Compliance with the Principal Contractor's 'Work Rules' (for construction, outlining expectations of behaviour) and BMA's Workplace Conduct Policy (for operations) will be required. Workers demonstrating behaviour that does not comply with the company requirements will face disciplinary action in line with the terms of their

[106] QGSO. 2016a

[107] QGSO. 2018

[108] *Ibid*.

employment. Workers staying in WAVs will also be bound by the facilities' Codes of Conduct, with withdrawal of accommodation the result of non-compliance.

BMA will also provide information to the local community about BMA's expected standards of behaviour, and access to its complaints mechanism.

Venues such as hotels and clubs are well-versed in managing patrons' behaviour, and BMA has established relationships with key venues and local Police to ensure open communication about workforce behaviour. This will include:

- participation in the Moranbah Liquor Industry Action Group;
- liaison with the Dysart and Middlemount Liquor Industry Action Groups;
- sharing information about BMA's Workplace Conduct Policy; and
- establishing contacts between local stakeholders and BMA with regard to workforce behaviour.

The Project is not expected to have any impacts which would increase the potential for social disadvantage in potentially affected communities. Conversely, access to BMA training pathways, the availability of skilled employment in underground mining and the incomes which come with mining employment are likely to increase workers' personal development and increase their access to resources which support wellbeing (e.g. housing security and the financial resources to access services).

BMA's ongoing support for community development initiatives and advancement of Indigenous people's economic and community development goals are also likely to contribute to social resources which reduce the potential for disadvantage.

In the cumulative context there is potential for competition for tradespeople to increase the costs of trades to local residents. BMA has committed to trades training programs, including 10 apprenticeships to be offered by the Project, to offset this impact. On the assumption that BMA's provision of housing and accommodation for its workers would mitigate increases in rental housing increases, other potential effects on costs of living in local communities are not anticipated.

4.4.2 Impacts on infrastructure, services and facilities

Project-related population increases are likely to result in incremental increases in demand for infrastructure supporting telecommunications, water supply, sewage treatment facilities, road traffic, air travel and waste management in the Isaac LGA. Most local infrastructure has serviced populations higher than that which could result from the in-migration of Project personnel, so population increases due to the project are not expected to require increased infrastructure capacity requirements.

Water and waste management

BMA operates a water pipeline network in Central Queensland, servicing its mines, landholders and towns. Water supply for the Project will be provided via the existing water network supplying Saraji Mine. An important aspect of the operational strategy for the Saraji Mine complex is to re-use mine water wherever possible as a priority over external pipeline raw water supply. Some of the water requirements for the operations require high quality water sourced from an external pipeline raw water supply. BMA holds allocations of water from the Fitzroy and Burdekin water catchments and numerous licences to interfere with and take water across BMA's mine sites. BMA will prepare, update and maintain a Water Management Plan.

The existing EWPC Southern Extension Water Pipeline, which supplies water to the Lake Vermont Mine, has the potential to be impacted by subsidence associated with the Project's underground mining operations. It is proposed that the pipeline be relocated to the transport and infrastructure corridor on the eastern edge of the Project Site.

A sewage treatment plant (STP) will be installed to service the MIA and the construction WAV. Effluent from the STP will be managed as part of the overall existing Saraji Mine water management system. The STP will be designed for a capacity of 1,200 equivalent persons. Effluent from the STP and the WTP will be discharged to the tailings dam at the existing Saraji Mine.

IRC noted in consultation that its waste management facilities in Moranbah and Dysart have a limited life, and expansion of these facilities is one of Council's key priorities. BMA will prepare and implement detailed Waste Management Plans for the construction and operational phases to address the relevant aspects of the legislation, adopting strategies consistent with the intent of the waste management hierarchy. This will include transportation of regulated waste to waste management sites outside the Isaac LGA, until discussions with IRC indicate that local waste management facilities' capacity is sufficient to manage Project waste without impacting on other users or Council's resource capacity for waste management.

Energy and communications

Electrical power will be supplied via the existing power network supplying the Saraji Mine and the construction of a new 66 kV powerline to Dysart Power Station and northern connection. Preliminary assessment indicates that the proposed increase in fleet and CHPP would not exceed existing network capacity following the construction of the supporting power infrastructure. The existing 132 kV powerline, which is owned and operated by Powerlink, will be relocated to the eastern transport and infrastructure corridor.

The telecommunications network will be managed by extending the services from the Saraji Mine through to the Project site via the existing service corridor. This system will allow for easy connection through to existing BMA systems. Telecommunications will be controlled and monitored through the Project control room located on site or from a centrally located facility in Brisbane. The potential for partnership between BMA and IRC to develop an additional radio transponder is noted, which could make a positive contribution to local infrastructure. BMA is investigating the shared value of this proposal and will liaise with IRC in this regard.

Agreements with Isaac Regional Council

BMA's agreements with IRC address the impacts of its operations on local infrastructure, including:

- contributions to road maintenance, as outlined in the Transport and Traffic Assessment;
- contributions to the LGA's water supply, as per BMA's agreements with IRC;
- the agreed waste management strategy;
- investments in social infrastructure (see Section 6.8) and
- support for the ongoing operations of the BMA-owned Moranbah Airport.

On this basis, negative impacts on local infrastructure are not anticipated, with the exception of increased demands on social infrastructure as discussed below.

4.4.3 Impacts on social infrastructure

Health, police and emergency services

Construction

BMA will require its construction contractor and WAV provider to demonstrate how they will provide a safe workplace and accommodation arrangements respectively, and to detail the strategies in place to support personnel's health and wellbeing.

Health facilities and service provision for all persons accommodated in the WAV will include:

- access to a paramedic and emergency services staff, trauma kits, defibrillators and drug and alcohol testing facilities;
- gyms, outdoor recreation space, sporting field and sports equipment, social meeting places and barbecue facilities;
- an EAP for counselling and emotional health issues;
- regular health promotion programs such as physical activity programs, reduced smoking and alcohol consumption;
- health monitoring programs such as skin checks and blood pressure testing; and
- nutrition and education programs delivered through the WAV's dining facilities.

To minimise non-local employees' demands on local services, the workforce on-boarding process will also ensure that all non-local employees and contractors understand:

- routine matters and existing health issues should be addressed before they commence their rosters;
- where relevant, prescription drugs, prescriptions and records of health issues should be brought to site for every roster;
- on site health staff's assistance can be sought in relation to health concerns; and
- their supervisor or manager should be made aware of any health issues that are hampering their ability to undertake usual duties.

BMA strategies would reduce impacts on local health services, however some construction personnel will require GP and hospital services while they are on shift.

As noted in Section 3.7, there is a shortage of GPs in Dysart. This would be the closest GP clinic to the WAV, and would likely experience most of the demand. NRW are likely to attend to routine and specialist health issues in their home towns or regional centres, so they do not represent a full time load on local services. There are no data to identify how many non-local personnel attend a doctor while they are rostered on, so analysis of NRW worker's demand for GP services has made the conservative assumption that 10% of workers in any one rostered-on period would visit a GP.

At an estimated 450 non-local workers on shift at peak, using Queensland Health's Rural Health benchmark of one GP to 600 people, this would be equivalent to a demand for approximately 0.08 of a GP. This may be an appreciable increase in demand for the one GP currently servicing Dysart and may cause increased waiting times for other patients. The Project will need to monitor the level of GP provision and potentially facilitate an increase in the supply of local GPs.

The Moranbah and Dysart Hospitals have both noted in consultation that non-local workers represent a significant cumulative impact on their services, as workers resort to the hospital's emergency services departments for minor health issues. Local hospitals do not have full term doctors so the load is carried by nurses, with demands for treatment and associated administrative work considerable during 'peaks' when there are large numbers of non-local workers in towns. The potential for some non-local personnel to behave aggressively towards health service staff was noted in SIA consultation. As discussed in section 4.4.2, all Project personnel will be required to behave in a courteous and respectful manner in interactions with health and emergency staff.

NRW are also likely to make regular low-level demands on police (e.g. for vehicle licensing issues) and occasional demands on police, QAS and QFRS services for responses to traffic accidents and emergencies including injuries and sudden acute illnesses. Increased demands on police for the escort of oversize loads is also likely, however this is managed by Queensland Police by enabling police to provide escorts on a commercial basis while they are off-shift.

The Isaac region's emergency services currently have limited capacity to service their geographic region and the FTE population, as staffing levels are generally calculated on the resident population, and non-residents increase the population load without commensurate increases in funding. BMA will liaise with the Queensland Police Service, Queensland Ambulance Service and Queensland Fire and Rescue Service to advise of the timing of Project construction and the anticipated workforce ramp-up for construction. BMA will also ensure local QPS, QAS and QFRS officers are oriented to the Project Site during construction, and provided with on-site contacts for to manage site access and coordinated emergency responses.

The Project's proposed WAV is located more than 30 km from Dysart, the closest town. The WAV will incorporate dining facilities, a licensed bar (with stringent controls on alcohol service) and sport and recreation facilities. As such it appears unlikely that construction personnel will make any other significant demands on local social infrastructure, with the exception of occasional visits to shops or hotels in Dysart. This is likely to be experienced as positive for local business trade.

Operations

This section considers the potential for impacts on health, police and emergency services from a combination of residential population increases and NRW during operations. As outlined in Section 4.3.2, the Isaac LGA 's FTE population could see a total population increase (inclusive of new residents and NRW on shift) of approximately 420 people by 2025, which is equivalent to an increase on the estimated FTE population of approximately 1.3%.

A resident population increase of 270 people, based on Rural Services' benchmark, would see the need for an additional 0.5 GP (with demand likely shared between Moranbah, Dysart and Middlemount doctors) by 2025. A large proportion of new households are likely to be young families who typically have more frequent needs for health services, so the demand increase may be higher than the population increase.

With 150 NRW on shift, and assuming 10% of them would require a doctor's appointment during their rostered on periods, this would represent a minimal increase in demand for GP services, in the order of 15 people. Workers would be advised not to use the Moranbah or Dysart Hospitals for minor health issues, however occasional demands on hospital services are likely.

As businesses, GP clinics can increase their staff resources to meet demand, and local clinics are of good quality with capacity for more service provision. However, recruitment and retention of doctors is a challenge to maintaining adequate capacity, and needs to be started well ahead of an anticipated increase in demand.

BMA will also monitor GP numbers and the ratio of GPs to local populations, in the pre-construction period, including consideration of non-local workers based in and around the three communities. If the GP: population ratio indicates that there are current or imminent shortages in the availability of GPs, BMA will work with stakeholders including community organisations, Queensland Health and IRC to identify and implement strategies which will attract and retain additional GPs to service local communities. In the past this has included provision of housing for health service workers, and participation in community-Council initiatives aimed at recruitment and retention of local doctors.

Locals have identified a decline in visiting specialist services and allied health services as the population decreased during 2012-2015. Increased demand for specialist and allied services is likely as the result of population influx related to the Project, and could impact on appointment times until demand thresholds are reached for more frequent or longer specialist visits to local towns. All BMA operational sites also employ health advisors, exercise physiologists, and qualified rehabilitation and return-to-work coordinators, and provide free on-site physiotherapy and occupational therapy services for work and non-work related injuries, which is likely to minimise demand on allied health services such as physiotherapists and occupational therapists.

The Project is not expected to have adverse impacts on community mental health, and conversely, access to secure employment and a choice of living arrangements may support the positive mental health of workers. Specific measures regarding promotion of mental health for the Project's workers are provide in Section 4.2.8.

Community service organisations consulted for the SIA identified increasing demands for non-local workers on mental health services based in Moranbah. This was in the context of increasing demand for mental health services from existing residents, with the cumulative impacts on NRW adding to the service load for the Moranbah District Mental Health Service and community support services.

BMA will provide access to an EAP, and ensure access to the internet and mobile phone services to maintain daily connection with family members and friends is provided for personnel staying in the WAV. However, some personnel may choose to access services in Moranbah and Dysart. BMA will monitor demands on local health and community health services in co-operation with the Mackay Hospital and Health Service Rural Services, and if a need for additional services in identified, work with local community partners in Moranbah, Dysart and Middlemount to identify appropriate service and program responses to address mental health issues.

Moranbah has two dental surgeries and approximately three FTE dentists, with their promotions indicating that new patients are welcome and same-day appointments are available. Dysart has one dentist who also services Middlemount, whilst Coppabella and Nebo residents rely on Mackay or Moranbah dental surgeries. Dentists would also see an increase in demand from both new residents and non-local residents with dental emergencies, but are likely to be able to adjust their service capacity to meet demand given adequate notice.

Increased demands on QPS, QAS and Rural Fire Brigades in response to WAV call outs, traffic incidents, and general community policing duties are also likely. As all ambulance stations apart from Moranbah operate with single officers on duty, the increase in demand will need to be closely monitored in co-operation with the services. Either or both of the Moranbah and Dysart QAS teams could be called to the project site, dependent on service personnel's availability, and both ambulance stations will need to be involved in site orientation and liaison with on-site Project staff.

Given timing for Project delivery is uncertain, it is recommended that 12 months prior to construction, BMA engage with local medical providers, including Moranbah Hospital, local GPs, QPS and the QAS, to assess capacity for additional demand to be absorbed by local service provision arrangements.

The capacity of health services capacity will also require monitoring by the Queensland Government as part of its assessment of cumulative impacts, and as part of planning for regional population growth.

IRC encourages mining companies in the LGA to support their advocacy for recognition of NRW as entitled to access services, and for funding of police, health and emergency services which is commensurate with the total FTE population. BMA's CDMP includes a commitment to collaboration between industry and Governments to achieve community outcomes, which would include joint advocacy with IRC for recognition of FTE population numbers in Isaac region communities. In particular, BMA and IRC agree that government funding for health services needs to be increased to meet the total demand represented by residents and non-residential workers. BMA will work with IRC to develop the platform (e.g. information on local needs) and mechanisms for joint advocacy on health service funding.

Childcare

Moranbah, Dysart and Middlemount each have child care centres with a limited number of current vacancies.

With a residential population increase of 270 people, new residents may include approximately 26 children 0-4 years (based on the percentage of children of this age in the Isaac LGA in 2016 at 9.7%), some of whom would require childcare. A June 2014 survey by the ABS found that nearly one quarter of all children aged 0-12 years usually attended formal child care including 14% attending long day care, 7.8% attending out of school hours care and 2.5% attending family day care[109]. On the basis that 16.5% of new local children may require long day care, this would see demand for up to five childcare places across the LGA.

With respect to out of school hours' care, 270 new residents could see approximately 42 new children between 5 and 14 years, and if 7.8% of them required care (as per the ABS survey results), up to four extra places would be required across the LGA, which is likely to be within current capacity.

Key issues which constrain workforce participation, especially for women, include the lack of overnight child care, and current long day care hours are not adequate to meet the needs of workers on 12 hour shifts. The Project will consult with all employees as they are on-boarded to identify their current and anticipated childcare needs, and if necessary, will collaborate with IRC, other mining companies and the DCCSDS to identify possible solutions.

As the number of new local families grows, it will be necessary to monitor the capacity of childcare services to ensure that both the Project and childcare planners are aware of issues which would constrain local or female workforce participation.

BHP has commissioned a study to fully quantify childcare provision. If a deficit in capacity is identified, BHP may look to building additional service capacity through partnerships with local stakeholders. Prior to Project construction, if consultation with IRC and childcare providers indicates that Project demand exceeds capacity at that time, BMA would liaise with local childcare providers, the Department of Education and IRC to identify and implement responses to supplement childcare service capacity.

[109] ABS. 2014.

Childcare availability should also be monitored by the Queensland Government as part of its assessment of cumulative impacts, and as part of planning for regional population growth.

Education and training

The profile of new local households is likely to be similar to the existing community profile, so the number of children who may join local communities as a result of Project-induced population increases has been estimated using the Isaac LGA's proportions of children and young people in 2016.

This indicates, as shown in Table 54, that a population increase of 270 people could include approximately 82 people under 20 years, of whom approximately 16 would be less than 5 years, 42 would be aged 5 – 14 years, and 13 would be aged 15 – 19 years.

The number of school enrolments required was estimated using the 2016 proportions of each age group who were attending an education institution. The results are shown in Table 58, and indicate that with a population increase of 270 people, there would be a demand for approximately four prep enrolments, 37 Year 1-10 enrolments, and up to seven Year 11-12 enrolments (noting that some 17-19-year-old students are enrolled in further education institutions). Local towns are unlikely to see the full estimated requirement for senior enrolments as a proportion of enrolments (around one third based on local anecdote) will go to private schools in regional centres. Enrolments for younger children are more likely to be required locally.

Table 58: Project induced increase in no. of children and young people

Age group	Isaac LGA ERP 2016	Age group % of ERP	% of group in education	Project increase – 0 – 19 years and enrolments	
				@ 270 new residents	Enrolments
0-4 years	2,034	9.71%	14.2%	26	4
5-14 years	3,270	15.62%	87.0%	42	37
15-19 years	1,020	4.87%	56.7%	13	7
Total	6,324	30.20%		82	48

The need for increased enrolments is likely to be felt primarily in Dysart, given the availability of BMA's provide housing stocks there, and to a lesser extent in Moranbah.

Day 8 enrolment figures for the five-year period from 2014-2019 (see Section 3.5.2) indicate Moranbah schools experienced increases in enrolments of at least 10% during 2018 and 2019, whilst Dysart schools experienced a small decrease indicating that population growth has not been as strong here. Dysart schools are likely to receive the majority of demand for school enrolments (as the majority of the BMA housing on offer is in Dysart) and are likely to have capacity to absorb Project-generated demand.

BMA will monitor the number off school-aged children coming to Moranbah and Dysart with new Project employees and provide advance notice of the number and age of children seeking enrolments to Education Queensland to assist schools to plan for adequate resources.

Increased demand on public and private training providers is likely to be spread across Queensland regions. Many are private organisations and will appreciate the opportunity for extra supply. BMA's CDMP has a specific focus on improving education and training pathways, as outlined in Section 4.3.10.

Social investments and community partnerships to increase training availability and its relevance to underground mining will be included in the CDMP for FY2020, in anticipation of Project operations commencing in 2023.

Council and community services

Council infrastructure and services which support community wellbeing and development include civic centres and community halls, pools (and in Moranbah, the Aquatic Centre), libraries in each town, the Moranbah Art Gallery, regular community events, and a wide range of sporting and recreation facilities.

Population growth as a result of the Project will increase demand for these services and facilities. As noted in Section 4.3.2, in-migration of approximately 270 Project-related personnel and family members would be an increase of approximately 1.27% on the forecast LGA population in 2025, and result in increased demand for Council services and facilities in this order. There is also likely to be demand on some Council services (e.g. recreational facilities and community services supported by Council) from NRW, but of a lesser order of magnitude given they will access most services from their home communities and/or in the WAVs.

Consultation with local service providers indicates that community and civic services such as counselling, financial counselling, disability services and family support services have limited capacity to an increased population. BMA's current CDMP includes a focus on mental health partnerships in the Bowen Basin, which is likely to see some increased capacity of support services before the Project is developed. Prior to commencement of construction, BMA will consult with Local and Regional planners regarding the existing capacity of community and civic service, and any potential opportunities for BMA to invest in enhancement strategies, through its Community Development Strategy or through the Royalties for Regions program, in respect to identified impacts.

The need for community and individual support services will need to be closely monitored during the first three years of operations, in cooperation with MDSS, Department of Communities, Disability Services and Seniors, and the DCSG and/or Hinterland Community Care Dysart. BMA will participate in initiatives led by community, Council or and Queensland Government agencies to address identified needs for community and individual support services in Moranbah, Dysart and Middlemount, both to mitigate impacts of Project-induced population increases, and to optimise local residents' access to services and programs which enhance their wellbeing.

Recreation and Cultural Facilities

Moranbah, Dysart and Middlemount have good access to recreational and cultural facilities, with numerous sporting fields, and club houses, libraries, the Moranbah Art Gallery, and a wide range of recreation and cultural associations. However, consultation participants report that resources to support the management and development of local clubs have dwindled as a result of 12 hour shifts, contract workers (who don't participate in community activities at the same levels) and increased numbers of FIFO workers.

In this context, facilities and services are adequate to absorb Project-induced population increases, but an increase in human resources which support facilities and the community organisations that support them is required. As part of planning for the Project's contributions to community development and enhancement, BMA will work with local community organisations and the IIRC to identify strategies which will increases human resources and skills available to support recreational and cultural facilities, including sporting clubs.

BMA regularly funds community organisations and groups to enhance local facilities (see Section 6.3 and 6.6).

Consultation and agreements with Local and State agencies

BMA has regular meetings with IRC to discuss changes to its operations in the LGA, proposed projects, infrastructure management and a range of community issues. This consultation results in a range of agreements which address the impacts of BMA operations on Council infrastructure, and support the wellbeing of local residents. BMA also consults with State agencies including Queensland Health and the Department of Education and Training through regular community forums and partnerships which address issues of community concern.

When timing for the Project is known, BMA will consult with IRC to identify any issues of concern with respect to infrastructure capacity and/or housing demand, to support development of collaborative responses.

BMA will also ensure that IRC, Queensland Health, the Department of Education and Training, and the Queensland Police, Ambulance and Fire and Emergency Services are updated annually on Project planning, and are advised of the intended workforce ramp-up, commencing six months prior to Project construction, and ending 12 months after full development is reached.

BMA will also consult with Queensland Health, Police, Ambulance and Fire and Emergency Services in developing its Emergency Management Plans and service protocols for the Project.

4.4.4 Community health and safety

Air quality

As detailed in the air quality assessment[110], estimates of background dust levels were developed using data from the Caval Ridge Mine Site 2 ambient air monitoring station located approximately 4 km north-west of the Moranbah Airport and 38 km north-northwest of the Project. Percentages of the Project air quality goals that are represented by the estimated background level ranged from 36% for dust deposition to 4% for total suspended particles (TSP) to 91% for the annual average concentration of PM_{10} (Ambient Air NEPM standard).

Assessment of Project impacts on air quality found:

- the potential for adverse impacts of dust from the Project (in isolation) at the location of the Saraji 2 Homestead and Saraji 3 Homestead during peak operations;
- adverse risks of impacts on air quality at the Saraji 2 Homestead and the Saraji 3 Homestead are predicted in association with Project goals for the 24 hour average concentration of PM10, so the implementation of additional dust mitigation measures may be required when excess ROM coal is transported from the Project CHPP to the Saraji Mine CHPP during adverse meteorological conditions at any time during the life of the Project; and
- results of the dust assessment did not highlight any significant air quality issues attributable to the Project at any of the other assessment locations.

Impacts on local air quality that are attributable to the Project were assessed as immaterial when compared to the air quality environment resulting from neighbouring open cut mining operations and as having minimal impact on the future air quality environment.

The assessment recommends the application of water as/when required to minimise dust emissions during construction, and recommends a number of key dust reduction features, including the transport of ROM coal by conveyor from the mine portal to the Project CHPP to minimise overall dust emissions during operations.

Road Safety

The traffic and transport assessment documents the assessment of traffic safety issues which may be introduced or exaggerated by the Project. They include:

- Lake Vermont Road is currently an unsealed road from Dysart Road eastward. As it would be used as the main access road to the proposed WAVs, upgrading is considered necessary;
- The geometric layout of the Dysart Road / Lake Vermont Road intersection is believed to be adequate for the Project traffic, however the assessment proposes lighting be installed at the intersection to improve visibility;
- One new intersection on Dysart Road will be required to gain access to the Project, the design and configuration of which are required to meet the traffic demand and safety for heavy vehicles during the construction and operation stage; and
- The geometric layout of the Dysart Road / Peak Downs Mine intersection is believed to be adequate, however installation of lighting was recommended to reduce any safety risk due to increased traffic resulting from the Project.

The Traffic and Transport Assessment provides mitigations for identified risks.

Exposure to hazards or risks

EIS Chapter 20 provides a comprehensive assessment of potential hazards and risks which may result from the Project. Residual high risks identified include traffic accidents, underground mine collapse, underground mine fire, high voltage electricity and natural hazards. Other potential risks to people and environment, such as dangerous goods, noise and vibration and coal dust associated with construction and operation of the Project have been assessed with medium or low residual risks.

The implementation of BHP Safety Our Requirements are anticipated to effectively manage most of the risks associated with the Project, and existing BMA operations have successfully demonstrated management of these risks. Further hazard analysis and ongoing communication and improvement strategies will also be carried out to enhance environmental values and workplace safety.

Risk assessment is an ongoing process and, as the project design evolves, the impact on risk will be regularly reviewed to ensure risks are as low as reasonably possible.

4.5 Local business and industry procurement

The Project's primary supply chain considerations include:

- the location of construction labour and operation personnel;
- access to equipment, consumables, professional services, maintenance providers and technical and trades sectors; and
- identifying local and Indigenous businesses who can be part of supply arrangements during construction and operation.

4.5.1 Local and regional suppliers

The indicative types of construction materials and services required for the Project are:

- earthmoving and site preparation;
- componentry for CHPPs, conveyors, MIA facilities and longwall construction;
- provision of steel and concrete;
- prefabricated buildings;
- conveyor building;
- construction management services; and
- trades services.

As described in previous sections, the Isaac LGA and the Central Highlands and Mackay LGAs have well-established construction and mining services industries. Earthmoving services may be sourced from the Isaac LGA, and raw materials for concrete and road base will be sourced from the Project Site or appropriate licensed local quarries. Concrete will be batched off-site, with the potential for an on-site batching plant if required. The remaining material and services will be accessed from outside the Isaac LGA, from across Australia and potentially from international sources.

The BMA Local Buying Program (C-Res) was created in 2012 to assist small to medium businesses in the Bowen Basin to competitively supply goods and services to BMA operations. The Local Buying Program provides opportunities for small businesses with less than 25 full-time equivalent employees to competitively supply goods and services to BHP, through registration, support and training. The Program covers a diverse range of categories of goods and services, with key categories including:

- trade maintenance services
- engineering consulting
- equipment maintenance services and mobile equipment hire
- industrial plant construction services
- earthmoving services; and
- accommodation and catering.

As at August 2018, there were 219 businesses from the Isaac LGA registered for BMA's Local Buying Program. More than two thirds were businesses based in Moranbah (70%). A further 17% were businesses from Dysart, 7% were based in Nebo and 4% were based in Middlemount, with the balance from Glenden, Clermont and Coppabella.

The Saraji Mine's supplier base through the Local Buying Program includes 115 businesses from across Isaac (38%), Central Highlands (13% and Mackay LGAs (49%). BMA's underground Broadmeadow Mine has a similar local supplier base of 143 businesses from across Isaac (33%), Central Highlands (17%) and Mackay LGA (50%).

During operations, a wide range of consumables, goods and services are required. BMA's Local Buy register indicates that services and goods which can be sourced from towns within the Isaac LGA, Central Highland LGA and Mackay LGAs for the operation phase include:

- electrical, welding and plumbing services;
- tyres and vehicle servicing;
- crane and equipment hire
- earth moving, drilling and construction companies;
- fabrication and engineering services;
- mining services;
- hardware and glazing services;
- cleaning companies;
- training services and health service providers
- pharmaceuticals, groceries, stationary and newspapers
- mining equipment hire companies;
- accommodation facilities;
- labour hire, recruitment and human resource management providers; and
- cafes and clubs, providing venues and catering.

The Project will ensure local and regional suppliers have full and fair opportunities to contribute to the supply chain, and will take full advantage of the Local Buying Program to ensure suppliers are supported to do so.

Further local procurement initiatives are being developed and may include:

- increasing awareness of local businesses of local businesses' capabilities and capacity, continued internal education;
- development of business-wide key performance indicators (KPI)s regarding local business annual spend targets including local and Indigenous sub-contracting KPIs in all tier 1 contracts; and
- implementing greater flexibility in procurement processes for small to medium sized local businesses.

4.5.2 Opportunities to enhance the capacity of local business

BMA's Local Buying Foundation is a key element of the Local Buying Program. Transactions incur a small processing fee which includes an allocation to the Foundation, which focusses on:

- Building Sustainable Business Futures – with focus areas including workforce development projects; economic development projects; and regional promotion and awareness; and
- Building Sustainable Business Communities, including industry training regional economic analysis and education and skills development for businesses.

These programs are likely to increase the capacity of local businesses to participate in the supply chain for the Project, as well as contribute to enabling business growth and diversification. The Queensland Department of State Development has also developed the Accessing Supply Chain Opportunities (ASCO) program to foster local supplier capacity and increase their awareness and readiness to access supply chain opportunities, and has endorsed consistent local content reporting through the Queensland Resources and Energy Sector Code of Practice for Local Content 2013 (the Code).

The Code is an industry-led self-regulated initiative, administered and monitored by Queensland Resources Council, under which resources and energy companies are encouraged to:

- adopt the principle of 'full, fair and reasonable' opportunity for capable local businesses to participate and implement an associated delivery framework
- complete a Code Industry Report (CIR) annually to assist the QRC in completing the annual Code Effectiveness Report; and
- participate in annual forums and/or the QRC's Local Content Working Group which aim to monitor and make improvement so the Code.

The Project will comply with the Queensland Resources and Energy Sector Code of Practice for Local Content 2013 (the Code) as outlined in the local business and industry procurement plan (Section 6).

4.5.3 Indigenous businesses

There are approximately 15 Indigenous-owned businesses registered for BMA's Local Buying Program, primarily from across Mackay, Isaac and Central Highlands LGAs.

Subject to compliance requirements, BHP's Aboriginal and Torres Strait Islander procurement processes and outcomes are flexible and willing to remove the barriers to improving Aboriginal and Torres Strait Islander business outcomes. Subject to compliance requirements, this may include:

- letting minor contracts that can be negotiated directly without tender processes;
- unbundling larger contracts;
- preferencing Aboriginal and Torres Strait Islander enterprises using weightings;
- providing support to meet qualifications; providing information regarding emerging procurement opportunities; and
- explaining company policies and processes.

The Project will proactively share information on procurement opportunities, supplier qualification and performance requirements with Aboriginal and Torres Strait Islander supplier networks and peer companies.

BMA is working on a series of measures which form part of a new comprehensive Local and Indigenous Sourcing Strategy, aimed at lifting BHP's capability and performance in working with local and Indigenous suppliers.

4.5.4 Effects on local business and key industries

With BMA's Local Buying Program in place for the Project, local businesses (in the Isaac LGA) and those in the broader region are likely to derive increased trade and business opportunities as result of participating in the Project supply chain. There is also a likelihood that expenditure by new local residents, and to a lesser extent NRW, will increase demand for local goods and services, and support ongoing sustained development of local businesses.

As noted in Section 4.5.2, BMA's Local Buying Foundation will assist in developing the capacity of local businesses to service not just the Project but other businesses and local residents. Key agents in the economic development of the SIA Study Area who will be engaged as part of refining capacity building strategies for local businesses include:

- Moranbah Traders Association, which offers a local business registration portal;
- Dysart Community Support Group;
- Isaac Regional Council's Economic Development team; and
- The Mackay Isaac Whitsunday Regional Development Authority.

IRC has prepared a mining tourism strategy to diversify and grow the LGA's economy by capitalising on local industry strengths. Tour access to an underground mine is likely to be welcomed as part of this strategy. If the Project is approved, BMA will liaise with IRC or the tourism strategy's delivery authority to investigate the potential for the Project to support the mining tourism strategy.

4.6 Cumulative impacts

Cumulative social impacts are the incremental and combined impacts – positive, negative or both – of multiple projects. Cumulative impacts may occur at the local level, e.g. demands on local housing supplies, and/or at the regional level e.g. consumption of labour.

This section considers the potential cumulative impacts of proposed mining projects which have completed or are undergoing an EIS process, and are fully or partially within the Isaac LGA, as shown in Table 59. Execution timeframes and workforce numbers were drawn from the projects' EIS', updated where possible from public sources.

All potentially impacted communities have experienced cumulative impacts – most notably on housing affordability, social infrastructure and labour availability - during peak mining industry periods. They have also experienced social impacts such as increased unemployment and decreased training opportunities during mining downturns.

These communities have significant experience with the cyclical nature of the mining industry, which has given them resilience and developed coping strategies to respond to the industry's ups and downs. However, the three communities and the Isaac LGA as a whole are highly dependent on the mining industry maintaining its contributions to local and regional economies.

Table 59 lists all currently proposed projects in the Isaac LGA. Given uncertainties in the timing of some projects, including this Project (SEMLP) the assessment of cumulative impacts is speculative.

The Project is not expected to impact on landholders' access to groundwater so no cumulative social impacts are expected in this regard.

Proposed projects, if they proceed, are likely to see significant demands for skilled mining and construction labour, and for housing and accommodation in the Moranbah and Dysart area. For example, the cumulative effects of RHML, Eagle Downs and Olive Downs projects may be felt predominantly in Moranbah, whilst the impacts of SEMLP, and the Olive Downs and Winchester South projects may be felt more in Dysart. Proposed construction dates for Eagle Downs were not available, so assessment of cumulative impacts with respect to this project have not been attempted.

If the Carmichael Coal Mine and Rail and China Stone Coal projects proceed with the workforce numbers stated in their EIS documents, labour demands are likely to be significant at the regional and State levels. There is also potential for major projects in other parts of the State to affect the State's

labour force capacity, including proposed mining projects in the Surat Basin, rail projects, and water and energy projects.

Prior to the Project's construction, BMA will reassess the potential for cumulative impacts and its local and regional implications, to inform further engagement with the DSDMIP, IRC and other proponents.

Employment numbers shown in Table 59 were sourced from the respective projects' EIS documentation and are subject to change.

Table 59: Proposed Projects within Isaac LGA

Project	Proponent	Location	Status	Peak Workforce
Byerwen Coal Project (BCP)	QCoal Group	20 km west of Glenden	EIS approved with conditions July 2014 (SDPWO Act) Early works commenced 2017	Construction – 350 Operation - 545
Carmichael Coal Mine and Rail Project (CCM&RP)	Adani Mining Pty Ltd	Approximately 160 km north-west of Clermont	EIS approved with conditions May 2014 (SDPWO Act) Early works commenced October 2017, construction commencing June-July 2019	Construction - 2,475 Operation - 3,920
Olive Downs Project (ODP)	Pembroke Resources South Pty Ltd	Approximately 40 km south east of Moranbah and 40 km north of Dysart	EIS approved with conditions May 2019 (SDPWO Act)) Construction proposed 2019-2021, operations from 2020	Construction – 700 Operation - Year 2/3 – 960; Year 14: 1,300
New Lenton Project (NLP)	New Hope Group	Approximately 65 km north-west of Nebo, 65 km north of Moranbah, and 20 km south of Glenden	EIS suspended 27 June 2018 (EP Act) Timing unknown	Construction -200 Operation - 300
Red Hill Mining Lease Project (RHMLP)	BMA	20 km north of Moranbah	EIS approved with conditions June 2015 (SDPWO Act) Timing unknown	Construction - 2,000 Operation - 1,500
China Stone Coal Project (CSCP)	MacMines Austasia Pty Ltd	Approximately 170 km north-west of Clermont	Draft EIS submitted September 2015 (SDPWO Act) – CG Approved with conditions Timing unknown	Construction - 3,892 Operation - 3,391

Project	Proponent	Location	Status	Peak Workforce
Winchester South Project (WSP)	Whitehaven Coal	30 km south of Moranbah	Draft Terms of Reference being prepared Construction from 2021, operation from 2022-23	Construction – 500 Operations - 450
Eagle Downs Project	South32 and Aquila Coal Pty Ltd	Approximately 20 km south-east of Moranbah	EIS approved with conditions 2010 (EP Act) Care and Maintenance since 2015, final feasibility study underway in 2018/2019	Construction - 360 Operation - 570

The Project's potential contributions to cumulative social impacts as identified by this SIA, relative to the timing of other proposed projects in the Isaac LGA, are discussed in the following subsections. Timing for the Eagle Downs Project and the number of personnel are uncertain, so assessment of cumulative impacts has not considered this project.

Assessment of the cumulative impacts of decommissioning has not been attempted.

4.6.1 Construction

The Project's assumed construction during 2021-2023 is unlikely to coincide with the construction phases for BCP (which commenced in 2017 ODP's Olive Downs South domain (planned for 2019 to 2021) or ODP's Willunga domain (planned to commence around 2027-2028).

The Project's construction phase could overlap with the ODP's early operational years which could employ more than 600 operations personnel by 2023, which would see a significant cumulative contribution to job opportunities, and potentially population growth in the Dysart area.

Timing for construction and operations of the NLP is also unknown, but if the EIS for NLP recommences in 2019-2020, an overlap between its construction period and that of the Project could occur. The NLP may accommodate workers in a WAV near the site (between Glenden and Moranbah) rather than near towns. Given the possible timeframes, the proximity of NLP to Glenden, and the application of safe commuting distances, it appears unlikely that the NLP's construction will have significant cumulative interaction with those of the Project. In combination with the Project, NLP would however contribute to a cumulative increase in employment available in the Isaac LGA, and to a small increase in the LGA's population.

The WSP is proposed to commence construction in 2021, which could see an overlap with the Project's construction, and would contribute to increased demand for existing workforce accommodation in the Isaac LGA, and a cumulative population increase of up to 1,400 NRW, with consequent demands on emergency and health services. As the Project proposes a construction WAV, no contribution to demand for existing facilities would be made.

Whilst previous years have seen higher numbers of NRW, there is potential for locals to feel concerned about the rising numbers of non-local people in their towns, however the stimulus may also be welcomed in communities such as Dysart.

The Project's plans to accommodate its construction personnel on site is expected to provide a significant reduction in workforce traffic movements, however the cumulative context would require careful management by each proponent to reduce traffic volumes and avoid impacts on traffic safety.

The timing for construction of CSCP and RHMLP is unknown, however it possible that construction periods may overlap with that of the Project. Coincidence of all peaks is unlikely, so the following discussion describes the highest maximum potential for impacts, as currently known.

If the Project's construction peak coincided with that of RHMLP (and assuming 10% of the Project's construction workforce are local hires), there could approximately 2,900 more construction workers in the Isaac LGA during 2021-2023. The majority of these workers would be based in WAVs, but would access town facilities in Moranbah and Dysart, and would be equivalent to an increase of 8.5% on the 11,760 NRW (see Section 3.2.4) that may otherwise be in the Isaac LGA in 2022.

If the construction phases for the Project, WSP, the RHML and CCM&RP were to peak concurrently, a cumulative demand for more than 7,000 construction personnel could result. Whilst this is considered unlikely, it could be a significant benefit for construction industry companies and workers in the Isaac, Mackay, Central Highlands and other Queensland LGAs. However, the results would also include intense competition for mining construction labour and skills both inter-regionally and at State level, accelerating labour costs and causing skills and labour shortages, which would impact on resource, infrastructure and other projects, as well as local businesses.

CSCP and CCM&RP construction activities (including workforce accommodation) would be concentrated at remote locations approximately 180 km west of Moranbah, however one or more WAVs accommodating approximately 400 people may be established near Moranbah for the CCM&RP Rail component. If this occurred and peaks coincided, the combination of the Project, RHMLP, WSP and CCM&RP construction workers could see up to 3,700 construction workers in the Moranbah area during 2021-2023.

Health services including the Moranbah Hospital and local GPs would see a substantial increase in demand which may tax staff resources if adequate notice of incoming workers is not provided. For example, with a cumulative non-local construction workforce of 3,300 in Moranbah, and assuming 10% of those required access to a doctor during their rostered on periods, a cumulative demand for at least 0.5 of a GP could result during this period. Impacts are also likely on Queensland Police, Ambulance and Fire and Emergency service resources, and would require increased funding if capacity is to remain adequate.

Cumulative demands on Council infrastructure such as water and waste water systems, roads, parks and municipal services would be experienced, however it has been assumed here that, given previous numbers of NRW have been higher, capacity exists within Council infrastructure to absorb cumulative demands at this level (with the exception of waste management as discussed in Section 4.4.2). BMA's existing agreements with Council are considered adequate to address the Project's contribution to demand.

The cumulative construction workforces would also result in increased demands for retail, hospitality, fuel and occasional meals at venue, in both Dysart and Moranbah, which would be experienced as a positive impact for local businesses.

Cumulative impacts on labour availability and supplier capacity may also be experienced as the result of other projects of State significance such as Inland Rail, the Kevin's Corner Project, Cross River Rail or port expansions. If multiple infrastructure projects proceed concurrently with mining projects in the Bowen and Galilee Basins, construction labour shortages are likely at regional and State levels. The SEMLP would however make a minimal contribution to these broader labour shortages.

4.6.2 Potential impacts during operation

Isaac LGA

The Project may commence operations within the same timeframe (2022-2023) as the WSP and ODP project which are also located to Dysart's north. Collectively, the three projects will change the nature of land use in this area, however the Project as an underground mine would have less visibility and require less additional infrastructure. Overall, mining is consistent with the existing land use in the area and supported by local communities. Planning for progressive rehabilitation and closure of the three projects will need to be conducted in compliance with the Mineral and Energy Resources (Financial Provisioning) Act 2018 and the associated Mined Land Rehabilitation Policy.

By 2023, BCP is expected have an established operational workforce of 545 personnel, likely to be based in the Glenden/Moranbah areas. The NLP's operational workforce of 300 personnel (also expected to be based in the Glenden and Moranbah area) may also have been established by 2023, for a total of approximately 845 personnel in this area.

ODP's workforce of 960 personnel and WSP's workforce of 450 personnel may also be in place by 2023/24. Assuming some operations personnel from the ODP, WSP and the Project settled in Dysart, this could see a steady and strong increase in the local population during 2022 to 2026.

Should recruitment for the Project, WSP and the RHML occur concurrently, this could represent a cumulative total of 2,450 additional jobs created by 2023. However, the RHML Project was assessed on the basis that up to 100% of the workforce would be FIFO workers, so the equivalent number of local jobs and population increases attributable to the project is difficult to determine.

Together with the possible addition of the CCM&RP's 3,920 operational jobs within a similar timeframe, the Isaac LGA is likely to experience a significant increase in demand for housing. BMA's commitment to make housing available to BMA employees is expected to substantially reduce the Project's contribution to cumulative housing demand. However, a portion of the Project's contract workforce will add to the cumulative accommodation demand (see Section 4.3.3).

The Project's operational workforce also will contribute to cumulative demand on social infrastructure, including mental health, general health and emergency services. There is likely to be higher demand for community, recreation and settlement services, and higher volumes of workforce commuter traffic associated with the operations phase.

The Isaac LGA's continued growth is anticipated by IRC, residents and the Queensland Government, but cumulative impacts may result in significant strains on local housing stocks and infrastructure in the short to medium term. Assuming sufficient housing could be developed, and matched by services and infrastructure, the cumulative benefits of projects would underpin Isaac LGA's sustainability for the next 30 to 50 years.

Inter-regional impacts

While timeframes are uncertain, the potential cumulative effect of a number of projects proceeding, whether concurrently or over a 3-5 year window, can include significant benefits for employment rates, labour force participation and household wellbeing in the Isaac, Mackay, Central Highlands and other LGAs which would benefit through employment or supply chain participation.

Local and regional businesses would experience substantial benefits from both cumulative population growth and projects' supply chains. However, the potential for labour draw and increased costs of competing for labour and skills could have significant negative impacts on both local and regional businesses.

This would require a considered strategic response in co-operation between the IRC, Queensland Government, mining companies and local business and industry networks.

4.6.3 Summary of potential cumulative impacts

In summary, the potential for cumulative social impacts during the Project's construction phase include:

- changes to perceptions of safety or access to services resulting from an increase in NRW;
- safety issues associated with increased traffic volumes;
- increased temporary demand on health and emergency services;
- creation of additional direct and indirect local and regional employment;
- contribution to regional skills shortages and labour market drain into the mining industry; and
- sustaining and enhancing opportunities for service industries and businesses in the LGA.

The potential for social impacts to occur during the Project's operations phase include:

- contributions to an increased population growth rate in Isaac LGA;
- health and safety issues associated with increased traffic volumes;
- increased workforce accommodation requirements affecting local housing affordability in Dysart, Moranbah, Middlemount and other LGA communities;
- increased permanent demand on social infrastructure, including mental health, general health and emergency services;
- continued provision of educational and training opportunities;
- sustained opportunities for service industries and businesses in the LGA; and
- enhanced economic development opportunities across the Bowen Basin.

All cumulative impacts are likely to be significant, but their likelihood is unknown.

4.7 Impacts of Project closure

The Project is likely to be in operation for approximately 20 years, with potential to extend the mine life. However, should the Project cease its operation, closure and decommissioning activities can be expected from approximately FY 2042.

Local social conditions are likely to be substantially changed by the time decommissioning occurs, and it will be necessary to evaluate the potential impacts of decommissioning in the context of local and social conditions and Government policy at the time.

Closure would see the loss of up to 500 operational jobs and may see some outflow of population from the Isaac LGA if other comparable jobs are not available. It is possible that closure will cause community anxiety regarding loss of benefits accruing from the mine, however given the large number of existing and proposed projects in the Bowen Basin, it is also possible the cessation would have little effect on local communities.

A workforce of approximately 20 people is expected to be required for the decommissioning and rehabilitation process. Personnel working on the rehabilitation and decommissioning program will travel to and from the Project Site based on their working arrangements. Depending on the skills required and local availability this is likely to include some non-local personnel who would be accommodated in WAVs, either on the Project site or in Dysart or Moranbah.

The decommissioning of the Project Site will occur on a staged basis over several years prior to closure. A comprehensive assessment of waste will be undertaken in line with the waste management hierarchy to identify the most appropriate measures to manage the remaining waste on the Project Site.

The following decommissioning strategies will be implemented for the Project:

- all mine roads will be rehabilitated, unless otherwise agreed with the subsequent landowner and in accordance with the EA;
- all water dams not required for long term water management will be decommissioned and removed, unless otherwise agreed with the subsequent landowner and in accordance with the EA;
- all major infrastructure, including the CHPP, will be decommissioned and removed offsite;
- concrete pads will be covered with benign waste rock or ripped and removed, then topsoiled and
  re-vegetated; and
- other facilities, including workshops and warehouses, will be decommissioned and removed, unless otherwise agreed with the subsequent landowner and in accordance with the EA.

BMA has prepared a Rehabilitation Management Plan in line with the *Mined Land Rehabilitation Policy* (DES, 2018). In accordance with the policy, land will be rehabilitated to achieve the following rehabilitation goals:

- safe to humans and wildlife;
- non-polluting and does not cause environmental harm;
- stable; and
- able to sustain an agreed post-mining land use.

BHP's *Queensland Coal Rehabilitation Completion Criteria* (BHP, 2018) outlines the completion criteria for meeting satisfactory rehabilitation for a number of post mining land uses. Post mining land uses may include:

- cattle grazing;
- dryland cropping;
- woodlands habitat;
- watercourses; and/or
- water storage.

The completion criteria set out objectives, indicators and criteria for achieving acceptable rehabilitation in the post mining land uses. The completion criteria consider goals of safety, stability, minimal pollution and the ability to sustain an agreed post mining land use.

The proposed post-mining land use will be an undulating landscape that could be used as grazing land, consistent with the surrounding pastoral land use that dominates the region. The exception to this is where remnant native bushland is disturbed. Where practicable, the post-mining land use for these areas is woodlands habitat as this is compatible with the pre-existing land use for biodiversity values. There may be instances in which a mix of native and non-native species will be implemented. Post-mining land uses for the Project will be confirmed prior to construction.

5. SIGNIFICANCE

This section summarises the key findings of Section 4 and evaluates their significance.

Significance evaluation of social impacts is complex, balancing:

- subjectivity: i.e. a Project effect which is a negative impact for some may be a benefit for others;
- scale: evaluation should ensure that changes which benefit a large number of people do not eclipse negative impacts in a local area;
- equity: management of impacts and benefits for vulnerable stakeholders require attention to ensure that disadvantage is not exacerbated; and
- sensitivity: large and resilient communities generally have the capacity to cope with change, but lack of a critical social resource (e.g. housing) can affect resilience.

The significance evaluation matrix shown in Table 60 was developed with reference to Queensland Treasury's risk management guidance[111], the IAIA's guidance on evaluating social impacts[112] and DSD's 2013 SIA guideline risk assessment matrix.[113]

Table 60: Significance assessment criteria

Likelihood	Consequence			
	Minor	**Moderate**	**Major**	**Critical**
A: Unlikely	A1 Low	A2 Medium	A3 High	A4 High
B: Possible	B1 Low	B2 Medium	B3 High	B4 Very high
C: Likely	C1 Medium	C2 High	C3 High	C4 Very high
D: Certain	D1 Medium	D2 High	D3 Very high	D4 Very high

Table 61 summarises social impacts and benefits and their significance. In the Phase column, 'C' denotes that the impact or benefit could occur during construction, 'O' denotes relevance to the operational period, and 'C/O' denotes relevance to both phases. In the 'Nature' column, '✓' denotes a positive impact or opportunity, and '✕' denotes a negative impact. Mitigation and enhancement strategies which address each significant impact and benefit are detailed in Section 6.

[111] Queensland Treasury. 2011.
[112] IAIA. 2015.
[113] DSD. 2013.

Table 61: Summary and significance

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
Community and Stakeholders						
Nearby landholders may experience occasional impacts to amenity as a result of noise or dust from the Project area	O	✘	Residents of five nearby homesteads	C1	Agreements with affected landholders	B1
Support for local towns' identity as mining towns	O	✓	Dysart, Moranbah and potentially Middlemount communities	D1	Recruitment strategy with a focus on Isaac LGA residents	D2
Positive contribution to community cohesion through increased long term mining employment and population increases	O	✓	IRC Dysart, Moranbah and potentially Middlemount communities	D1	BMA's Community Development partnerships and programs	D2
Potential for non-resident workforce to change social dynamics in local communities, particularly in the context of cumulative impacts	C/O	✘	IRC Dysart and Moranbah communities Community organisations	C2	Construction WAV provision BMA Workplace Conduct Policy BMA's Community Development partnerships and programs	B1
Surface disturbance of approximately 1,155 ha during the project's operations phase, and changes to landform as a result of subsidence	O	✘	Nearby landholders IRC	D2	Rehabilitation in accordance with legislative requirements	B1
Potential to strengthen population growth and community cohesion in Dysart, Moranbah and the Isaac LGA as a whole through direct and indirect employment	O	✓	Dysart, Moranbah and potentially Middlemount communities and businesses IRC Community organisations	C1	BMA's Community Development partnerships and programs BMA housing provision	C2

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
Employment						
Construction could offer up to 1,000 jobs by 2022, benefitting construction industry personnel from the local, regional and broader (Queensland) areas	C	✓	Construction employees in the Isaac, Mackay and other LGAs. Heavy and civil construction companies in the Isaac and Mackay LGAs	C2	Businesses and industry engagement and procurement strategies	D2
At full development (potentially by 2025), up to 500 operational personnel would be employed. Recruitment of local personnel will ensure that local community members benefit from the Project's employment and training opportunities	O	✓	Existing employed, underemployed and unemployed mining workers, and new recruits to mining Local young people	D2	Recruitment strategy Supporting settlement strategy BMA housing provision	D1
Contribution to competition for skilled labour within the Isaac LGA and MIW region	O	✘	IRC Government and community agencies Business and residents	C2	Recruitment strategy Training and workforce development strategies	B1
Increased long-term availability of mining employment in the Isaac LGA and contribution to employment diversification through increased underground mining opportunities	O	✓	Dysart, Moranbah and Middlemount workforce, communities and businesses	C1	Recruitment strategy Training and development strategy	D2
BMA's Indigenous participation goal of 5.75% Indigenous employment target by 2025 will see an increase in employment opportunity for Indigenous people	O	✓	Indigenous mining industry workers, jobseekers and families Training organisations Indigenous businesses	C1	Recruitment strategy Training and development strategy Indigenous Economic Empowerment Plan	C2
BMA's workforce diversity goal for a 50% female workforce overall by 2025 will see an increase in employment opportunity for local and other women	O	✓	Employees and families	C2	Recruitment strategy Training and development strategy	C3

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
Approximately 10 apprenticeships and training opportunities available, with local young people the primary recruitment pool	O	✓	Young people in Isaac LGA communities Training providers including CTEC	C2	Training and development strategy	C3
Population and housing						
Compared to the FTE population (NRW plus estimated residential population), an increase of approximately 2.5% on the estimated FTE population in Isaac LGA in 2023	C	✘	IRC Government and community agencies Dysart and Moranbah, communities	D2	WAV provision, including on site service provision BMA Workplace Conduct Policy BMA's Community Development partnerships and programs	C1
Requirement for accommodation of an estimated 900 – 1,000 WAV beds	C	–	IR and local residents WAV providers	D3	Provision of WAV for construction phase on the mining lease	B1
Resident population increase in the Isaac LGA in the order of 270 people supporting planned population growth	O	✓	Dysart, Moranbah and Middlemount workforce, communities and businesses	B1	BMA housing strategy BMA's Community Development partnerships and programs Engagement with IRC on shared value matters such as infrastructure development and community amenity	C1
An increase of 150 NRW on shift by 2025, which would represent an increase of 1.33% on the projected NRW population and contribute to demand for services and infrastructure	O	✘	IRC Government and community agencies Dysart and Moranbah communities	C1	BMA's Community Development partnerships and programs	B1
Contractors' housing requirements and population increases as a result of indirect employment may cause increases in rental housing costs but are likely to be offset by market stimulation	O	✘	IRC Government and community agencies Dysart and Moranbah communities	B2	WAV provision and requirement for contractors to stay in WAV if the rental market is tight i.e. les than 2.5% vacancy rate	B1

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
					Lease of surplus BMA housing to contractors	
An estimated 130 dwellings could be required to house new local residents, primarily in Dysart and Moranbah	O	✘	IRC and local residents Government and community agencies Dysart and Moranbah communities	B3	Provision of BMA-owned, subsidised housing to BMA personnel settling in the Isaac LGA Provision of access to BMA housing for contactors if shortfall identified	B1
Health and wellbeing						
An estimated 900 non-local workers at peak may translate to demand for approximately 0.08 of a GP and increased demands on hospital, emergency and mental health services	C	✘	IRC Government and community agencies Moranbah and Dysart Hospitals Dysart and Moranbah communities Queensland Health QPS, QAS and QFRS	D2	Health service provision in WAV EAP Consultation with stakeholders to identify collaborative responses including advocacy or partnerships to support recruitment of health services staff	C1
Increased demand for GPs in the order of up to 0.5 GP as the result of project-related population increases is likely, as well as increased demand for hospital and mental health services	O	✘		C2	Engagement with IRC, Queensland Health, QPS, QAS and QFRS to develop collaborative responses BMA's Community Development focus on health promotion	B1
Increase demand for Police, Ambulance and Fire and Rescue Services as a result of population increases and increased non-residential personnel numbers	O	✘		D2	Consultation with stakeholders to identify collaborative responses including advocacy or partnerships required to address project impacts	D1
New residents are likely to contribute to increased demand for childcare, in the order of five long day care places, and up to four extra out of school hours care places. Increased family support services	O	✘	Employees Childcare centres IRC	D1	Identify employees' childcare needs, and if necessary, collaborate with IRC, other mining companies and the DCCSDS to identify possible solutions.	C1

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
may also be required			DCCSDS MDSS and DCSG			
With a population increase of 270 people, there would be a demand for approximately four prep enrolments, 37 Year 1-10 enrolments, and up to seven Year 11-12 enrolments	O	✘	Department of Education Moranbah, Dysart and Middlemount schools	C2	Advice to Department of Education and Training, and local schools, on workforce ramp-up	B1
Population increase will increase demand for settlement and community support services	O	✘	IRC MDSS DGSG Government and community agencies Moranbah, Dysart and Middlemount communities DCCSDS	D2	BMA's Community Development partnerships and programs	D1
Increased demand for recreational and cultural services, with commensurate need for increases in volunteer resources, with some potential to increase volunteer resources through increasing the population	O	✘	IRC Community, recreational and cultural organisations	C2	BMA's Community Development focus on development of volunteer resources and support structures	C1
Potential to enhance the wellbeing of project personnel and families through long term, well paid employment, affordable housing and well-serviced communities	O	✓	Project personnel and families	D2	Not required	D2

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/ Enhancement	Residual Risk/benefit
Local business and industry						
Potential to contribute positively to local business through demand for local goods and services	C	✓	Businesses in Isaac, Central Highlands and Mackay LGAs	C1	Local Buying Program	C2
Long term opportunities for local, regional and Indigenous businesses to supply the Project	O	✓	Businesses in Isaac, Central Highlands and Mackay LGAs	D1	Local Buying Program Local and Indigenous Sourcing Strategy	D2
Project demands for personnel and supplies may exacerbate current skills shortages and contribute to a drain of labour from local businesses and services to the Project	O	✘	Businesses in Isaac, Central Highlands and Mackay LGAs	C2	C-Res business capacity building program Training and development programs	B1
Cumulative impacts						
Construction of more than one major project in a similar time frame is likely to strain social infrastructure (particularly health and emergency services) and may affect perceptions of community safety. If there is insufficient capacity to accommodate non-local personnel, housing impacts are likely	C	✘	IRC MDSS DGSG Moranbah, Dysart and Middlemount communities Office of Coordinator-General Queensland Health Queensland Police, QAS and QFRS DCCSDS Department of Housing and Public Works	B2	Support for IRC advocacy for Government resources for service provision to match total FTE population Advice to IRC, Queensland Government agencies and local health service providers regarding workforce ramp up, site arrangements and location Development of protocols with Queensland Police, QAS and QFRS Provision of housing and accommodation for BMA personnel C-Res business capacity building programs BMA community development partnerships and programs	B1
Increased demands on Council infrastructure, community services and health and emergency infrastructure are likely if multiple new coal mining operations commence operation in the Isaac LGA. Significant demands on local housing stocks are possible, with potential for displacement of local residents and key workers.	O	✘		B4		B2

6. SOCIAL IMPACT MANAGEMENT PLAN

This section details how BMA will work with local and regional stakeholders to mitigate social impacts and maximise opportunities identified in relation to the Project. This SIMP includes five sub- plans for:

- Community and Stakeholder Engagement;
- Workforce Management;
- Housing and Accommodation;
- Health and Community Wellbeing; and
- Local Business and Industry Content.

Each sub-plan includes:

- the purpose of the management plan, including social impacts and opportunities to be addressed;
- the desired outcomes;
- the measures designed to mitigate social impacts and enhance opportunities identified in the SIA; and
- an action plan, providing a practical basis for implementing each measure.

Section 7 provides a monitoring framework, including outcomes sought, stakeholder engagement in monitoring, how management of the impacts will be monitored and reported, and the timing and frequency of monitoring.

6.1 SIMP Coordination

BMA will coordinate and monitor delivery of the SIMP through an internal SIMP Coordination Team. The SIMP Coordination Team which will be convened upon approval of the Project to develop a SIMP implementation program and commence actions with longer lead times. The SIMP Coordination Team will include:

- Project Director;
- Construction Project Manager
- EPCM Project Director;
- Environment Adviser
- Human Resources Adviser
- Manager Corporate Affairs - Community;
- General Manager Operations; and
- General Manager Operations, Saraji Mine.

6.2 Implementation of management measures

BMA will maintain responsibility for implementing, monitoring and reporting on management measures detailed in the SIMP. Accountabilities for key actions are detailed in Table 62.

Table 62: SIMP implementation roles

Management Plan	Accountable	Key actions
SIMP (overall) - Project life	Project Director/ General Manager Operations	• Convene SIMP Coordination Team • Include relevant SIMP commitments and conditioned requirements in construction contracts • Lead BMA and contractor involvement in SIMP implementation • Lead engagement, cooperation and joint advocacy with IRC • Implement local infrastructure agreements with IRC and other relevant parties
Community and stakeholder engagement - construction and operation	Manager, Corporate Affairs - Community	• Maintain Project stakeholder register • Implement stakeholder engagement commitments • Coordinate and report on monitoring of SIMP delivery and effectiveness
Workforce management – construction	Principal Contractor	• Implement contractual agreements with BMA relating to SIMP commitments, including but not limited to: o workforce management o workforce health and wellbeing o accommodation for NRW o training and development o local and regional business involvement o Indigenous employment and business involvement o complaints management • Provide monthly reports on workforce numbers, workforce diversity workforce management, and complaints management to BMA • Provide quarterly reports to BMA on delivery of relevant SIMP commitments
Workforce management – operation	BMA – Operations Manager	• Implement SIMP commitments for: o workforce management o recruitment o choice and flexibility o Indigenous and female employment o training and development o workforce health and wellbeing
Housing and accommodation – construction	Principal Contractor	• Ensure availability of WAV beds for all NRW • Monitor and report on accommodation usage monthly to BMA, including WAV occupancy and any new rentals of local housing
Housing and accommodation –	Housing and Accommodation	• Utilise existing BMA housing portfolio for personnel who are new local residents

Management Plan	Accountable	Key actions
operation	Manager	• Ensure availability of WAV accommodation for NRW from within existing WAVs • Monitor housing uptake and occupancy rates • Report on any usage of non-BMA housing by Project personnel as part of SIMP reporting to OCG
Health and community wellbeing – construction	Principal Contractor	• Implement SIMP mitigation strategies relating to co-operation with police and emergency services • Implement health service mitigation strategies
	Manager, Corporate Affairs - Community	• Consult with Queensland Health and Dysart and Moranbah and Dysart GPs to confirm mitigation of potential demands on local health services during construction • Implement stakeholder engagement and partnerships • Implement community investment strategies • Identify scope and funding required for settlement program for operations with a suitable local provider
Health and community wellbeing – operation	Manager, Corporate Affairs - Community	• Engage with Queensland Health and Dysart and Moranbah GPs to identify and provide support for recruitment of additional GPs or other health staff, if stakeholders indicate this is required • Implement stakeholder engagement and partnerships • Implement community investment strategies • Facilitate funding for settlement services for operations
Local business and industry – construction and operation	C-Res Manager	• Manage Project interface with BMA's Local Buying Program • Monitor and report on the Project's local buying achievements as part of SIMP reporting to OCG

6.3 Community and Stakeholder Engagement

6.3.1 Purpose

The purpose of this sub-plan is to address the following impacts and opportunities identified by the SIA:

- strong interest in the Project from local residents, businesses and authorities;
- opportunity to work collaboratively to address emerging issues such as housing shortages or strains on social infrastructure; and
- opportunity to enhance Project benefits to local communities.

6.3.2 Desired outcomes

The desired outcomes from this Community and Stakeholder Engagement Management Plan are:

- new local personnel and family members are integrated to the community;
- local employment supports community identity;
- no impact of noise or dust on nearby landholdings' quality of life;
- personnel move from other LGAs to Dysart and potentially Moranbah; and
- NRW's behaviour is aligned with community standards.

6.3.3 Stakeholders

BMA maintains an established Stakeholder Register to ensure stakeholders and their interests are central to the business, and that feedback and complaints are recorded and actioned.

Table 63 identifies a range of stakeholders at local, regional and state level who are involved in ensuring positive social outcomes as a result of mining and resource activity in the region. Many of these stakeholders have informed the SIA and will be involved in implementation and monitoring of this SIMP.

Sections 6.3.4 and 6.3.5 detail the specific engagement strategies and measures that will be undertaken by BMA to implement the SIMP and achieve the desired outcomes for community and stakeholder engagement.

Table 63: SIMP Stakeholders

Stakeholder Group	Stakeholders
Queensland Government	Office of the Coordinator General Department of Environment and Science Department of State Development, Manufacturing, Infrastructure and Planning Queensland Health Department of Education and Training
Local Government	Isaac Regional Council
Landowners	Affected and adjacent landholders
Traditional owners	Barada Barna Aboriginal Corporation

Stakeholder Group	Stakeholders
Local community members and businesses	Local community members affected and/or interested in the Project Local and regional residents interested in Project employment Local businesses interested in supplying the Project Dysart Community Support Group (DCSG) Moranbah Traders Association BMA C-RES MDSS BBCCs
Social and health infrastructure providers / Government agencies	Dysart Hospital; Dysart Medical Centre; Dysart Community Support Group, Dysart Police Station; Dysart State High School; Dysart State School; Moranbah Ambulance; Moranbah and District Support Services; Moranbah District Mental Health Service; Moranbah Emergency and Long Term Accommodation; Moranbah East State School; Moranbah Fire Station; Moranbah Hospital; Moranbah Police; Moranbah State High School; Moranbah State School QFES - Mackay Country Command Hinterland Community Care Local childcare providers

6.3.4 Community and stakeholder engagement measures

BHP Community Development Approach

BHP Coal believes that the creation of social value is a precondition to shareholder value, and is undertaking a planning process to support this objective. This approach goes beyond social investment and encourages collective impact, local activation, empowerment and advocacy. Implementation of the social value framework will support joint advocacy with the IRC on shared priorities and will be enabled by deep two-way engagement.

The commitment to creating enduring social, environmental and economic value is outlined in BHP's Community Development Management Plans (CDMPs) which guide partnerships and shared value initiatives with its communities.

In FY18 BHP committed that by the end of FY2022, BHP's social investment will contribute to improved quality of life in its host communities and support achievement of the United Nations Sustainable Development Goals. This includes investing not less than 1% of pre-tax profits in meeting these objectives. In FY16 BHP invested over $60 million into community projects across Australia (BHP, 2017).

BHP monitors social baseline data regularly, and consults with local communities to ensure its community development programs remain targeted to the greatest needs and opportunities. The current CDMP (BHP, 2018) includes a clear focus on local employment, local procurement and social investment. Social investment priorities in the Bowen Basin for FY2019 include:

- health and wellbeing, with a focus on mental health;
- education and training, with a focus on literacy and numeracy, secondary education, VET and tertiary pathways;
- enhancing livelihoods through socio-economic development; and

- biodiversity and water, with a focus on conservation.

Key investment priorities for the business as a whole include:

- early years learning and primary school education;
- secondary school and Vocational Education and Training (VET) programs;
- tertiary education to develop leaders of the future, increase female participation and build the capacity of community organisations;
- Indigenous education across all levels to improve educational outcomes for Indigenous students;
- Indigenous advancement and partnerships to deliver programs that target key areas of Indigenous disadvantage in host communities; and
- partnerships with government agencies and specialist environmental groups to Identify key environmental assets and conservation priorities.

Table 64 provides an overview of current BMA initiatives and partnerships that focus on improving social outcomes in the SIA study area, many of which will continue and support the Project's engagement with local and regional stakeholders.

BMA acknowledges that expansion of its contributions to community programs, services and facilities, commensurate with expansion in its operations, will support the livability and attractiveness of local towns. BMA will consult with IRC and through its local community networks to identify and agree the priorities for community investment as part of refining and detailing the SIMP. This is anticipated to include support for upgrades to community facilities and service capacity in Dysart and potentially Moranbah, and support for the Dysart community to strengthen the town's liveability and opportunities for community participation.

Table 64: BMA Partnerships

Project	Partners	Timing	Catchment Community
Education and Training			
Curriculum Enhancement and Career Pathways Engagement with Central Highland VET network and the Dysart Trade Training Centre. School-based traineeships and apprenticeships. Skills development delivered through the Coalfields Training Excellence Centre (CTEC). Blackwater SHS program focusing on STEM with a community Science Night and NASA Tour key elements.	Moranbah, Dysart and Blackwater, State High Schools	Ongoing	Blackwater, Moranbah and Dysart
BMA Chair of Indigenous Engagement: a long-term partnership (since 2011) established to improve lifelong learning opportunities and increase education participation for young Indigenous students.	CQ University	2011 - Ongoing	Central Queensland
READ Collaboration: a program focused on achieving incremental progress against National Assessment Program – Literacy and Numeracy (NAPLAN) metrics for students in years three, five, seven and nine.	Department of Education and Training	2015-ongoing	Bowen Basin schools (4,000+ students)

Project	Partners	Timing	Catchment Community
Future careers on show for students: Support for Moranbah State High School's career expo, featuring more than 30 exhibitors from a range of industries, and including BMA partnership with the Australian Mathematical Sciences Institute (AMSI).	BMA and the Australian Mathematical Sciences Institute (AMSI)	2018	~800 High School Students – Moranbah, Dysart, Glenden and Nebo
Trades and Professional Training: partnership with the Queensland Minerals and Energy Academy (QMEA) to provide students in the Bowen Basin with programs that support science, technology, engineering and maths (STEM) education, and pathways into careers in the minerals and energy sector.	Queensland Minerals and Energy Academy	2006 - Ongoing	Bowen Basin
Scholarship Programs: BHP invests in scholarship programs Australia to encourage participation in higher education by students in its communities	CQ University Isaac LGA State High Schools	Ongoing	East Coast Australia
Support for the Queensland Minerals and Energy Academy (QMEA) to broaden students' and teachers' knowledge of the resources sector and provide a pathway into VET and STEM-related careers, with a strong focus on female and indigenous students	QMEA schools via Queensland Resources Council Queensland Government	Ongoing	Queensland
Community safety, health and wellbeing			
BMA's Connecting Communities Program engages community members by hosting networking events and encouraging connections between community groups.	Dysart Community Support Group	Ongoing	Isaac LGA communities
CQ Rescue Partnership: A long-term investment partnership to provide rapid response critical care services to local communities.	CQ Rescue and Capricorn Helicopter Rescue Service	Ongoing	Central Queensland Capricorn region
Queensland Music Festival partnership: a partnership that uses the power of music to build resilient communities. Strong focus on exposing regional communities to music and performance and build capacity in the creative arts	Queensland Music Festival	Ongoing	Queensland with a particular focus on Bowen Basin
Queensland Ruby League partnership: Strong focus on strong and resilient communities with a particular focus on mental health	Queensland Rugby League	2019 – 2021	Queensland

Communication

Regular communication channels that will be used and promoted by the Project post-approval include:

- a free call number, answered 24 hours / seven days per week;
- an community email account to ensure community members have access to the Project team; and
- a reply-paid address for written correspondence from the community.

These communication mechanisms will be promoted on all project correspondence and communication materials. Project information will also continue to be published online at https://www.bhp.com/environment/regulatory-information, and updated as the project develops.

Following Project approval, this site will be updated, or a new project information portal will be created, to publish project communications and monitoring information including:

- EPBC Act compliance reports;
- SIMP Review reports; and
- BMA's Feedback and Complaints Procedure, including a 24 hour toll-free complaints number.

BMA's Communities team will provide ongoing information regarding the Project's construction and operation within the local community. This will also involve regular participation in local projects, complaints management at the local level and ensuring effective lines of communication between the Project management team and the local community. The Project team will be trained in regard to information, consultation and complaints procedures and protocols.

Regular engagement

Post-approval, BMA will initiate the following regular engagement mechanisms to share information about the Project and agree the ongoing engagement processes to be implemented:

- consultation and communication with affected and adjacent landholders to identify and mitigate concerns;
- regular construction notices, published in local media and communicated through regular engagement with key stakeholders;
- regular briefing to IRC on the schedule, progress, potential impacts and mitigations for the Project, and identification of partnership opportunities to maximise social opportunities;
- consultation with BHP's community consultative committee;
- regular agency engagement (until Y2 operations phase or as agreed) with the Department of State Development, Manufacturing, Infrastructure and Planning, and the Department of Education Training and Employment, to identify synergies and potential partnerships which progress regional and state agendas for social and economic development; and
- provision and promotion of a complaints and feedback mechanism accessible to all local stakeholders.

Complaints resolution

As noted in the International Council on Mining and Metals good practice guideline for complaints management,[114] any large-scale project, even if managed to the highest standards, may cause local concerns. BMA believes that effective complaints management is integral to building communication, respect and trust between its operations and local communities. It also assists in detecting and addressing local concerns at an early stage.

Responsibility for receiving complaints, and coordinating the responses, rests with the BMA Communities team. However, responsibility for addressing and resolving complaints rests with the Project's relevant Manager during construction, and with the mine's General Manager during operations.

All personnel including contractors will be made aware of the existence and importance of the complaint's mechanism in their on-boarding program, and how to direct a complaint.

[114] International Council on Mining and Metals. 2009

The following avenues will be promoted to community members and registered stakeholders for their feedback, input and complaints:

- publicised email, phone and reply-paid addresses and included on the BHP website;
- in person to a community relations representative, or during a meeting with BMA employees;
- to a third party such as a government department (e.g. Department of Environment and Science), with links between BMA and departments to ensure that feedback is provided in a timely manner.

Upon receipt of a complaint, the responsible Manager will commence investigation into the cause of the complaint and where mitigation is required, take any reasonable actions required to address the complaint.

The intention is that a verbal response on the facts identified and progress with the investigation will be provided to the complainant within 48 business hours (unless the complainant agrees otherwise), and a detailed written response will be provided within ten business days of the receipt of the complaint.

Upon closing out a complaint, the stakeholder will be contacted by the relevant BMA representative to determine if they are satisfied with the resolution.

BMA will utilise its established internal complaints register to record and report on all complaints that may be received during the construction and operation of the project.

6.3.5 SIMP action plan: Community and Stakeholder Engagement

A number of the Project-specific mitigation strategies include consultation as a core component.

Prior to construction, the Project's stakeholder engagement strategy will be updated to ensure it continues to address interested and affected stakeholders and current social conditions, and includes stakeholder involvement in monitoring as detailed in Section 7.

To maintain an adaptive management approach between the submission of this assessment and the commencement of construction, the following engagement strategies will be employed (see Table 65).

Table 65: SIA Engagement Stakeholders and Engagement Strategies

Indicative Project phase	Strategies
12 months prior to construction	• Consult with IRC and relevant state agencies to identify existing initiatives, local priorities and regional planning outcomes to be recognised in the execution of the Project.
	• Consult with IRC and through BMA's local community networks to identify and agree the priorities for community investment, as part of refining and detailing the SIMP
	• Update the social baseline to ensure mitigation strategies can be monitored against current housing and employment conditions, and identify any further stakeholders to be involved.
	• Identify any new potential impacts and opportunities, and the relevant stakeholders with whom BMA will co-operate to address new impacts.
	• Update the Project's Community and Stakeholder Engagement Plan for construction.
	• Update affected landholders so they are aware of timing, mitigation strategies and forward communication plans.
6 months	• Review BHP's consultative committee membership and ensure stakeholder representation

Indicative Project phase	Strategies
prior to construction	from the Dysart community.
	• Convene the Project's SIMP Coordination Team to help coordinate engagement activities and long-lead SIMP actions.
	• Consult with the BBAC and local Indigenous community organisations to ensure recommended strategies for Indigenous engagement and employment are still appropriate.
	• Meet with Queensland Police, Ambulance, Fire and Rescue and Hospital representatives to advise of the workforce build up and traffic management plans, and develop co-operative responses to health and emergency services demand.
	• Provide information through BMA's Local Buying Program and local and regional business networks, advising of contracting and supply opportunities.
1 month prior to construction	• Update Dysart and Moranbah BBCCs on Project pre-construction, construction and SIMP monitoring program.
	• Provide an update to IRC, Health and Emergency Services, and the BBCCs on the commencement of construction, traffic management and communication mechanisms.
	• Establish SIMP monitoring plan and assign accountabilities.
During construction	• Meet regularly with Isaac Regional Council and the BBCCs to provide update and monitor mitigations.
	• Provide regular community updates on Project construction and environmental management.
	• Maintain a complaints and feedback mechanism commensurate with BMA practice.
	• Communicate with the Queensland Police Service (frequency as agreed) regarding traffic management, workforce numbers and emergency response procedures.
	• Provide information to local and regional businesses regarding the commencement of operations, and new supply and service opportunities arising.
Three months prior to completion of construction	• Advise IRC, BBCC, and State Agencies of the upcoming commissioning.
	• Engage stakeholders in review of social conditions and the effectiveness of mitigation strategies.
	• Identify new or amended mitigation strategies to manage the social impacts and opportunities of the operation.
	• Update community and stakeholder engagement plan for operations.
During operation	• Ongoing engagement led by BMA Communities team.
	• Regular meetings with DSD and DETE to maintain alignment with government policy directions.
	• Communication with Council and the BBCC to advise of SIMP strategies relevant to social conditions and community life during operations.
	• Maintain complaints and feedback mechanisms throughout the life of Project activities.

6.4 Workforce Management

6.4.1 Purpose

The purpose of this sub-plan is to address the following impacts and opportunities identified by the SIA.

Construction

Social impacts and benefits in the construction that will be addressed by the Workforce Management Plan include:

- local access to Project jobs;
- increased competition for skilled labour;
- participation of local, regional and Indigenous businesses in Project construction; and
- potential for temporary change in Dysart's character with increased non-local workers accessing local services, shops and venues.

Operation

During its operation, the Project is expected to contribute to:

- increased long-term availability employment and training options in the Isaac LGA Central Highlands LGA and the MIW region;
- increased employment equity for women, Indigenous people and young people;
- increased competition for the recruitment of skilled personnel;
- local apprenticeship and training opportunities;
- opportunities for increased workforce-community participation;
- opportunity for skills diversification and development for BMA employees; and
- enhance workforce health and wellbeing.

6.4.2 Desired outcomes

The desired outcomes of this sub-plan are:

- participation of personnel from the Isaac LGA, Central Queensland and other Queensland regions in the Project workforce;
- recruitment of local personnel will ensure that local community members benefit from the Project's employment and training opportunities;
- an appropriately and competitively skilled workforce which includes local residents, young people, women and Indigenous people;
- at least 5.75% of the Project's workforce are Indigenous people by 2025;
- the Project makes a strong contribution to BHP's target of a 50% female workforce by 2025;
- apprenticeships and training opportunities are available to local people;
- the Project has a heathy engaged workforce, and families are engaged in the local community; and
- BHP contributes to labour force capacity building in the Isaac LGA.

6.4.3 Stakeholders

Table 66 identifies the key stakeholders BMA will engage during implementation of its Workforce Management Plan. Further detail on each management measure is provided in Section 6.4.4.

Table 66: Workforce Management Plan Stakeholders

SIMP Measures	Stakeholders
Recruitment and settlement	Principal and Major Contractors (construction) BMA Human Resources (operation) DCSG and MDSS
Employment and training	Construction Skills Queensland Queensland Department of Education and Training Moranbah CTEC Hinterland Community Care Department of Education CTEC
Community and workforce cohesion	Accommodation Village Management Contractor DCSG MDSS BBAC
Workforce health and wellbeing	Principal and Major Contractors (construction) BMA Human Resources (operation) EAP Provider Accommodation Village Management Contractor Dysart Hospital and Medical Centre Dysart Recreation Centre DCSG Mackay District HHS

6.4.4 SIMP measures

Recruitment

BMA is committed to ensuring that the number of Isaac LGA residents (existing and in-migrating) employed by the Project is maximised. As detailed in Section 4.2.3, BMA's recruitment strategy for operations will include:

- using local networks and BMA partners to advertise Project employment opportunities to Isaac LGA residents at an early stage of the recruitment process;
- including a statement in all job advertisements that Isaac LGA residents are strongly encouraged to apply in the Project's job advertisements.
- identifying interest in flexible work options and seeking to provide options which maximise local participation in Project employment;

- provide job applicants with access to an on-line information pack including a profile of local communities to support 'new local' employees to understand the amenity, services and housing options on offer; and
- identify new personnel's housing needs and facilitate provision of housing for personnel who wish to move to Moranbah or Dysart.
- working towards the BHP female employment goal of 50% and a 5.75% indigenous employment goal by 2025;
- supporting personnel that are hired outside a safe commuting distance to settle permanently in nearby local towns, primarily through offering the provision of subsided accommodation in Dysart and associated settlement services (see below); and
- reporting on the number of existing local personnel and the number of personnel settling locally to take up employment to IRC, QPS, DET and DSDMIP on an annual basis for the first three years of operation.

Training and development

BMA's current training and development strategies include:

- school and industry-based training partnerships across the Bowen Basin;
- structured training through traineeships and apprenticeships; and
- strategies to increase Indigenous people's employment opportunities in BMA operations.

BMA is also facilitating training and trade qualifications for local young people through its support for the Coalfields Technical Centre of Excellence (CTEC) in Moranbah.

As part of its commitment to workplace diversity and inclusion, BMA will also collaborate with Hinterland Community Care in Dysart and MDSS in Moranbah to identify and support programs which develop employment pathways for local people with disability.

BMA will assess skills availability for the construction and operational phases, six months prior to construction and one year prior to operations, to enable specific training and recruitment strategies to be established in time to resource the Project.

To manage potential impacts and facilitate opportunities for local training and employment during the Project's construction phase, BMA will require its Principal contractor to:

- coordinate across construction contractors to manage the demand for tradespeople over the course of construction; and
- consider liaising with Construction Skills Queensland and the Department of Education and Training to align supply strategies with current policy objectives and initiatives.

For operations, BMA will co-ordinate direct employment of apprentices and trainees. Training and development strategies for the Project's workforce will include:

- provision of up to ten apprenticeships by 2025 and maintaining this commitment throughout the Project life;
- in-service training and 'back to work' opportunities for injured workers will also support workforce development; and
- engagement of local and regional training organisations to support increased training and capacity development initiatives.

BMA's training supply strategy will include a focus on:

- capacity development of training organisations that support mining and related service industries;
- increased training opportunities for young people, women, Indigenous people and people with disability in the Isaac LGA and the MIW region;
- co-operation with DET training initiatives which address shortages in the mining and mining services industry; and
- lifelong learning and skill development programs that support workforce and employment diversity, including 'back-to-work' training support.

Prior to construction, BMA will engage with the Department of Education and Training and registered training organisations to align BMA's training supply strategies with current policy objectives and initiatives.

Community and workforce integration

BMA strategies to support community cohesion and workforce integration in the Isaac LGA comprise a comprehensive range of supporting partnerships including:

- DCSG – Dysart Connecting Communities Program;
- Dysart State High School – Building Transition for a Successful Future;
- READ Collaboration – covers all Dysart and Moranbah State Schools;
- Moranbah State High School – Streamlining Skills for Tomorrow's Future Today; and
- QMEA Partnership – Resource industry skills development camps and programs.
- Apprenticeships and Traineeships - active local recruitment for vacancies in BMA operations.

BMA will also either directly resource settlement support services (through its internal teams) or fund the DCSG to provide settlement services. BMA's support for settlement of new local residents associated with the Project will include:

- coordinating welcome events and welcome information packs for new residents;
- providing information about community, education, recreation, arts and culture and health services;
- linking new residents to community networks and volunteering opportunities;
- providing emotional and practical support for families as they settle in; and
- supporting the facilitation of a diverse range of local events, activities and information resources such as the local publication, the Dysart Diary.

Settlement services will be provided for a three year period commencing three months prior to the commencement of Project operations.

BMA will manage potential impacts on community identity and cohesion related to increased numbers of non-local personnel through a combination of BMA-wide strategies and Project-specific strategies as outlined below.

Strategies to enhance community and workforce cohesion identified by this SIA are as follows.

Respect for local values

- Provide induction training and a welcome pack for Project workers emphasising expected standards of behaviour in local towns, respect for local values and promoting local and regional attractions and activities;
- Develop and deliver Aboriginal and Torres Strait Islander cultural awareness and competency training, in consultation with Barada Barna people, to Project employees; and
- Provide information to the local community about BMA's expected standards of behaviour, access to its complaints mechanism, responses to reported incidences of anti-social workforce behaviour.

Workplace Conduct Policy

- During construction, require compliance with the Principal Contractor's 'Work Rules' (outlining expectations of behaviour and disciplinary action for non-compliance); and
- For operations, BMA's Workplace Conduct Policy will apply. Workers demonstrating behaviour that does not comply with the company requirements will face disciplinary action in line with the terms of their employment. Workers staying in WAVs will also be bound by the facilities' Codes of Conduct, with withdrawal of accommodation the result of non-compliance.

Workforce health and wellbeing

BMA is committed to providing workplaces which support physical and mental health. Specific strategies that will be employed by the Project to embed a workforce culture that promotes holistic health and wellbeing include:

- implementing the 'BHP Our Requirements' documents that are currently in use at all BMA operations
- contracting an EAP provider to provide proactive support for mental health and family issues, and to support NRW to manage the pressures of the commuting lifestyle;
- providing a range of on-site facilities and services to meet the health and recreational needs of construction and (as required) non-local operational personnel;
- providing or facilitating workers' access to local health and recreational services to reduce demand for services, and support workforce-community integration;
- establishing a project in partnership with health agencies to develop personnel's skills to identify and respond to mental ill-health in the workplace, including staff awareness, referral pathways between the workplace and health care providers, and engendering a culture that supports mental wellbeing;
- promoting use of the Queensland Government's 13 HEALTH (13 43 25 84) confidential phone service which provides health advice, and will increase workforce awareness of domestic and family violence matters, and how to seek help at the worksite, through the EAP or through community services;
- consulting with Mackay HHS regarding the development of workforce health and wellbeing strategies;
- Supporting mental health and wellbeing programs through social investment wherever possible;
- promoting recovery through return to work after illness or injury; and
- cultural mentoring support will be made available to all Indigenous employees working on-site, where required, and specific induction, training and support programs will be developed to support migrant workers if required.

Fatigue management

During construction:

- BMA will require its Principal construction and major contractors to demonstrate an excellent health and safety record, detail their workforce management procedures (including offsite driving) to minimise risks to personnel, and detail how they will promote a healthy workplace;
- BMA will promote its guidelines to workers which outline acceptable safe journey management practices and discourage the use of private transport by workers; and
- BMA's construction contractors will employ fatigue and journey management policies which are consistent with BMA's requirements. This will include rest days for construction workers to maintain sleep levels and attend to health and fitness.

During operation:

- BMA will implement a training approach which educates managers, supervisors and workers in fatigue management, including how to recognise the effects of fatigue, the influences of a healthy lifestyle and non-work activities, the effects of medical conditions, sleep disorders and drugs and alcohol, personal measures to manage fatigue, and how to access the EAP;
- BMA will maintain a standard roster system which can only be varied through risk assessment and authorised sign-off, and will monitoring employees and contractors shifts to ensure fatigue management guidelines are met; and
- BMA's construction and non-local operational personnel will be accommodated in ensuite rooms with light, noise and temperature control, and will have clear separation of crews on night and day shift.

Journey management

BMA will promote use of a contracted bus transport solution for workers to and from the WAV to work sites, as well as to and from the Moranbah Airport.

6.4.5 SIMP action plan: Workforce Management

Table 67 outlines the key actions to be implemented by BMA, addressing the impacts and opportunities identified by this SIA and the desired outcomes identified in Section 6.4.2.

Table 67: SIMP Action Plan: Workforce Management

Indicative Project phase	Management Strategies
12 months prior to construction	• BMA engage with the Department of Education and Training and RTOs to align BMA's training supply strategies with current policy objectives and initiatives.
Six months prior to construction	• BMA and its Principal Contractor will assess construction skills availability and liaise with Construction Skills Queensland and the Department of Education and Training to inform specific training and recruitment strategies. • BMA's Principal contractor will coordinate across construction contractors to manage the demand for tradespeople over the course of construction.
	• Provide information through BMA's local and regional business networks, including BMA's Local Buying Program, advising of contracting and supply opportunities. • Convene local briefing sessions in Dysart, Moranbah and Middlemount to increase awareness of the project opportunities and facilitate registrations for further information. • Provide regular advanced notification on the Project construction schedule to local and regional business stakeholders.

Indicative Project phase	Management Strategies
	• Consult with specialist village management staff, IRC, Dysart Hospital and Medical Centre and Dysart Recreation Centre to develop strategies that facilitate manageable workforce demand on local health and recreation services. • Develop workforce induction pack to emphasise Respect for Local Values and Contractor and Village Codes of Conduct.
1 month prior to construction	• Roll out workforce induction program
	• Promote workforce journey and fatigue management requirements of all personnel and contractors.
During construction	• BMA will continue to implement apprenticeship commitments. • 12 months prior to operations, BMA will assess skills availability in consultation with Department of Education and Training and local and regional training organisations develop specific training and recruitment strategies.
	• Scope partnership with local health agencies and community services to develop Project personnel skills in the identification of mental ill-health in the workplace and appropriate response strategies.
Prior to operations	• Implement recruitment strategy as outlined. • Recruitment process will be promoted locally through BBCCs, BBAC, local training providers and community networks and social media. • Initiate collection of personnel's originating postcode and provide advice to stakeholders as identified.
During operation	• Implement recruitment strategy as outlined. • BMA will continue to implement apprenticeship commitments. • BMA will implement in-service training and 'back to work' opportunities for injured workers will also support workforce development. • Continue engagement of local and regional training organisations to support increased training and capacity development initiatives.
	Implement strategies as outlined: • Recruitment • Training and development • Community and workforce integration • Respect for local values • Workplace Conduct Policy • Workforce health and wellbeing • Fatigue management
	• Implement on-site workforce wellbeing programs that are aligned with community-based health, wellbeing and integration initiatives.

6.5 Housing and Accommodation

6.5.1 Purpose

The purpose of this sub-plan is to ensure housing and accommodation are available to all Project personnel, avoiding impacts on local housing availability.

6.5.2 Desired outcomes

The desired outcomes of this sub-plan are that:

- all Project personnel who chose to move to Dysart are provided with housing, with potential for housing to also be available in Moranbah subject to the needs of other BMA mines situated closer to Moranbah;

- quality WAV accommodation is available for all NRW; and
- no increase in the number of people seeking social housing is attributable to housing requirements of Project personnel (employees and contractors).

6.5.3 Stakeholders

Table 68 identifies the key stakeholders BMA will engage during implementation of its Housing and Accommodation sub-plan.

Table 68: Housing and Accommodation Management Plan Stakeholders

SIMP Measures	Stakeholders
Housing and Accommodation Management	Principal and Major Contractors (construction) BMA Human Resources (operation) Isaac Regional Council Accommodation Village Management Contractor Queensland Police Service, Fire and Rescue and Ambulance Services (procedural development – AVMP) Dysart Community Support Group (Dysart Settlement Program) MDSS (Community Connectedness and Support Services)

6.5.4 SIMP measures

Construction accommodation

As described at Section 4.3, the Project includes an on-site WAV to accommodate non-local construction personnel. This strategy will:

- discourage use of local housing by contractors and avoid inflation of rental costs;
- mitigate the potential for housing choice limitations for permanent residents;
- limit travel time to and from site and associated demand on local roads; and
- provide access to health, recreation and support services within the WAV, which will reduce demands on local services.

BMA will engage a specialist village management contractor to operate the WAV. This contractor will provide employees whose responsibility is to ensure workers have access to recreation options, transport to access essentials in town, and health and well-being programs.

Prior to construction, BMA will require its construction contractor to provide a draft Accommodation Village Management Plan (AVMP) that will inform the management of the construction WAV. The AVMP will be finalised in consultation with the specialist accommodation provider and key stakeholders within the first three months of village's operation, and will include:

- workforce wellbeing and facility provision;
- engagement with local services including Queensland Police Service, Fire and Rescue and Ambulance Services;
- management of behaviour in the WAVs;
- the complaints management procedure.

On-site health facilities and service provision will include:

- access to a first aid clinic, paramedic and emergency services staff, trauma kits, defibrillators and drug and alcohol testing facilities;
- gyms, outdoor recreation space, sporting field and sports equipment, social meeting places and barbecue facilities;
- EAP for counselling and emotional health issues;
- regular health promotion programs such as physical activity programs, weight management, reduced smoking and alcohol consumption;
- health monitoring programs such as skin checks and blood pressure testing, programs; and
- nutrition and education programs delivered through the Villages' dining facilities.

Physical infrastructure provided within the village to manage health and avoid impacts on local infrastructure includes waste management and recycling facilities, bus parking and transit facility, water and energy infrastructure, a sewerage treatment plant, as well as roads and paths.

Responsible service of alcohol will be practiced in the licensed village facility under management of the specialist WAV management contractor.

Access to the internet and mobile phone services to maintain daily connection with family members and friends will be provided within the WAV.

Operations

BMA maintains a portfolio of dwellings in Dysart and Moranbah to accommodate locally based members of its workforce. This portfolio will be utilised to facilitate the relocation of Project personnel who choose to move to Dysart or Moranbah. There are an estimated 190 unused existing dwellings in Dysart that can be utilised for this purpose. This fluctuates slightly from month to month but there is no currently foreseeable reason to consider that availability will materially change in coming years.

Subject to the BHP workforce's housing needs, BHP could make surplus stock available to local businesses and services, and will explore this opportunity through consultation with the Dysart Business Group and the Moranbah Traders Group.

BMA will also ensure that a sufficient number of WAV beds is secured within existing WAVs in the Isaac LGA to accommodate all non-local personnel. There is currently sufficient WAV capacity in the region to accommodate the expected commuting workforce as demonstrated by the analysis in Section 4.3.

Should this situation change, and insufficient WAV beds are available, BHP would consider reverting to a new site-based WAV, if the justification at the time is satisfactory to the Office of the Coordinator-General in consultation with the IRC.

6.5.5 SIMP action plan: Housing and Accommodation Management

The Project's action plan for housing and accommodation management is outlined in Table 69, based on the measures described above.

Table 69: SIMP Action Plan: Housing and Accommodation Management

Indicative project phase	Management Strategies
12 months prior to construction	• BMA will ensure construction WAV design includes adequate health and recreation facilities to meet the needs of construction and operational personnel
Six months prior to construction	• BMA will engage a specialist village management contractor and agree terms of Accommodation Village Management
	• BMA will require its construction contractors to develop an Accommodation Village Management Plan for the construction WAV
	• BMA will engage with DCSG and MDSS to align workforce programs with community-based health, wellbeing and integration programs
	• BMA will consult with the Dysart Business Group and the Moranbah Traders Group regarding opportunities for use of surplus BHP housing
During construction	• Construction village will be managed by a specialist contractor in accordance with an agreed Accommodation Village Management
	• BMA will work with DCSG and MDSS to develop settlement programs for new local operational personnel.
	• BMA will define the terms of the EAP required to support the Project workforce during operations.
12 months prior to operation	• Assess local and regional workforce availability and plan for provision of housing for operational employees • Initiate housing maintenance and upgrade program to prepare housing in Dysart for personnel and families • In liaison with IRC, and dependent on the intervening development of new housing stock, identify the need for additional housing development to mitigate the Project's direct impacts (e.g. employees and contractors) on local housing availability
	• In consultation with IRC, identify the availability of workforce accommodation in and near Moranbah and Dysart • Secure accommodation beds for all NRW • Provide or engage with Dysart Community Support Group to provide a settlement program including Community Settlement Officer for new residents for Years 1-3 of operation
During operation	• Provide subsidised company housing in Dysart, and potentially in Moranbah as available.
	• Fund and monitor effectiveness of the settlement program.

6.6 Health and Community Wellbeing

6.6.1 Purpose

The purpose of this sub-plan is to address the following impacts and opportunities identified by the SIA.

Construction

The Project's use of an on-site WAV during construction is expected to provide access to health, recreation and support services within the WAV, which will reduce demands on local services. However, the construction phase may still have the following temporary impacts on social conditions:

- increased use of local businesses and venues in Dysart;
- increased demand for local GP and hospital services; and
- demand on emergency services as part of on-site incident response and management, wide load supervision, and possibly for callouts to the construction WAV.

Operations

During operations, the Project is expected to:

- have a positive impact on local population stability and community resources;
- increase demand and competition for local access to health (GP, hospital and mental health) and emergency services; and
- increased demand for settlement and recreation services, school enrolments and childcare services.

6.6.2 Desired outcomes

Through effective management of the impacts and opportunities identified in Section 4.4, the Project's Health and Community Wellbeing Plan is expected to achieve the following outcomes:

- provision of access to GP services for NRW, avoiding impact on residents' access;
- any need for supplementation of GP services in Dysart is identified and addressed in collaboration with stakeholders;
- QPS, QAS and QFES able to plan for increases in services to address Project-induced population increases;
- local childcare services are supported in line with Project-induced demand;
- Department of Education has sufficient and timely information to plan for increased enrolments; and
- local community services and organisations are supported to increase their capacity and increase the attractiveness of local towns.

6.6.3 Stakeholders

Table 70 identifies the key stakeholders BMA will engage during implementation of this sub- plan. Further detail on each management measure is provided in Section 6.6.4.

Table 70: Health and Community Wellbeing Stakeholders

SIMP Measures	Stakeholders
Cooperation with Police and Emergency Services	Principal and Major Contractors (construction) BMA (operation) Isaac Regional Council Queensland Police Services Queensland Ambulance Services Queensland Fire and Emergency Services Mackay Hospital and Health Service (with specific input from Dysart and Moranbah Hospitals).
Health mitigation	Principal and Major Contractors (construction) BMA (operation) Isaac Regional Council Dysart Medical Centre Moranbah and District Mental Health Service Mackay Hospital and Health Service (with specific input from Dysart and Moranbah Hospitals). North Queensland Primary Health Network (PHN)
Childcare and education	Lady Gowrie Day Care Centre (Dysart) Department of Education
Local infrastructure agreements	BMA (operation) Isaac Regional Council
Community investment and development	Local and regional community service organisations (Dysart Community Support Group, Moranbah and District Support Services) Isaac LGA communities

6.6.4 SIMP measures

Childcare and Education

The Project's population increases (and therefore demands for childcare and school enrolments) will primarily occur in Dysart. The Lady Gowrie Day Care Centre in Dysart has significant capacity to accommodate increased demand, with 35 places currently occupied in a 75 place centre. BMA would assist the Lady Gowrie Day Care Centre to increase its service delivery capacity by:

- advising the Lady Gowrie Centre of the anticipated number of personnel who would settle in Dysart;
- promoting the potential availability of employment for qualified educators through employee networks for advice to partners; and
- assuming Project-related demand for childcare is established through consultation with Project personnel and the Lady Gowrie Day Care Centre, providing financial support for the training of local residents to be educators.

BMA will also consult with the Lady Gowrie Day Care Centre and the DCSG to identify the need for other childcare services such as family daycare options and out of school hours care. If collaborative monitoring of Project-related demand establishes that additional childcare places are required, BMA will work with Lady Gowrie Day Care Centre, the DCSG, IRC and the Department of Communities to investigate and support expanded services.

BMA will consult with personnel as they are on boarded to determine the number of school age children who would require enrolments in local schools, and advise the Department of Education of anticipated enrolment numbers in October and May during Years 1-3 of operation.

Cooperation with Police and Emergency Services

The Emergency Management Procedure notes that all personnel will work co-operatively with Police, Fire and Ambulance services, and do as instructed by them if safe to do so. The plan includes reference to the responsibilities of local services, noting:

- Queensland Police Service is responsible for the overall coordination of the management of an incident (and later for investigation in relation to potential criminal issues), and for public safety matters including wide-load supervision;
- Queensland Ambulance Service is responsible for directing the medical aspects of casualty extrication and transportation to an appropriate care facility; and
- Queensland Fire and Emergency Service is responsible for off-lease management of fires, hazardous material management and rescue of casualties. While QFES jurisdiction does not apply to mine sites, QFES welcomes an opportunity to work in cooperation with mine site personnel.

As soon as practicable after the start of construction, BMA or its Principal Contractor will meet with QPS, QFES, and QAS to:

- provide on-site orientation as well as a site map to QPS, QAS and QFES members, providing overview of the Project site, its access roads, fences, security points, chemical storage and use areas, and emergency management facilities and helipad site;
- provide the QPS, QFES and QAS with a briefing on:
    - construction schedule and activities;
    - rosters, and scheduled fatigue management days;
    - village ‘rules of conduct’ and ‘work rules’;
    - initiatives to integrate workers with residents and local values; and
    - the complaints procedure;
- exchange contact details for Officers in Charge and key Project and site personnel; and
- discuss and agree a locally negotiated protocol with QPS for incidents.

Throughout operations, Project strategies will include:

- providing advice on the timing of workforce ramp ups or wind downs, fatigue management arrangements, and events which may disrupt traffic; and
- identify potential for shared recreational events (e.g. after training exercises, or through sport) which would develop relationships between mine employees and contractors, and local service personnel.

Engagement during operations will be reviewed prior to commencement and addressed in the next version of this SIMP.

Health services

BMA is committed to mitigating the impacts of NRW on local health services. BMA's on-site WAV for construction will include on-site services and facilities to enhance workers' health and reduce impacts on local services.

To minimise non-local employees' demands on local services, the workforce on-boarding process will also ensure that all non-local employees and contractors understand:

- routine matters and existing health issues should be addressed before they commence their rosters;
- where relevant, prescription drugs, prescriptions and records of health issues should be brought to site for every roster;
- on site health staff's assistance can be sought in relation to health concerns; and
- their supervisor or manager should be made aware of any health issues that are hampering their ability to undertake usual duties.

Twelve months prior to construction, BMA will consult with Dysart and Moranbah primary health service providers to determine an appropriate mitigation to potential demands on local GP services during construction. Subject to this consultation, an agreement with a GP service may be required to provide workplace health services e.g. Coal Board medicals, immunisation, health promotion programs, and to facilitate access to a GP for employees living in WAVs.

BMA will also employ staff with first aid or paramedic qualifications to manage minor health issues on site and deliver health and wellbeing programs focused on physical and mental health.

BMA will monitor the level of GP provision in Dysart in consultation with IRC and the North Queensland Primary Health Network (PHN) and collaborate with IRC, the PHN and Queensland Health to facilitate an increase in the supply of local GPs if analysis indicates that there is s shortage of GPs that would be exacerbated by Project-related demands. BHP's previous strategies in this regard have included participation in and support for recruitment initiatives, in partnership with Queensland Health and local GPs.

Local infrastructure agreements

BMA's agreements with IRC address the impacts of its operations on local infrastructure, including:

- contributions to road maintenance, as outlined in the Transport and Traffic Assessment;
- contributions to the LGA's water supply, as per BMA's agreements with IRC; and
- support for the ongoing operations of the BMA-owned Moranbah Airport.

6.6.5 SIMP action plan: Health and Community Wellbeing

Table 71 outlines the key actions to be implemented by BMA address the impacts and opportunities identified by this SIA and achieve the desired outcomes identified in Section 6.6.2.

Table 71: SIMP Action Plan: Health and Community Wellbeing

Indicative Project phase	Management Strategies
12 months prior to construction	***Local infrastructure agreements*** • Regular (quarterly) liaison with Isaac Regional Council regarding SIMP strategies including local infrastructure contributions and other potential projects.
	Health mitigation strategies • BMA will consult with Dysart GP/s and Hospital regarding health service capacity and potential contract for workplace health services • In collaboration with IRC, BMA will monitor GP numbers and the ratio of GPs to local populations, including non-local workers in the Isaac LGA, and if a shortage is indicated, work with Queensland Health and IRC to identify and implement strategies which will attract and retain additional GPs • Collaboration with North Queensland PHN to identify and respond to increased demand for GP services
Six months prior to construction	***Cooperation with police and emergency services*** • Meet with Queensland Police, Ambulance, Fire and Emergency Services and Hospital representatives to advise of the workforce build up and WAV and traffic management plans. • Develop co-operative responses to health and emergency service demand, including consultation on the Project's Emergency Management Plan. • If requested by IRC, support advocacy for increased Government resources for health, police, Ambulance and fire and emergency services
	Health mitigation strategies • BMA and the Principal Contractor will confirm health service provision requirements for the construction WAV and contract appropriate services
	Community investment and development • Consult Dysart Community Support Group and Moranbah and District Support Services on the scope of community-based initiatives and opportunity for alignment with workforce health and wellbeing programs.
During construction	***Cooperation with police and emergency services*** • Provide on-site orientation as well as a site map to QPS, QAS and QFES members. • BMA will provide regular advice to police, health and emergency service stakeholders on workforce profile, fatigue and traffic management procedures.
Six months prior to operation	***Cooperation with police and emergency services*** • BMA will update the Project's Emergency Management Plan for operations in consultation with key stakeholders
	Health mitigation strategies • BMA to formalise workforce accommodation solution for operations and determine associated health mitigation strategies in consultation with local health and hospital services • Consult with IRC, Queensland Health and local GPs regarding GP capacity, and if a shortage is evident, support collaborative initiatives to increase local access to GPs
	Childcare and Education services • Collaborate with Lady Gowrie Day Care Centre and IRC to identify and respond to any need to supplement childcare services in Dysart in response to Project-related demands.
During operation	***Cooperation with police and emergency services*** • BMA will provide regular advice to police, health and emergency service stakeholders on workforce profile, fatigue and traffic management procedures.

6.7 Local Business and Industry

6.7.1 Purpose

The purpose of the Project's Local Business and Industry sub-plan is to address the following impacts and opportunities identified by the SIA.

Construction

Social impacts and benefits in the construction that will be addressed by the Local Business and Industry Plan include:

- potential exacerbation of current skill shortages and contribution to labour drain from local businesses;
- participation of local, regional and Indigenous businesses in Project construction; and
- opportunities to enhance the capacity of local businesses to service beyond the Project.

Operations

Social impacts and benefits during the Project's operation that will be addressed by the Local Business and Industry Plan include:

- opportunities for local, regional and Indigenous businesses to supply the Project's operations phase;
- opportunity for greater diversification of local industry associated with underground mining;
- participation of local, regional and Indigenous businesses in Project construction; and
- opportunities to enhance the capacity of local businesses to service beyond the Project.

6.7.2 Desired outcomes

The Project's Local Business and Industry Plan is expected to achieve:

- local (Isaac LGA) and regional (Central Highlands and Mackay LGAs) business participation in supply chain for construction;
- increased business vitality and sustainability in the Isaac and adjacent LGAs; and
- offset Project labour drains through skills training and business development initiatives.

6.7.3 Stakeholders

Table 72 identifies the key stakeholders BMA will engage during implementation of its Local Business and Industry Plan. Further detail on each management measure is provided in Section 6 7.4.

Table 72: Local Business and Industry Plan Stakeholders

SIMP Measures	Stakeholders
Enhancing local business capacity	Principal and Major Contractors (construction) Queensland Resources Council (Code of Practice for Local Content 2013) Queensland Department of State Development, Manufacturing, Infrastructure and Planning (ASCOP program) IRC BMA C-RES (supplier market analysis) Local businesses interested in supplying the Project Dysart Community Support Group Moranbah Traders Association Queensland Industry Capability Network (ICN) Resource Industry Network (RIN) Indigenous Business Australia (IBA) Barada Barna Aboriginal Corporation (BBAC) Greater Whitsunday Alliance (GW3)
Aboriginal and Torres Strait Islander Economic Empowerment Plan	Barada Barna Aboriginal Corporation (BBAC) Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP) Local Indigenous service providers and organisations Black Business Finder Indigenous Business Australia (IBA)

6.7.4 SIMP measures

BMA is committed to ensuring local businesses grow alongside BMA's development projects and long-term operations. BMA's commitment is reflected within two key SIMP strategies for the Project, as described below.

Enhancing local business capacity

BMA's strategy to enhance local business capacity will focus on working with appropriate agencies on strategies that address skill shortage areas, maximising local access to Project supply opportunities, and supporting diversification and long-term competitiveness of local business and industry.

This will involve BMA's engagement with leading industry and agency stakeholders (e.g. QRC, DSDMIP, QICN, RIN) approximately 12 months prior to construction, to align Project's Local Business and Industry Plan with current local content policies.

BMA will also work with its Principal Contractor in consultation with DET and Construction Skills Queensland regarding current skill shortages and alignment of recruitment and Project supply strategies with related initiatives. BMA's Principal Contractor will also be required to coordinate the use of trades across major contracts to reduce demand on local businesses.

To maximise local access to Project supply opportunities during construction and in the lead up to operations phase, BMA will:

- hold local briefing sessions for businesses and prospective applicants in Dysart, Clermont, Moranbah and Middlemount to learn about project opportunities and register for BMA's C-Res Local Buying Program;
- promote contracting and employment opportunities through local and regional stakeholder networks; and
- provide advance notice of the Project schedule to local and regional businesses (via the C-Res supplier register, and related stakeholder groups such as Moranbah Traders Association and Dysart Community Support Group).

To support the diversification and sustainability of local business and industry, BMA will consult with and support regional development stakeholders on the design and implementation of capacity building strategies for local businesses. These stakeholders include:

- Moranbah Traders Association;
- Dysart Community Support Group;
- Greater Whitsunday Alliance
- Isaac Regional Council's Economic Development team; and
- the Mackay Isaac Whitsunday Regional Development Authority.

Aboriginal and Torres Strait Islander Economic Empowerment Plan

BMA's Aboriginal and Torres Strait Islander Economic Empowerment Plan seeks to work with Aboriginal and Torres Strait Islander peoples to deliver sustainable improvements in their economic, social and cultural wellbeing.

For the Project, this will include milestones and targets for:

- pre-employment training, employment, career development and retention of Aboriginal and Torres Strait Islander employees;
- business procurement from Aboriginal and Torres Strait Islander enterprises; and
- Aboriginal and Torres Strait Islander peoples vocational training and livelihood support through voluntary Social Investment Plans.

The Plan will encompass the following strategies:

- use of targeted and culturally appropriate strategies for Aboriginal and Torres Strait Islander people's recruitment through outreach to community organisations, use of networks, and media advertising through channels maximising reach to Aboriginal and Torres Strait Islander audiences;
- use of Aboriginal and Torres Strait Islander peoples' outreach strategies as part of graduate and undergraduate intake recruitment processes including digital, print and campus campaigns targeting Aboriginal and Torres Strait Islander peoples;
- adopting Aboriginal and Torres Strait Islander peoples' employment models which may include pre-vocational training to create pathways to employment, and a range of capacity building initiatives such as numeracy and literacy programs, basic vocational skills, mentoring and addressing foundational issues identified as barriers to employment; and
- building the capability of leaders to develop an enabling environment for retention, progression and career development of Aboriginal and Torres Strait Islander employees.

On approval of the Project, BMA will consult with BBAC, DATSIP and local Indigenous community organisations to inform the development of the Plan based on current social conditions and evidence (e.g. community aspirations, employment and education statistics, business supplier market), and agreed milestones and targets. BMA will formalise the Plan for implementation at least six months prior the Project's construction phase, to effectively integrate it with BMA's broader strategies for enhancing local business capacity. BMA will review the Plan annually in consultation with key stakeholders to ensure it remains appropriate to community needs and economic empowerment objectives.

6.7.5 SIMP action plan: Local Business and Industry

Table 73 outlines the key actions to be implemented by BMA to address the impacts and opportunities identified by this SIA and achieve the desired outcomes identified in Section 6.7.2.

Table 73: SIMP Action Plan: Local Business and Industry

Indicative Project phase	Management Strategies
Post-approval	• Consult with BBAC, DATSIP, and local Indigenous community organisations to inform the development of the Aboriginal and Torres Strait Islander Economic Empowerment Plan
12 months prior to construction	• Liaise with industry and agency stakeholders (e.g. QRC, DSDMIP, QICN, RIN) to align with current local content policies • BMA's Principal contractor will coordinate across construction contractors to manage the demand for tradespeople over the course of construction
Six months prior to construction	• Finalise the Aboriginal and Torres Strait Islander Economic Empowerment Plan for implementation and effective integration with broader business capacity strategies
	• Provide information through BMA's local and regional business networks, including BMA's Local Buying Program, advising of contracting and supply opportunities • Convene local briefing sessions in Dysart, Moranbah and Middlemount to increase awareness of the project opportunities and facilitate registrations for further information • Provide regular advanced notification on the Project construction schedule to local and regional business stakeholders
During construction	• Annual review of the Plan with key stakeholders
During operation	• Annual review of the Aboriginal and Torres Strait Islander Economic Empowerment Plan with key stakeholders
	• Provide information through BMA's local and regional business networks, including BMA's Local Buying Program, advising of contracting and supply opportunities • Convene local briefing sessions in Dysart, Moranbah and Middlemount to increase awareness of the project opportunities and facilitate registrations for further information • Provide regular advanced notification on the Project schedule to local and regional business stakeholders

7. SIMP MONITORING AND REPORTING

This section outlines how BMA will monitor the performance and effectiveness of the SIMP, to ensure that:

- BMA's commitments are delivered;
- desired outcomes are achieved;
- local communities and stakeholders are integrally involved in implementation and monitoring of the SIMP; and
- SIMP strategies and management measures can be modified in response to monitoring data.

7.1 Monitoring framework

The monitoring framework provided in Table 74 includes:

- Project impacts and benefits;
- the desired outcomes for each impact and benefit;
- management measures (noting full details are provided in Section 6);
- performance indicators;
- monitoring mechanisms, including stakeholder engagement;
- data sources; and
- the timing and frequency of monitoring.

This will form the basis of the SIMP monitoring plan that will be initiated prior to the commencement of construction.

The SIMP Coordination Team will be responsible for monitoring SIMP delivery and performance indicators, supported by the BHP personnel identified in Section 6.2 and the stakeholders identified in Table 74, and for reporting against the monitoring plan.

7.2 Stakeholder engagement in monitoring

SIMP monitoring processes will include data recording and analysis, and the engagement mechanisms identified outlined in Table 74. These include:

- engagement with IRC on matters of shared value and community priorities;
- consultation with community partners regarding BHP's contributions to communities;
- seeking landholder feedback at least annually;
- stakeholder engagement in the development of BHP's regular social baseline monitoring report;
- an employee survey to gauge personnel satisfaction with workplace culture and housing and accommodation provision;
- consideration of community investment partners' records with respect to the success of BMA-supported program implementation;
- consultation with IAHT and ELAM regarding affordable/supported housing demand trends;

- consultation with the Mackay PHN, local GPs, and Mackay HHS regarding health service capacity and opportunities for collaboration;
- collaboration with Lady Gowrie Day Care Centre and IRC to identify and facilitate increased childcare capacity in Dysart if required as the result of Project personnel's requirements;
- consultation with BBCCs, IRC and community investment partners regarding demand for community services and collaborative responses; and
- regular engagement QPS, QAS and QFES to monitor service demands and support cooperation.

7.3 Reporting and review

Population numbers or social conditions such as the availability of housing or health services may have changed by the time the Project commences. Six months prior to the planned commencement of construction, BMA will consult with IRC regarding any changes to social conditions which would materially affect the significance of social impacts as assessed in Section 5. If material changes to social conditions are identified, BMA will review SIMP actions to ensure that the strategies recommended in the SIMP remain relevant.

From the commencement of construction, the SIMP Coordination Team will provide biannual updates on SIMP implementation to the BBCCs and IRC, and seek their feedback, which will inform SIMP implementation.

During construction and the early years of operations, BMA will undertake annual reviews of the SIMP, in consultation with stakeholders including IRC, the BBCCs, DSDMIP and stakeholders identified in the monitoring framework. The review process will address:

- changes to social conditions;
- current Council and community priorities;
- progress with SIMP delivery; and
- the results of monitoring mechanisms outlined in Table 74.

Monitoring results and stakeholder feedback will enable BMA to identify if desired outcomes aren't being achieved, e.g.:

- targets for Indigenous or female employment are not being reached;
- local residents are not seeking and obtaining Project employed;
- there has been no in-migration of personnel and their families to live locally; or
- commitments have not been delivered to the program established as part of the SIMP Implementation Plan;

Adaptation of management measures, if required, would be undertaken following the annual review, and a revised SIMP provided for OCG and IRC approval.

Following each annual review, a Social Impact Management Report will be provided to the Office of Coordinator General and IRC. Reporting on some measures will also be incorporated in reporting processes as part of BHP Coal's Annual Report (see Table 74).

An external audit of the SIMP effectiveness and delivery will be undertaken by a qualified third party. This will be done in consultation with relevant stakeholders including government departments, service providers and other affected stakeholders, at the completion of construction.

The SIMP will then be reviewed twice and separately audited twice during the first 10 years of operation, or until such time as BMA and the Coordinator-General agree that the timeframe requires amendment. A report on each audit's findings will be provided to the Coordinator-General within 60 days of completion of the relevant period.

Table 74 provides the SIMP monitoring framework.

Table 74: SIMP Monitoring Program

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
Community and Stakeholders						
Positive contribution to community cohesion and local towns' identity as mining towns	New local personnel and family members are integrated to community Local employment supports community identity	Local focus in recruitment strategy Support community development programs as per BHP's CDMP Provide settlement support for in-migrating personnel	Number and percentage of operational personnel living in Isaac LGA Settlement program implemented Change in ERP in Dysart	HR and accommodation/housing procedures Consultation with community partners Service agreement for settlement services	HR and housing register Settlement program records	Annually from end of Y 1 operations
Occasional impacts on amenity of nearby landholders	No impact of noise or dust on nearby landholdings' quality of life	Environmental mitigation measures as detailed in the EIS Regular engagement with potentially affected landholders Manage any complaints in accordance with BHP's complaints management mechanism	Nearby landholders advise that Project impacts are not affecting their quality of life	Seek landholder feedback annually	Landholder consultation records	Annually, from commencement of construction
Potential to strengthen population growth in Dysart and the Isaac LGA as a whole through direct and indirect employment	Personnel move from other LGAs to Dysart and potentially Moranbah	Provision of subsidised housing for all employees who choose to migrate to Dysart and potentially Moranbah Settlement program	Uptake of BHP housing in Dysart Census 2021 and 2026 data (occupied dwellings)	HR records - housing uptake	BHP Housing Register QGSO population estimates for ERP and FTE population	Annually from commencement of operations Census data when available
Potential for cumulative increases in NRW to increase the number of males and NRW in local towns, potentially affecting perceptions of safety	NRW's behaviour is aligned with community standards	Expectations of workforce behaviour are clearly articulated in BHP Workplace Conduct Policy Stakeholder issues and grievances are monitored, identified, evaluated, addressed and recorded	Number of substantiated complaints about workforce behaviour	Feedback and Complaints Procedure Consultation with IRC, BBCC and QPS	BMA community engagement records and complaints register Consultation records	Monthly, if and when complaints received

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
		Complaints about workforce behaviour re dealt with in accordance with BHP's established Human Resources procedures				
Workforce						
Up to 1,000 construction jobs by 2022	Participation of personnel from the Isaac LGA, Central Queensland and other Queensland regions in the Project workforce	Requirement of construction contractor to ensure local personnel and companies have full and fair opportunities to participate	Construction initiated and completed	Number of construction jobs tracked and reported	Annual report	Annually from first annual reporting date during construction
Up to 500 operational jobs	Recruitment of local personnel will ensure that local community members benefit from the Project's employment and training opportunities	Local focus in recruitment strategy Training and development strategies (see (Section 6.4.4)	Project employment rates for personnel from the local, regional and broader (Queensland) areas	Operations employment numbers tracked and reported BHP social baseline monitoring reports, which include stakeholder engagement	Annual report BHP Social Baseline reports (3 yearly)	Annually from first annual reporting date after operations commence As per Social Baseline reporting schedule
Increased long-term availability and diversification of mining employment in the Isaac LGA	An appropriately and competitively skilled workforce which includes local residents, young people, women and Indigenous people	Training and development strategies Recruitment strategies	Number of new entrants to underground mining Number of permanent jobs offered	HR recording – personnel new to mining and underground mining	HR records	Quarterly from commencement of operations
Increase in employment opportunity for Indigenous people	At least 5.75% of the Project's workforce are Indigenous people by 2025	Recruitment strategy with a focus on Indigenous people Culturally specific training and mentoring programs	Indigenous candidate registrations for training and career development program	HR records – Indigenous identification	HR records	Bi-annually Y1-3 (operations)

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
			Number and percentage of Indigenous employees			
Increase in employment opportunity for local and other women	Strong project contribution to BHP's target of a 50% female workforce by 2025	BMA's workforce diversity strategy	Number and percentage of female employees	HR recording – female employees	HR records	Annually Y 1- 3 (operations)
Approximately 10 apprenticeships and training opportunities available by 2025	Apprenticeships and training opportunities are available to local people	Training and development strategy (apprenticeships and traineeships)	Number of apprenticeships and training opportunities available	HR records – self-identified Indigenous people	HR records	Annually Y 1- 3 (operations)
Potential to enhance the wellbeing of project personnel and families	Heathy engaged workforce and families	Workforce culture that supports holistic health and wellbeing Investment in community development programs	Personnel satisfaction with workplace culture and housing provision	Employee survey	Employee survey	Annually Y 1- 3 (operations)
Contribution to competition for skilled labour within the Isaac LGA and MIW region	BHP contributes to labour force capacity building	Investment in education and training programs	Number of participants in education and training programs	Require and record participation rates for education and training programs	Community investment partners' records	Annually Y 1- 3 (operations)
Housing and accommodation						
Requirement for an estimated 900 – 1,000 WAV beds	Quality WAV accommodation is available for all NRW	Provision of purpose-built construction WAV on mining lease	Number of WAV beds provided and occupied	Personnel satisfaction with WAV quality Rental vacancy records	WAV records Personnel survey REIQ	Six monthly during construction, annually year 1-3 of operations
An estimated 130 dwellings could be required to house new local residents,	All Project personnel who chose to move to Dysart are provided with housing, with	Clear understanding of Project accommodation needs and a plan to house or accommodate all Project	Number of houses (BMA and non-BMA) occupied by Project personnel	Track uptake of BMA housing	Housing and Accommodation Register	Six monthly during Year 1- 5 (operations)

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
primarily in Dysart and Moranbah	potential for housing to also be available ion Moranbah	personnel Provision of subsidised housing in Dysart and potentially Moranbah for all employees originating from outside the Isaac LGA or requiring housing due to change of employer		Rental vacancy records	REIQ/SQM	
Housing requirements for contractors, cumulative impacts and/or and stimulation of indirect employment may affect housing availability	No increase in the number of people seeking social housing attributable to housing requirements of Project personnel (employees and contractors)	Contractors' Workforce Accommodation Plan Workforce Accommodation Plan (operations), including housing provision for all employees Provide contractor access to any surplus BHP housing if required	Consultation with IAHT and ELAM regarding affordable/supported housing demand trends	IAHT and ELAM records Track use of BMA housing	Consultation with IAHT, IRC and ELAM	Six monthly during construction and Y 1- 3 operations
Health and wellbeing						
During construction, demand for approximately 0.08 of a GP and increased demands on health and emergency services	Non-resident workers' access to GP services avoids impact on residents' access	on-site services and facilities to enhance workers' health and reduce impacts on local services Agreement with GP service providers to provide for NRP health service needs	No increase in GP waiting times	Consult with PHN, GPs, and local hospitals	Feedback from IRC, PHN, GP, hospital and community services	Implement agreement prior to construction. Seek feedback six monthly during construction
During operation, demand in the order of up to 0.5 GP as well as increased demand for hospital and mental health services	Any need for supplementation of GP services in Dysart is identified and addressed in collaboration with stakeholders	Advanced project information to Mackay HHS and North Queensland PHN to support health service planning and development of cooperative response procedures Collaboration with Queensland Health, PHN and GPs to support recruitment of additional GPs in Dysart of required	No increase in GP waiting times	Consult with HHS, PHN, GPs, and local hospitals from to the end of Year 3 operations	Feedback from IRC, PHN, GP, hospital and community services	Monitor annually to Y3 operations.

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
Increased demand for Police, Ambulance and Fire and Rescue Services	QPS, QAS and QFES able to plan for increases in services to address Project-induced population increases	Project schedule and workforce ramp-up communicated to QPS, QAS and QFES Contribution to Isaac LGA population monitored and communicated to stakeholders Collaborative measures as outlined in Section 6.6	No decrease in QAS, QFES or QPS service levels attributed to the Project	Consult with HHS, PHN, QPS, QAS and QFES	Feedback from police and emergency services	From six months prior to construction to the end of Year 3 operations
Demand for up five long day care places, and four out of school hours care places	Local childcare services are supported to increase capacity in line with Project-induced demand	Collaboration with Lady Gowrie Day Care Centre and IRC to identify and facilitate increased childcare capacity in Dysart Support for educator training if insufficient childcare personnel are available in Dysart	Number of Project-related enrolments at local childcare services Waiting list numbers	Consultation with childcare services and IRC	Lady Gowrie Day Care Centre and IRC	Consultation 6 months prior to operations commencing collaboration as required
Demand for approximately four prep enrolments, 37 Year 1-10 enrolments, and up to seven Year 11-12 enrolments	Department of Education has sufficient and timely information to plan for increased enrolments	Provide advice to Department of Education on workforce ramp-up and anticipated number of increased enrolments	Number of Project-related enrolments at local schools and childcare centres	Queensland Education enrolment census and consultation with Dysart State School and High School	Queensland Education and Dysart State School	Consultation 6 months prior to operations commencing, monitored annually
Increased demand for settlement, family support community support, recreational and cultural services, including a contribution to possible cumulative demands	Local community services and organisations are supported to increase their capacity and increase the attractiveness of local towns	BHP's community development and shared value approach Partnerships and investment initiatives which contribute to community priorities (Section 6.3 and 6.6) Provision or funding for settlement services	Delivery and uptake of settlement services Service and program delivery metrics as agreed with partners	Consultation with BBCCs, IRC and community investment partners Service provider feedback on demand services	IRC and community investment partners	Annually during the first three years of operation

Impacts and benefits	Desired outcomes	Management measures	Performance Indicators	Monitoring Mechanism	Data Source	Timing and frequency
Local business and industry						
Positive contribution to local business through demand for local goods and services during construction	Local (Isaac LGA) and regional (Central Highlands and Mackay LGAs) business participation in supply chain for construction	Provide advice of contracting and supply opportunities through BMA's Local Buying Program Regular advanced notice of Project schedule to local and regional business stakeholders	Number of local, regional and Indigenous businesses supplying the Project	Reporting in accordance with QRC reporting templates	C-Res records Contractor records	Contractor records and C-Res records monitored quarterly
Long term opportunities for local, regional and Indigenous businesses to supply the Project	Increased business vitality and sustainability in the Isaac and adjacent LGAs	C-Res program, maximising access to Project employment and business participation in Project supply opportunities Aboriginal and Torres Strait Islander Economic Empowerment Plan	Number of local, regional and Indigenous businesses supplying the Project No. of BMA-supported Indigenous enterprises	Reporting in accordance with QRC reporting templates	C-Res records	Records monitored quarterly
Demands for personnel and supplies may exacerbate skills and labour shortages	Offset Project labour drains through skills training and business development initiatives	BMA's Principal contractor will coordinate construction contractors to manage demand for tradespeople C-Res Foundation, which supports business development programs Training initiatives which develop local workforce capacity (see Section 6.4.4)	Delivery of business capacity building and skills initiatives as per BHP's CDMP	C-Res management	C-Res records	Records monitored quarterly

8. CONCLUSION

The Saraji East Mining Lease Project would make a significant contribution to employment opportunities, community and economic development, and the sustainability of communities in the Isaac LGA. Employment opportunities will also be accessed by residents living outside the Isaac LGA.

The Project will offer employees and their families a choice of where they live, and will support employees' choices through the provision of accommodation, housing and investments in local communities.

IRC and communities in the Isaac LGA are experienced in managing mining projects and the changes they bring to communities. They are also strongly supportive of the development and continuation of coal mining projects in the region.

Given BMA's commitments to cooperation with its stakeholders and community development, assuming implementation of the management measures outlined in Section 6, and balancing the Project's likely benefits and opportunities against the impacts as evaluated in Section 5, significant residual negative impacts on local communities are not anticipated as a result of the Project's operation or construction.

The Project's alignment with planning goals as expressed in the MIW Regional Plan 2012 and the Isaac LGA Community Strategic Plan 2035 is summarised in Table 75.

Table 75: Project alignment with planning goals

Planning Goals	Project contributions
MIW Regional Plan	
The development of resilient and cohesive communities with distinct character	• Support for workers to settle in local communities will strengthen community resilience • Investment in community facilities and workforce-community integration programs will support community cohesion
Recognising and fostering existing community values, including character, cultural heritage, diversity, amenity, safety, access, and social capital	• Existing community values such as communities' identity as mining towns would be strengthened by the Project • The Project avoids impacts on cultural heritage, diversity safety and access • Community development and shared value arrangements will strengthen social and human capital
Retain regionally unique built and natural assets	• The Project's location avoids impacts on unique built assets • The EIS identifies impacts on natural assets and provides management measures to mitigate those impacts
Manage and sustain regional population growth and significant demographic changes	• Contribution to population growth in the Isaac LGA • Potential population increases as a result of the Project are identified in the SIA and will be monitored as part of the SIMP
Enhance the economic diversity of the region and support local business sustainability	• The Project's local supply chain and the availability of employment to local and regional personnel will strengthen business sustainability

Planning Goals	Project contributions
Improve diversity of employment opportunities in the region	• Development of the Project as an underground mine will diversify employment and supply opportunities in the MIW region
Improve housing availability and affordability to support growth and healthy communities	• BMA will provide housing and accommodation for Project employees who choose to move to the Isaac LGA, and require effective accommodation planning by contractors, to avoid impacts on housing availability and affordability
Manage cumulative social impacts that result from development, particularly mining projects	• The SIMP includes a comprehensive monitoring framework, including stakeholder engagement in monitoring, to identify the Project's contributions to cumulative impacts
Increase the capacity and variety of social infrastructure and service (including community, cultural, educational, health and recreational facilities)	• BMA invests in community development, services and programs in the communities in which it operates to support the capacity and variety of services
Isaac 2035 Goals	
Communities: Isaac will have strong and diverse communities that support all to live, work and raise families	• BHP will provide support for workers to settle in local communities which will strengthen community resilience
Economy: Isaac will continue to be Queensland's number one performing regional economy based upon a thriving, resilient and diverse mix of industry sectors	• The Project will support the continuation of coal mining in the LGA • Local and regional businesses will benefit from Project supply opportunities
Infrastructure: Isaac will have effective and sustainable infrastructure that supports the needs of the region's communities and its economic sectors	• BMA contributes to infrastructure provision (e.g. water supply and road infrastructure) by agreement with IRC to support the liveability of local towns
Environment: Isaac will have an appropriate and sustainable balance between environment, economy and community to ensure our natural resources are sustainably managed and protected	• Project land use is consistent with existing and intended use of land in the Isaac LGA or resource developments • The Project will contribute to increased and diversified employment, and to the sustainability of Dysart.

The SIA includes a comprehensive monitoring framework which will enable BMA and it stakeholders to track and evaluate the effectiveness of the Project SIMP, and provides a review process which will enable refinement and revision of SIMP actions where required.

REFERENCES

ABS 2017e. 2033.0.55.001 - *Socio-economic Indexes for Areas (SEIFA),* Data Cubes only, 2011 and 2016 State Suburb (SSC) Index of Relative Socio-economic Advantage and Disadvantage, 2011 and 2016 Local Government Area (LGA) Index of Relative Socio-economic Advantage and Disadvantage

ABS. 2008. *National Survey of Mental Health and Wellbeing 2007: Summary of Results.* Canberra

ABS. 2011a. C*ensus of Population and Housing: Basic Community Profile.* ASGS Main Statistical Areas of Moranbah SA2, Broadsound-Nebo SA2, Bowen Basin North SA3, Mackay SA4 and for Non-ABS Structures Isaac LGA, Mackay LGA. Moranbah SSC, Dysart SSC, Nebo SSC, Middlemount SSC

ABS. 2011b. *Census of Population and Housing: Aboriginal and Torres Strait Islander Peoples (Indigenous) Profile* for Mackay SA4 and Isaac LGA

ABS. 2016a. *Census of Population and Housing. General Community Profile*. ASGS Main Statistical Areas of Moranbah SA2, Broadsound-Nebo SA2, Bowen Basin North SA3, Mackay SA4 and for Non-ABS Structures Isaac LGA, Mackay LGA. Moranbah SSC, Dysart SSC, Nebo SSC, Middlemount SSC

ABS. 2016b. *Census of Population and Housing. Quick Stats.* Non-ABS Structures Isaac LGA, Mackay LGA. Moranbah SSC, Dysart SSC, Nebo SSC, Middlemount SSC

ABS. 2016c. C*ensus of Population and Housing. Time Series Profile.* Profile for ASGS Main Statistical Areas of Broadsound-Nebo SA2, Mackay SA4, Queensland STE, and for Non-ABS Structures Isaac LGA, Mackay LGA. Moranbah SSC, Dysart SSC, Nebo SSC, Middlemount SSC

ABS. 2016d. 2049.0 - *Census of Population and Housing: Estimating homelessness.* 2011 and 2016. http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2049.02011?OpenDocument. Accessed May 2018

ABS. 2016d. *Census of Population and Housing: Aboriginal and Torres Strait Islander Peoples (Indigenous) Profile.* Isaac LGA and Mackay LGA.

ABS. 2017. *Regional Profiles* for ASGS Main Statistical Areas of Moranbah SA2, Broadsound-Nebo SA2, Bowen Basin North SA3, Mackay SA4

AECOM. 2018. SEMLP. Transport and Traffic Impact Assessment. EIS Appendix J.1

Akbar, D., Kinnear, S., Chhetri, P. and Smith, P. 2016. *Assessing Road Travel Conditions in the Bowen Basin Region: Implications for Transport Planning in Australian Mining Communities.* Central Queensland University, ANZRSAI Conference 2016 Refereed Proceedings.

Australian Department of Employment. 2018. S*mall Area Labour Market Publication.* Accessed 23 August 2018 at https://www.employment.gov.au/small-area-labour-markets-publication

Australian Department of Industry, Innovation and Science. 2018a. *Resources and Energy Quarterly,* June 2018 Forecast Data. https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2018/documents/June-2018-Forecast-data.xlsx. Accessed 19 August 2018.

Australian Department of Industry, Innovation and Science. 2018b. *Resources and Energy Quarterly Report.* https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2018/documents/Resources-and-Energy-Quarterly-June-2018.pdf. Accessed 19 August 2018.

Australian Early Development Census. 2015. *Data Explorer Belyando and Broadsound Communities.* http://www.aedc.gov.au/. Accessed 19 December 2017.

Australian Industry Group and Australian Constructors Association, 2017. *Construction Outlook,* Accessed at http://cdn.aigroup.com.au/Economic_Indicators/Construction_Survey/2017/construction_outlook_October2017.pdf on 6 July 2018

Australian Institute of Health and Welfare, 2018. Mental Health services in Australia, https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-contents/summary

Australian Medical Workforce Advisory Committee. *The general practice workforce in Australia: Supply and requirements: 1999 - 2010.* 2000, Australian Medical Workforce Advisory Committee: Sydney.

Barclay, M., Weldegiorgis, F., Limerick, M. and Sutton, M. 2016. *QRC Indigenous Participation Survey – Final report.* Centre for Social Responsibility in Mining - Sustainable Minerals Institute, University of Queensland

Barnes, R., Harvey, B. and Kemp, D. 2015. *Benchmarking Leading Practice in Aboriginal Business Procurement in the Extractive Resource Sector. A report by CSRM for Aboriginal Enterprises in Mining, Exploration and Energy (AEMEE) and QGC.*CSRM Brisbane.

Barrett, R. & Walker, J. 2012. *Boom to bust in Queensland town of Dysart undermined.* The Australian. http://www.theaustralian.com.au/business/mining-energy/boom-to-bust-in-queensland-town-of-dysart-undermined/news-story/2ceb60bfffddc04597190b9b2176254b Accessed May 2017.

BHP SRM PLN Fit for Work - Personal Fatigue Management Plan V.1.1.

BMA. 2011. *Caval Ridge EIS – Cultural Heritage Chapter,* viewed at http://www.bhpbilliton.com/-/media/bhp/regulatory-information-media/coal/bhp-billiton-mitsubishi-alliance/caval-ridge/environmental-impact-statement-eis on 030517

Bowers, J., Miller, P., Mawren D. and Jones. B. 2018. *Psychological distress in remote mining and construction workers in Australia Medical Journal of Australia* accessed at https://www.mja.com.au/journal/2018/208/9/psychological-distress-remote-mining-and-construction-workers-australia

Business Queensland. 2018. *Safety performance reports and statistics.* https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/accidents-incidents/safety-performance. Accessed 20 June 2018.

CDMSmith. 2019. Economic Impact Assessment of Saraji East Mining Lease Project.

Centre for the Government of Queensland. 2015a. *Queensland Places; Broadsound.* http://queenslandplaces.com.au/broadsound-shire. Accessed 26 May 2017.

Centre for the Government of Queensland. 2015b. *Queensland Places; Dysart.* University of Queensland. http://www.queenslandplaces.com.au/dysart. Accessed 26 May 2017.

Centre for the Government of Queensland. 2015c. *Queensland Places; Middlemount.* University of Queensland, http://www.queenslandplaces.com.au/middlemount. Accessed 26 May 2017.

Dysart Business and Community Hub. 2014. *Dysart Business and Community Hub.* https://www.dysartcommunity.com.au/. Accessed, 19 May 2018.

Economic Development Queensland. 2017. *Bushlark Grove Stage 1 Plan.* https://www.bushlarkgrove.com.au/flux-content/global/catalogue/general-assets/Bushlark-Grove-stage-plan-stage-1.pdf

Elliott Whiteing. 2013. *Red Hill Mining Lease Social Impact Assessment,* BHB Billiton Mitsubishi Alliance

Elliott Whiteing. 2018. *Olive Downs Project Social Impact Assessment.* Pembroke Resources. http://statedevelopment.qld.gov.au/assessments-and-approvals/olive-downs-project.html.

Flatau, P. Centre for Social Impact, The University of Western Australia. 2017. *BHP Billiton Coal Social Baseline Assessment.*

Huong Dinh, H., & Pearson, L. 2015. *Specifying community economic resilience - a framework for measurement. Australasian Journal of Regional Studies,* The, 21, 278-302.

ICN Gateway. 2017. *Supplier Search.* http://gateway.icn.org.au/#search_anchor Accessed June 2017

ICN Queensland. 2017. *Black Business Finder.* http://www.bbf.org.au/about.html. Accessed June 2017

Indigenous Business Australia. 2017. *Research.* Iba.gov.au/research. Accessed, 19 May 2017

International Council on Mining and Metals. 2009. *Handling and Resolving Local Level Concerns & Grievances – Pilot Version*. October 2009. http://www.icmm.com/page/15822/icmm-presents-new-guidance-note-on-handling-and-resolving-local-level-concerns-and-grievances

International Association for Impact Assessment. 2015. *Guidance for assessing and managing the social impacts of projects.* http://www.iaia.org/uploads/pdf/SIA_Guidance_Document_IAIA.pdf

Isaac Regional Council. 2005. *Broadsound Planning Scheme. Dysart Map:*http://www.isaac.qld.gov.au/documents/12238/133772/Map%2009%20Middlemount%20-

%20Rural%20Preferred%20Use%20Area%20-%20Broadsound%20Planning%20Scheme.pdf Accessed, 3 May 2017

Isaac Regional Council. 2015. *Isaac 2035; Community Strategic Plan – Isaac's 20-year vision.* http://www.isaac.qld.gov.au/documents/12238/7241166/IRC_CommunityStrategicPlan_LowRes.pdf. Accessed 3 May 2017.

Isaac Regional Council. 2016. *Visitor Information Guide.* http://www.isaac.qld.gov.au/documents/12238/41133344/Visitor%20Information%20Guide. Accessed 3 May 2017.

Isaac Regional Council. 2017a. *Dysart Urban Design Framework, Isaac Regional Council.* http://www.isaac.qld.gov.au/documents/12238/41133344/Visitor%20Information%20Guide. Accessed 3 May 2017.

Isaac Regional Council. 2017b. *Projects: Moranbah Reservoir.* http://www.isaac.qld.gov.au/moranbahreservoir. Accessed 3 May 2017.

Isaac Regional Council 2017c. *Extract provided to consultants from internal 2016 Camp Accommodation Data Report.*

Kamalakanthan, A. & Jackson. S. 2016. *The Supply of Doctors in Australia: Is There a Shortage?* Discussion Paper No. 341, May 2006, School of Economics, The University of Queensland, Queensland

KPMG. 2015. BHP Billiton Coal. East Coast Australia Socio-Economic Baseline Report. Final. December 2015

KPMG. 2018. Coal Price and FX market forecasts, Accessed at https://home.kpmg.com/content/dam/kpmg/au/pdf/2018/coal-price-fx-consensus-forecast-march-april-2018.pdf on 2 July 2018.

McPhedran, S. and De Leo, D. (2014) Griffith University, 2014 Relationship Quality, Work-Family Stress, and Mental Health Among Australian Male Mining Industry Employees, Journal of Relationships Research, Volume 5, 3, 1–9 ,Cambridge University Press, accessed at https://research-repository.griffith.edu.au/bitstream/handle/10072/62101/95292_1.pdf?sequence=1 on 20 March 2019

Middlemount Community School. 2018. Middlemount Community School, Queensland Government. https://middlemountcs.eq.edu.au/Pages/default.aspx

Middlemount Fire Station Facebook. 2018. https://www.facebook.com/Middlemount-Fire-Station-492766350920785/

Minerals Council of Australia. 2015. *Blueprint for Mental Health and Wellbeing.* https://www.minerals.org.au/file.../files/.../MCA_Mental_Health_Blueprint_FINAL.PDF.

Minserve, 2017. Road Management Plan.

Moranbah & District Support Services. 2017. *Moranbah & District Support Services; Community Activity Directory.* http://www.mdssmoranbah.com/moranbah-community-activity-directory

Murray, A. 1996. *Nothing but Scrub for Moranbah Silver Jubilee Committee*

My Community Directory. 2018. *Service Provider Listings, Moranbah, Dysart, Middlemount,* http://www.mycommunitydirectory.com.au. Accessed 19 February 2018.

QRSIS. 2018. *Building approvals - Residential dwelling units – new house.* Accessed at shttps://statistics.qgso.qld.gov.au/pls/qis_public/QIS1110W$UDQCTL1.ProcessActions. Accessed 20 July 2018.

Queensland Ambulance Service. 2017. *Local Ambulance Service Networks. https://www.ambulance.qld.gov.au/LASN.html.* Accessed April 2017.

Queensland Cabinet & Ministerial Directory. 2011. *Media Statement for Hon. Neil Roberts (Police, Corrective Services and Emergency Services); Refurbished Moranbah Ambulance Station officially opened, Queensland Government.* http://statements.qld.gov.au/Statement/Id/74475. Accessed April 2017.

Queensland Cabinet & Ministerial Directory. 2016. *Media Statement for Hon. Anthony Lynham (Minister for State Development & Minister for Natural Resources and Mines): Barada Barna People and Widi People win native title rights.* http://statements.qld.gov.au/Statement/2016/6/29/barada-barna-people-and-widi-people-win-native-title-rights. Accessed April 2017.

Queensland Courts. 2018. *Queensland Courts' domestic and family violence (DFV) statistics* https://www.courts.qld.gov.au/court-users/researchers-and-public/stats. Accessed 3 September 2018

Queensland Department of Communities, Child Safety and Disability Services. 2016a. *Queensland Women's Strategy 2016-21.* https://www.communities.qld.gov.au/resources/gateway/campaigns/womens-strategy/queensland-womens-strategy.pdf. Accessed May 2017.

Queensland Department of Communities, Child Safety and Disability Services. 2016b. *Queensland Multicultural Policy; Our story, our future.* Queensland Government. https://www.communities.qld.gov.au/resources/multicultural/policy-governance/qm-policy.pdf Accessed May 2017

Queensland Department of Communities, Child Safety and Disability Services. 2017. *Queensland Youth Strategy; Building young Queenslanders for a global future, Queensland Government.* https://www.qld.gov.au/youth/documents/be-involved-have-your-say/youth-strategy/qld-youth-strategy.pdf Accessed May 2017

Queensland Department of Education & Training. 2016a. *Advancing Skills for the future; A strategy for vocational education and training in Queensland – draft for consultation, Queensland Government.* https://training.qld.gov.au/site/docs-data/Documents/strategies/advancing-skills/advancing-skills-draft-consultation.pdf Accessed May 2017

Queensland Department of Education & Training. 2016b. *Advancing Aboriginal and Torres Strait Islander education and training; An action plan for Queensland – Draft for consultation,* Queensland Government. https://indigenousportal.eq.edu.au/SiteCollectionDocuments/adv-ed-atsi-action-plan.pdf Accessed May 2017

Queensland Department of Education & Training. 2018. *Education Statistics and Information; Day 8 Enrolment Figures (2014-2018). h*ttp://education.qld.gov.au/schools/statistics/enrolments.html. Accessed April 2018.

Queensland Department of Environment and Heritage Protection 2017b. *Environmental health and pollution – air pollutants – particles.* https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/particles#pm10. Accessed: 30 October 2017.

Queensland Department of Environment and Heritage Protection. 2017a. A*ir quality monitoring results – Moranbah.* http://www.ehp.qld.gov.au/air/data/airchart.php?station_id=mor&. Accessed 27 October 2017.

Queensland Department of Infrastructure, Local Government & Planning. 2015a. *Development Assessment Mapping System.* https://dams.dsdip.esriaustraliaonline.com.au/damappingsystem/. Accessed 22 April 2017.

Queensland Department of Infrastructure, Local Government and Planning. 2015b. *Non-resident worker accommodation - PDA guideline no. 3 May 2015*. https://dilgp.qld.gov.au/resources/guideline/pda/guideline-03-workers-accom-may2015.pdf. Accessed 09 October 2017.

Queensland Department of Local Government & Planning. 2012. *Mackay, Isaac & Whitsunday Regional Plan; Planning for a resilient, vibrant and sustainable community, Queensland Government.* https://www.dilgp.qld.gov.au/resources/plan/miw/miw-regional-plan.pdf. Accessed May 2017.

Queensland Department of Natural Resources and Mines, 2013. *QGN 16 Guidance Note for Fatigue Risk Management - Coal Mining Safety and Health Act 1999 Mining and Quarrying Safety and Health Act 1999*

Queensland Department of Natural Resources and Mines. 2016. *Queensland Mines and Quarries - Safety Performance and Health Report 2015-16.* https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0004/1051186/safety-performance-health-report-2015-16.pdf. Accessed 27 October 2017.

Queensland Department of Natural Resources and Mines. 2018. SERIES: Attached and detached dwellings: median sale price. Office of the Valuer-General, Property Sales.http://www.qgso.qld.gov.au/index.php (Accessed April 2019).

Queensland Department of State Development. 2013. *Social Impact Assessment Guideline. July 2013.* http://www.statedevelopment.qld.gov.au/resources/guideline/social-impact-assessment-guideline.pdf

Queensland Department of State Development. 2016. *Building our Regions; Royalties for Resource Producing Communities. Queensland Government*. http://www.statedevelopment.qld.gov.au/index.php/regional-development/regional-economic-development/building-our-regions/royalties-resource-producing-communities?view=listcats. Accessed May 2017.

Queensland Department of State Development. 2017a. *Sharing our stories; Moranbah Youth and Community Centre springs to life. Queensland Government.* https://www.statedevelopment.qld.gov.au/news-and-events/moranbah-youth-and-community-centre-springs-to-life.html. Accessed April 2017.

Queensland Department of State Development. 2018. *Social Impact Assessment Guideline. March 2018.* https://www.statedevelopment.qld.gov.au/resources/cg/social-impact-assessment-guideline.pdf

Queensland Department of the Premier and Cabinet. 2017. *Media Statements for the Hon. Dr. Anthony Lynham. Queensland Government, Accessed, 3 May 2017:* http://statements.qld.gov.au/Statement/2017/3/5/miw-councils-vie-for-share-of-70m-infrastructure-funds

Queensland Government (Office of Queensland Parliamentary Counsel). 2017a. R*egional Planning Interests Act 2014*. https://www.legislation.qld.gov.au/view/html/inforce/current/act-1971-055 Accessed 10 May 2018

Queensland Government (Office of Queensland Parliamentary Counsel). 2017b. *State Development and Public Works Organisation Act 1971*. https://www.legislation.qld.gov.au/view/html/inforce/current/act-2014-011. Accessed 10 May 2018

Queensland Government (Office of Queensland Parliamentary Counsel). 2018a. *Environmental Protection Act 1994.* https://www.legislation.qld.gov.au/view/pdf/inforce/current/act-1994-062. Accessed 10 May 2018.

Queensland Government (Office of Queensland Parliamentary Counsel). 2018b. *Planning Act 2016*. https://www.legislation.qld.gov.au/view/html/inforce/current/act-2016-025 Accessed 10 May 2018

Queensland Government (Office of Queensland Parliamentary Counsel). 2018c. *Strong and Sustainable Resource Communities Act 2017.* https://www.legislation.qld.gov.au/view/html/asmade/act-2017-028. Accessed 2 April 2018

Queensland Government Data. 2017. *Mental Health Activity Data Collection (MHADC).* https://data.qld.gov.au/dataset/mental-health-activity-data-collection-mhadc. Accessed 8 May 2017.

Queensland Government Statistician's Office. 2018. Bowen Basin: Non–resident population projections, by local government area (LGA), 2018 to 2024, http://www.qgso.qld.gov.au/products/tables/bowen-basin-non-resident-pop-proj-lga/index.phpNB: 2017 Estimated by QGSO. 2018-2024 projected by QGSO. 2025-2026 estimated by consultant based on previous 5 year average

Queensland Government Statistician's Office. 2015a. B*roadhectare study 2015 profile; Mackay, Isaac and Whitsunday Region.* Queensland Treasury, Accessed 15 May 2017: http://www.qgso.qld.gov.au/products/reports/broadhectare-study/bhs-miw-201502.pdf

Queensland Government Statistician's Office. 2015b. *Population change in Queensland resource regions.* http://www.qgso.qld.gov.au/subjects/demography/population-estimates/reports/pop-change-qld-resource-regions/index.php. Accessed 17 May 2017.

Queensland Government Statistician's Office. 2015c. *Reported Victim Offences, Queensland 2014-15. Queensland Treasury,*http://www.qgso.qld.gov.au/products/reports/reported-victims-offences/reported-victims-offences-2014-15.pdf. Accessed May 2017

Queensland Government Statistician's Office. 2016a. *Bowen Basin non-resident population report, Queensland Treasury,* http://www.qgso.qld.gov.au/products/reports/bowen-basin-pop-report/index.php. Accessed May 2017

Queensland Government Statistician's Office. 2016b. *Index of retail prices in Queensland regional centres,* Queensland Treasury. http://www.qgso.qld.gov.au/products/reports/bowen-basin-pop-report/index.php. Accessed May 2017.

Queensland Government Statistician's Office. 2017a. *Queensland Domestic and Family Violence Report.* http://www.qgso.qld.gov.au/products/reports/domestic-family-violence/domestic-family-violence-report-2017.pdf . Accessed 27 July 2018.

Queensland Government Statistician's Office. 2018a Bo*wen Basin population report, 2017.* Accessed at http://www.qgso.qld.gov.au/products/reports/bowen-basin-pop-report/bowen-basin-pop-report-2017.pdf. Accessed 6 March 2018.

Queensland Government Statistician's Office. 2018b *Bowen Basin: Non–resident population projections, by local government area (LGA), 2018 to 2024.* http://www.qgso.qld.gov.au/products/tables/bowen-basin-non-resident-pop-proj-lga/index.php. Accessed 6 March 2018.

Queensland Government Statistician's Office. 2018c QGSO. *Bowen Basin: Worker accommodation village (WAV) bed capacity, by local government area (LGA), 2006 to 2017.* http://www.qgso.qld.gov.au/products/tables/bowen-basin-wav-bed-capacity-lga/index.php. Accessed 6 March 2018.

Queensland Government Statistician's Office. 2018d. *Labour Force (trend update).* http://www.qgso.qld.gov.au/products/reports/labour-force/labour-force-201807.pdf. Accessed 19 August 2018

Queensland Government Statistician's Office. 2018e QGSO. *Regional Profiles: Isaac and Mackay Local Government Areas*. https://statistics.qgso.qld.gov.au/qld-regional-profiles Accessed 14 April 2018

Queensland Government Statistician's Office. 2018f. *Regional labour force – Mackay SA4, Jun 18 Source: ABS 6291.0.55.001,* released 26 July 2018. Accessed at http://www.qgso.qld.gov.au/products/reports/reg-labour-force/mackay-201806.pdf, accessed 9 August 2018

Queensland Government Statistician's Office. 2018g. *Regional youth unemployment, June 2018.* Accessed at http://www.qgso.qld.gov.au/products/reports/reg-youth-unemployment/reg-youth-unemployment-201806.pdf on 19 August 2018

Queensland Government Statistician's Office. 2018h. *Residential Land Development Profile.* http://www.qgso.qld.gov.au/products/reports/reg-youth-unemployment/reg-youth-unemployment-201806.pdf. Accessed 18 July 2018

Queensland Government Statistician's Office. 2018h. *Population Projections. 2015 edition (medium series).* Accessed 16 April 2019 at http://www.qgso.qld.gov.au/products/tables/proj-pop-lga-qld/index.php

http://www.qgso.qld.gov.au/subjects/demography/population-projections/reports/qld-govt-pop-proj/index.php

Queensland Government. 2016a. *Skilling Queenslanders for Work.* https://www.qld.gov.au/education/training/subsidies/pages/skilling-queenslanders-for-work Accessed May 2017

Queensland Government. 2016b. *Back to Work Initiatives.* https://backtowork.initiatives.qld.gov.au/ Accessed May 2017

Queensland Health. 2017a. *Hospital and Health Facility Profiles.* https://www.health.qld.gov.au/services. Accessed 19 December 2017

Queensland Health. 2017b. T*he burden of disease and injury in Queensland's Aboriginal and Torres Strait Islander people 2017 (reference year 2011).* https://www.health.qld.gov.au/__data/assets/pdf_file/0031/660838/BoD-2016-HHS-FINAL.pdf. Accessed 20 July 2018.

Queensland Magistrates Court. 2018, Domestic and family violence statistics, Accessed at https://www.courts.qld.gov.au/court-users/researchers-and-public/stats on 4 December 2018

Queensland Police Service. 2013. *RTI Police Station Profiles: Moranbah, Dysart, Middlemount.* https://www.police.qld.gov.au/rti. Accessed 15 May 2017.

Queensland Police Service. 2018. *CrimeStats* https://data.police.qld.gov.au/CrimeStatsMobile/#/map Accessed 20 June 2018

Queensland Resources Council 2017. R*esourceful Women.* www.qrc.org.au/policies/resourceful-women/ Accessed on 30 September 2017.

Queensland Resources Council. 2018. *Economic Impact of the Minerals and Energy Sector on the Queensland Economy 2016/17.* https://www.qrc.org.au/wp-content/uploads/2016/10/Economic-Impact-of-Resources-Sector-on-Qld-Economy_2016-17-Final-Report.pdf

Queensland Resources Council. 2013a. *Code of Practice for Local Content.* https://www.qrc.org.au/wp-content/uploads/2016/07/Local-Content-Code-of-Practice.pdf. Accessed 23 August 2017

Queensland Resources Council. 2013b. *Code of Practice for Local Content Implementation Guideline.* https://www.qrc.org.au/wp-content/uploads/2016/07/Implementation-Guideline.pdf Accessed 23 August 2017

Queensland Resources Council. 2017. *What are resources worth to Isaac. 2016-17 financial year.* https://www.qrc.org.au/wp-content/uploads/2017/11/Isaac_LGA_2017.pdf. Accessed 18 July 2018.

Queensland Treasury. 2011. *Guide to Risk Management Queensland Government.* https://s3.treasury.qld.gov.au/files/guide-to-risk-management.pdf

Realestate.com. 2018. *Investor Information.* http://www.realestate.com.au/invest. Accessed as at 6 September 201l

Real Estate Institute of Queensland. 2018. Vacancy Rates, accessed at https://www.reiq.com/REIQ/Research/Queensland_Vacancy_Rates_/REIQ/Research/Analysis/Rental_Vacancies.

aspx?hkey=901d5aa9-b298-4848-b036-0ed9268ee90cREMPLAN, 2018a. *Isaac Regional Council Community Profile.* http://www.communityprofile.com.au/isaac. Accessed 29 August 2018

REMPLAN, 2018b. *Isaac Regional Council Economic Profile.* http://www.economyprofile.com.au/isaac/trends/business-counts/staff. Accessed 26 September 2018

Resource Industry Network. 2017. P*ress Release - Campaign to lure skilled workers back to Mackay region* http://www.resourceindustrynetwork.org.au/announcements/campaign-to-lure-skilled-workers-back-to-mackay-region

Rolleston, F. 1983. *The Broadsound story, Mackay, Broadsound Shire Council,* quoted by Centre for Queensland Places. 2017. http://queenslandplaces.com.au. Accessed 20 June 2018.

Sparkes D, Hair J, & Stevenson A, 2015. *BMA investigates reopening central Queensland mine using FIFOs from cheaper states.* ABC News. http://www.abc.net.au/news/2015-01-30/bma-considers-opening-norwich-mine-using-interstate-workers/6057720 Accessed May 2017

SQM Research. 2018a. *Weekly Asking Rents by Postcode.* www.sqmresearch.com.au/weekly-rents Accessed 9 September 2018.

SQM Research. 2018b. *Asking Property Prices by Postcode.* www.sqmresearch.com.au/askingpropertyprices Accessed 9 September 2018.

SQM Research. 2018c. *Total Property Listings by Postcode.* http://www.sqmresearch.com.au/total-property-listings Accessed 9 September 2018.

The Australian Industry Group. 2016. *Workforce Development Needs Survey Report.* http://cdn.aigroup.com.au/Reports/2016/15396_skills_survey_report_mt_edits_2.pdf

The Urban Land Development Authority. 2011. *Moranbah and Blackwater: Social, Cultural and Community Infrastructure Analysis.* May 2011. https://www.dilgp.qld.gov.au/resources/plan/pda/moranbah-and-blackwater-report.pdf

Torrens University Public Health Information Development Unit. 2017. *Social Health Atlas of Australia for LGAs and Population Health Areas,* Published July 2018. http://phidu.torrens.edu.au/. Accessed 6 September 2018.

Tourism and Events Queensland. 2014. *Mackay Destination Tourism Plan.* https://teq.queensland.com/about-teq-new/plans-and-strategies/destination-tourism-plans. Accessed 22 June 2018.

University of Newcastle and Hunter Institute of Mental Health. 2012. M*ental Health and The NSW Minerals Industry.* Prepared for the NSW Minerals Council.

University of Queensland Centre for Social Responsibility in Mining. 2014. *Good Practices in Indigenous Employment, Training & Enterprise Development (IETED).* https://www.csrm.uq.edu.au/research/good-practices-in-indigenous-employment-training-enterprise-development-ieted. Accessed 2 August 2017.

Urban Land Development Authority. 2012. M*oranbah Community Newsletter #4. February 2012, Queensland Government.* http://www.statedevelopment.qld.gov.au/resources/plan/pda/moranbah-community-newsletter-4.pdf. Accessed April 2017.

Vanclay, F. 2003. *International Principles for Social Impact Assessment.* Journal of Impact Assessment and Project Appraisals Vol. 21 Issue 1.

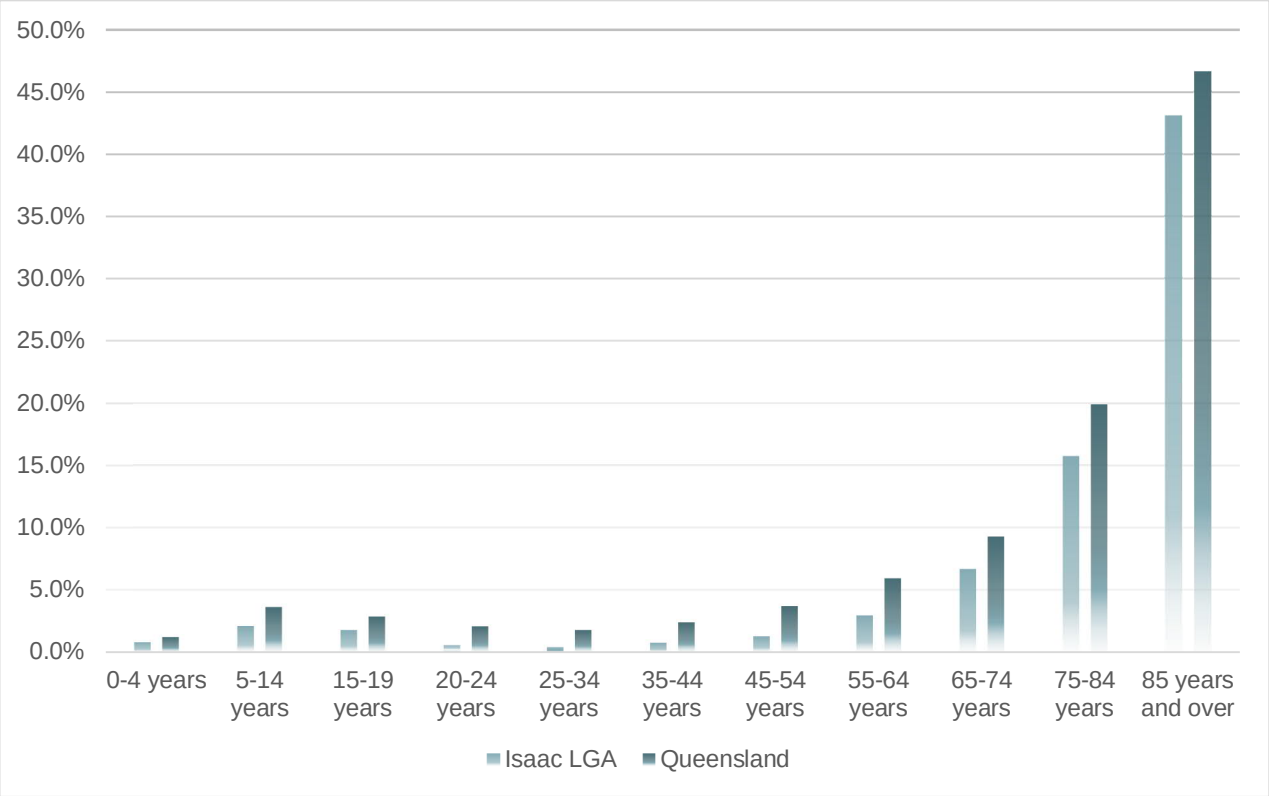
Vanclay, F. Esteves, A.M, Aucamp, I., Franks, D. 2015. *Social Impact assessment - Guidance for assessing and managing the social impacts of projects, International Association for Impact Assessment.*

Yellow Pages. 2018. *Business and Service Provider Listings. Moranbah, Dysart, Middlemount*. http://www.yellowpages.com. Accessed 19 May 2018.

Annex A: Supporting information: Demographic and employment data

The following figures and tables provide supporting information as referenced in the SIA.

Figure A-1 Core assistance need by age group 2016



Source: ABS 2016 Census of Population and Housing. Need for Core Assistance. Isaac LGA and Queensland. Working. Based on count of usual residents.

Table A-1 Percentage of developmentally vulnerable children (below 10% percentile nationally) on two or more domains of the Australian Early Development Census

LOCATION	Indigenous			Non-Indigenous			Total		
	2009	2012	2015	2009	2012	2015	2009	2012	2015
Broadsound - Nebo	*	*	*	*	*	*	6.7%	10.5%	6.7%
Moranbah	*	*	*	*	*	*	7.1%	7.6%	11.8%
Bowen Basin - North	15.4%	13.2%	15.2%	9.5%	10.1%	10.5%	9.8%	10.3%	10.8%
Mackay	20.2%	19.6%	25.3%	10.9%	11.1%	11.1%	11.6%	11.8%	12.4%
QUEENSLAND	31.3%	25.8%	27.5%	14.7%	12.8%	12.9%	15.8%	13.8%	14.0%

Source: AEDC 2015. Figures based on place of usual residence. Cited by Flatau, P. Centre for Social Impact, The University of Western Australia. 2017. For BHP.

Table A-2: WAV Accommodation, Dysart and Moranbah

Town	Camp	Existing beds	Total beds approved	Potential additional capacity
Clermont	ESS Compass Group - Clermont Coal Mine Village MS	511	511	0
CLERMONT TOTAL		511	511	0
Coppabella	ESS Compass Group - Moorvale Terowie Accommodation Village	548	796	248
Coppabella	Civeo Coppabella (formerly the Mac)	3,048	3,048	0
Coppabella	QRI Services - Coppavillage Accommodation Centre MS	235	300	65
Coppabella	Martoo Consulting	0	510	510
Coppabella	Picardy Station Contractors Camp (removed from site)	0	1,058	1,058
COPPABELLA TOTAL		3,831	5,712	1,881
Dysart	BMA Dysart Village MS	430	691	261
Dysart	Lake Vermont Village MS	637	637	0
Dysart	Civeo Dysart Village (formerly the Mac)	1,798	1,932	134
Dysart	Stayover by Ausco	410	410	0
DYSART TOTAL		3,275	3,670	395
Glenden	ESS Compass Group - Kerlong Village	662	800	138
Glenden	Newlands SPQ #1 (Kurrajong Street) MS	483	483	0
Glenden	Newlands SPQ #2 (Usher Terrace) MS	60	60	0
Glenden	Newlands SPQ flats and units MS	244	244	0
Glenden	Stuart Terrace Complex MS	90	90	0
Glenden	Qcoal (Byerwen) MS	0	350	350
GLENDEN TOTAL		1,539	2,027	488
Middlemount	Spotless - Foxleigh Village MS	230	275	45
Middlemount	Civeo Middlemount Village (formerly the Mac)	816	1,200	384
Middlemount	Spotless - Capcoal Village MS	1,170	1,170	0
Middlemount	Vitrinite Village of Middlemount	84	84	0
MIDDLEMOUNT TOTAL		2,300	2,729	429

Town	Camp	Existing beds	Total beds approved	Potential additional capacity
Moranbah	Moranbah SPV BMA Village (Moranbah Accommodation Village) MS	567	567	0
Moranbah	Curtin House (closed but rooms remain at site) MS	62	62	0
Moranbah	Ausco	0	546	546
Moranbah	Civeo Mine Accommodation Village, Acacia Street (formerly MAC)	1,240	1,240	0
Moranbah	Civeo Mine Accommodation Village, Railway Station Road (formerly MAC)	0	3,258	3,258
Moranbah	Spotless - Grosvenor Village Moranbah North	498	498	0
Moranbah	Buffel Village Caval Ridge MS	1,442	1,945	503
Moranbah	Morris Corporation	52	52	0
Moranbah	Moranbah Smart Stay Villages	144	144	0
Moranbah	Leichardt Accommodation Village	540	540	0
Moranbah	Coal Country Caravan Park	0	486	486
Moranbah	Red Hill Mine	0	3,000	3,000
Moranbah	ESS Compass Group - Eureka Village Camp (MS)	1,486	1,486	0
Moranbah	Lancewood (decommissioned)	0	200	200
Moranbah	MCG Quarry MS	80	80	0
MORANBAH TOTAL		6,111	14,104	7,993
Nebo	Civeo Nebo Village	490	1,504	1,014
Nebo	Nebo Junction Accommodation Village	250	586	336
Nebo	Sodexo - North Goonyella Camp (Blackdown Accommodation Village) MS	445	445	0
NEBO TOTAL		1,185	2,535	1,350
Total Beds		18,752	31,288	12,536

Source: IRC Data, 2018
NB:
MS means Mine Specific, i.e. not for general access
Total approved beds include existing beds
Picardy Station Contractors Camp was removed from this list as whilst it is approved for 1.000+ units, there are no accommodation units available and its status unknown.
BMA's Curtin House is currently closed and would require significant upgrades to remain competitive with other villages in the area. Council's data included Daunia Mine Village which is not an approved facility.
The Caval Ridge Fly Camp was decommissioned and removed from site and will not be reinstated as the site will be adversely affected by dust.

Table A-3 Health indicators

Indicators	Year	Isaac LGA	Mackay LGA	Queensland
% Children developmentally vulnerable on two or more domains	2015	9.3	12.4	14.0
Modelled estimate ASR per 100				
People 18+ years who did unpaid voluntary work in the last 12 months through an organisation	2014	33.1	27.0	26.5
People 18+ years who are able to get support in times of crisis from persons outside the household	2014	92.8	93.4	93.0
People 18+ years who felt very safe/safe walking alone in local area after dark	2014	61.8	46.8	50.9
People 18+ years who disagree/strongly disagree with acceptance other cultures	2014	5.8	7.7	5.7
People 18+ years who felt in the last 12 months, they felt that they had experienced discrimination or have been treated unfairly by others	2014	17.3	16.9	18.0
People 18+ who experienced a barrier to accessing healthcare when needed it in the last 12 months, with main reason being cost of service	2014	2.2	3.1	2.7
People 15+ with fair or poor self-assessed health	2014-15	17.4	16.4	15.4
People 18+ with mental or behavioural problems	2011-12	12.5	13.4	14.4
People 18+ with Respiratory system diseases	2011-12	25.6	26.7	5.1
Composite indicator of persons aged 18+ years with at least one of four risk factors (current smokers, high risk alcohol, obese, no or low exercise in the previous week)	2014-15	86.5	82.6	79.0
People 18+ with high blood pressure	2014-15	28.2	24.2	23.4
People 18+ who were obese	2014-15	37.4	34.0	29.3
People 18+ with risky alcohol consumption (2+ standard drinks per day)	2014-15	22.7	19.4	17.2
People 18+ with no or low level exercise in previous week	2014-15	73.5	71.7	67.9
Hospital Admissions by Principal Diagnosis, modelled estimate ASR per 100,000				
People admitted to public hospital for mental health related conditions	2012-13	545.1	856.9	796.1
People admitted to public hospital for all cancers	2012-13	587.5	1,224.3	3,027.8
People admitted to all hospitals for respiratory disease	2012-13	1,789.7	1,927.5	1,919.0
People admitted to all hospitals for circulatory system disease	2012-13	1,732.5	2,796.6	2,445.2
People admitted to all hospitals for injury, poisoning, and other external causes	2012-13	3,528.2	3,199.9	2,953.9
People admitted to public hospital for infectious, parasitic diseases	2012-13	579.7	401.0	553.2

Indicators	Year	Isaac LGA	Mackay LGA	Queensland
Premature mortality Deaths from road traffic injuries, 0 to 74 years	2010-14	13.4	9.7	5.8
Premature mortality Deaths from suicide and self-inflicted injuries, 0 to 74 years	2010-14	9.7	16.4	13.6

Source: Torrens University Public Health Information Development Unit. 2017.

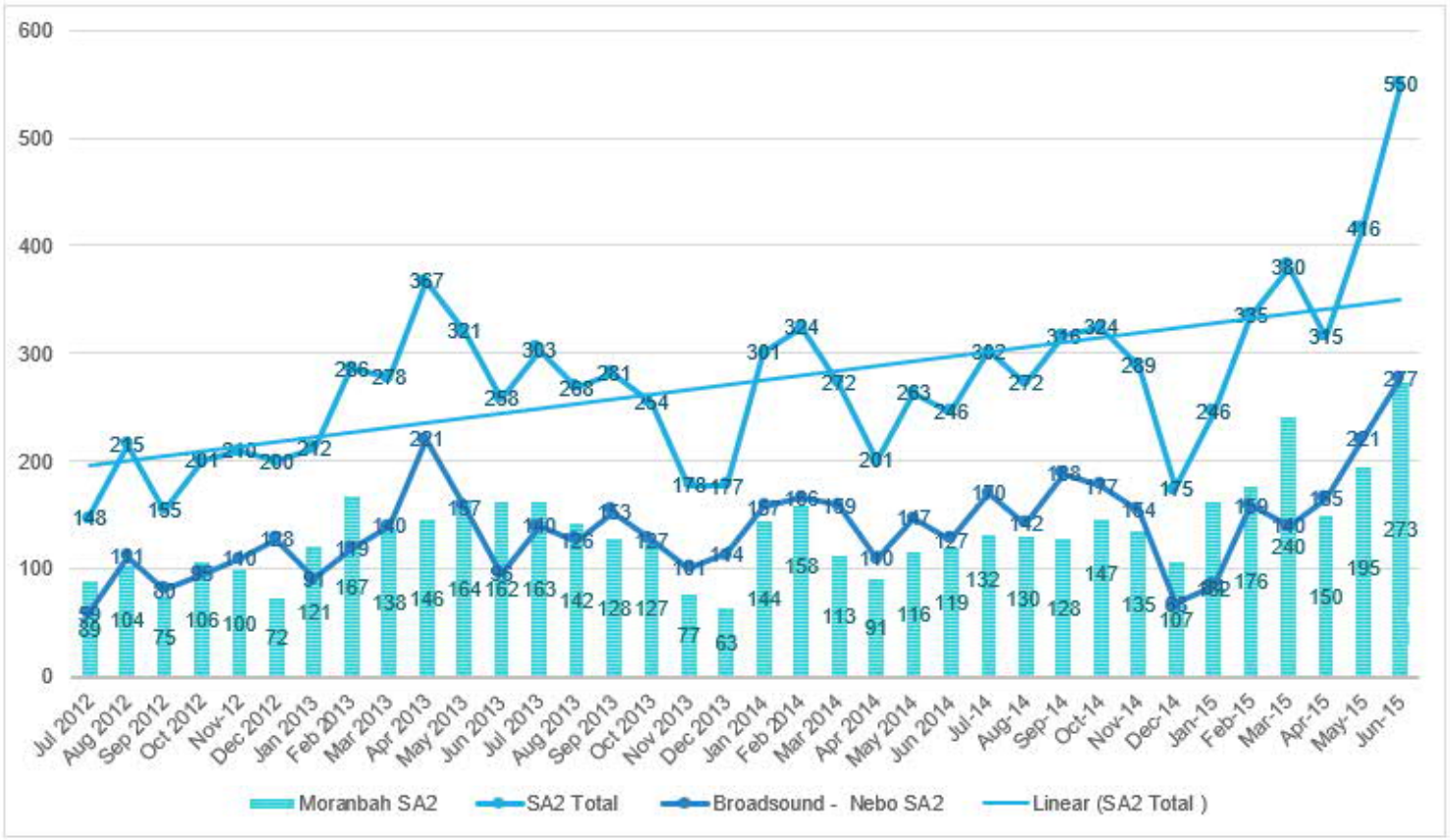


Figure A-2 No. of specialised mental health service contacts by month and SA2, Jul 2012-Jun 2015 (Queensland MHADC)

Source: Queensland Health, Queensland Government, Mental Health Activity Data Collection (MHADC) (https://data.qld.gov.au/dataset/mental-health-activity-data-collection-mhadc), licensed under Creative Commons Attribution (http://creativecommons.org/licenses/by/3.0/au/) sourced on 08 May 2017

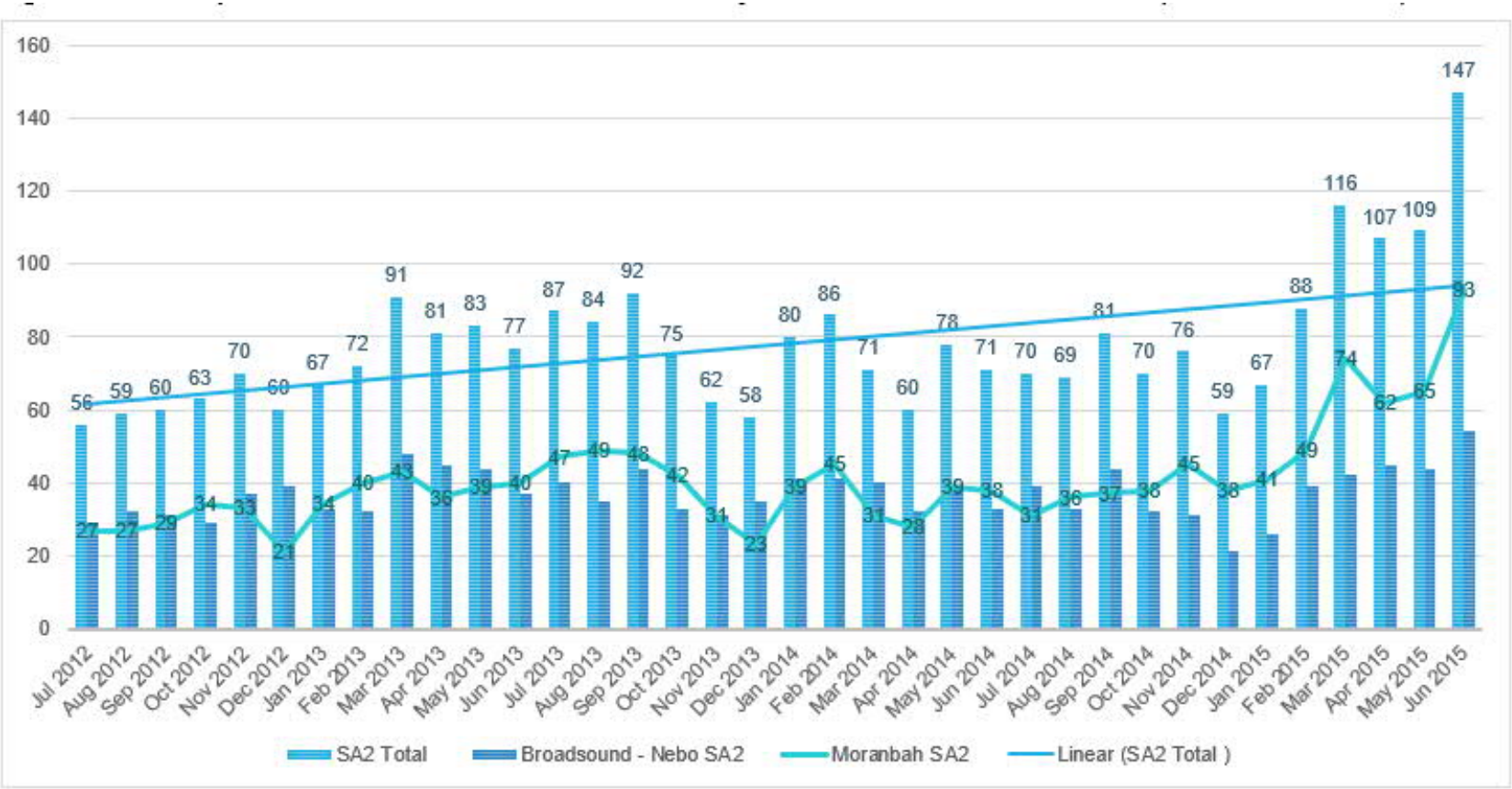


Figure A-3 No. of specialised mental health service consumers by month and SA2, Jul 2012-Jun 2015 (Queensland MHADC)

Source: Queensland Health, Queensland Government, Mental Health Activity Data Collection (MHADC) (https://data.qld.gov.au/dataset/mental-health-activity-data-collection-mhadc), licensed under Creative Commons Attribution (http://creativecommons.org/licenses/by/3.0/au/) sourced on 08 May 2017

Table A-4 Changes in employment numbers by industry

Industry	Isaac 2011	Isaac 2016	Change 2011-16
Agriculture, Forestry and Fishing	1,032	1,041	9
Mining	4,763	3,757	-1,006
Manufacturing	335	297	-38
Electricity, Gas, Water and Waste	100	109	9
Construction	757	346	-411
Wholesale Trade	223	130	-93
Retail Trade	702	510	-192
Accommodation and Food Services	769	650	-119
Transport, Postal and Warehousing	440	401	-39
Information Media and Telecommunications	35	19	-16
Financial and Insurance Services	75	30	-45
Rental, Hiring and Real Estate	175	102	-73
Professional, Scientific and Technical	191	143	-48
Administrative and Support Services	362	355	-7
Public Administration and Safety	382	406	24
Education and Training	632	657	25
Health Care and Social Assistance	435	386	-49
Arts and Recreation Services	35	55	20
Other Services	344	308	-36
Inadequately described/Not stated	274	262	-12
Total	12,069	9,972	-2,097

Source: ABS Census 2016 Working Persons Profile 2011 and 2016, Isaac and Mackay LGAs. Based on count of usual residents.

Table A-5 Occupational groups, Isaac and Mackay LGA, 2016

Occupation	Isaac LGA		Queensland
	No.	%	%
Managers	1,291	12.9	12.1
Professionals	1,063	10.7	19.8
Technicians and trades workers	2,067	20.7	14.3
Community and personal service workers	606	6.1	11.3
Clerical and administrative workers	869	8.7	13.6
Sales workers	467	4.7	9.7
Machinery operators and drivers	2,364	23.7	6.9
Labourers	1,112	11.2	10.5
Total	9,972	100	100

Source: QGSO Regional Profiles based on ABS Census 2016 second release data. The total includes inadequately described and not stated responses.

Table A-6 Industry of employment and specialisation, 2016

Industry	Isaac LGA			Qld.
	No.	%	Specialisation ratio	%
Agriculture, forestry & fishing	872	6.1	1.61	2.8
Mining	6,024	42.0	7.66	2.3
Manufacturing	452	3.2	0.44	6.0
Electricity, gas, water & waste	132	0.9	0.88	1.1
Construction	659	4.6	0.69	8.9
Wholesale trade	162	1.1	0.27	2.6
Retail trade	746	5.2	0.47	9.9
Accommodation & food services	703	4.9	0.73	7.4
Transport, postal & warehousing	608	4.2	0.63	5.1
Information media & telecomms	36	0.3	0.41	1.2
Financial & insurance services	109	0.8	0.49	2.5
Rental hiring & real estate	143	1.0	0.55	2.0
Professional, scientific & technical	303	2.1	0.47	6.2
Administrative and support services	439	3.1	1.14	3.5
Public admin & safety	410	2.9	0.58	6.5
Education and training	770	5.4	0.66	9.0

Industry	Isaac LGA			Qld.
Health care & social assistance	958	6.7	0.54	13.0
Arts & recreation	53	0.4	0.42	1.6
Other services	336	2.3	0.44	3.9
Total(a)	14,328	100.0	1.0	100.0

Source: ABS Census of Population and Housing – Workforce Profile

Table A-7 Industry of employment, Mackay and Central Queensland Regions

Industry	Mackay SA4		Central Queensland		Queensland	
Agriculture, Forestry and Fishing	4,348	5.5%	4,982	5.1%	60,608	2.8%
Mining	11,300	14.4%	8,538	8.7%	49,997	2.3%
Manufacturing	4,345	5.5%	7,105	7.3%	128,787	6.0%
Electricity, Gas, Water and Waste Services	736	0.9%	2,534	2.6%	23,883	1.1%
Construction	5,449	7.0%	8,032	8.2%	191,338	9.0%
Wholesale Trade	2,359	3.0%	2,389	2.4%	56,370	2.6%
Retail Trade	7,259	9.3%	9,335	9.6%	211,778	9.9%
Accommodation and Food Services	6,429	8.2%	6,591	6.7%	156,670	7.3%
Transport, Postal and Warehousing	4,959	6.3%	5,714	5.9%	108,083	5.1%
Information Media and Telecommunications	397	0.5%	532	0.5%	25,265	1.2%
Financial and Insurance Services	860	1.1%	1,105	1.1%	54,286	2.5%
Rental, Hiring and Real Estate Services	1,223	1.6%	1,473	1.5%	42,500	2.0%
Professional, Scientific and Technical Services	2,789	3.6%	3,842	3.9%	133,652	6.3%
Administrative and Support Services	2,678	3.4%	2,798	2.9%	75,336	3.5%
Public Administration and Safety	3,256	4.2%	5,406	5.5%	140,164	6.6%
Education and Training	5,557	7.1%	8,759	9.0%	192,143	9.0%
Health Care and Social Assistance	7,146	9.1%	10,248	10.5%	276,945	13.0%
Arts and Recreation Services	622	0.8%	744	0.8%	33,667	1.6%
Other Services	3,488	4.4%	3,978	4.1%	83,470	3.9%
Inadequately described/Not stated	3,182	4.1%	3,554	3.6%	91,505	4.3%
Total	78,391	100.0%	97,655	100.0%	2,136,455	100.0%

Table A-8 Indigenous Labour force status Employment, Mackay and Central Queensland Regions

Labour force status	Mackay SA4	Central Queensland SA4
Total labour force	3,310	4,487
Employed	2,665	3,469
Unemployed	648	1,018
Not in the labour force	1,762	3,276
Labour force status not stated	98	181
% Unemployment	19.6	22.7
% Labour force participation	64.0	56.5

Table A-9 Reported number of coal mining jobs, September 2017 – March 2018

Open cut*	Nearest town	1 September 2017	1 March 2018	6-month Change
Byerwen Mine	Glenden	188	451	263
Capcoal Surface Coal Mine	Middlemount	664	751	87
Caval Ridge Mine	Moranbah	1,505	2,041	536
Clermont Coal Mine	Clermont	612	616	4
Coppabella Mine	Coppabella	562	519	-43
Daunia Mine	Moranbah	780	796	16
Foxleigh Mine	Middlemount	469	469	0
Goonyella Riverside Mine	Moranbah	2,049	2,166	117
Hail Creek Mine	Glenden	1,577	1,658	81
Isaac Plains	Moranbah	201	165	-36
Lake Vermont Mine	Dysart	828	734	-94
Meteor Downs South	Nebo	0	26	26
Middlemount Mine	Middlemount	575	569	-6
Millennium Open Cut Mine	Coppabella	493	464	-29
Moorvale Mine	Nebo	335	398	63
Newlands Queensland	Glenden	728	697	-31
Norwich Park Mine	Dysart	25	58	33
Oaky Creek Surface Operations	Middlemount/Tieri	175	205	30
Peak Downs Mine	Moranbah	1,816	1,767	-49

Open cut*	Nearest town	1 September 2017	1 March 2018	6-month Change
Poitrel Mine	Moranbah	478	520	42
Saraji Mine	Dysart	1,749	1,683	-66
South Walker Creek Mine	Nebo	730	650	-80
Total Open Cut		16,539	17,403	864
Underground Mines*	Nearest town		No. of workers	
Broadmeadow Mine	Moranbah	701	713	12
Carborough Downs Coal Mine	Moranbah	460	535	75
Grasstree Mine	Middlemount	727	833	106
Grosvenor Coal Mine	Moranbah	693	692	-1
Moranbah North Mine	Moranbah	830	950	120
North Goonyella Mine	Moranbah	462	571	109
Oaky North Mine	Middlemount/Tieri	460	594	134
Total Underground		4,333	4,888	555
Total all nearby mines		20,872	22,291	1,419

Source: Business Queensland 2018. Mines with more than 20 employees at 31 March 2018.

Annex B: Supporting Information: Policy Framework

Table B-A provides a current summary State policy directions and strategies that are relevant to the scope of the SIA (particularly workforce diversity, education and training, business and industry development, community wellbeing and development, partnership and investment).

Table B-A State Policy Directions relevant to SIA

Strategy	Summary
Social Development	
Queensland Women's Strategy 2016-21	Outlines commitments and actions across government, business and the community to achieve gender equality in Queensland. The Strategy's four priority areas include participation and leadership, economic security, safety and health and wellbeing.
Women in Mining and Resources (WMIRQ)	Volunteer group providing support, mentoring and encouragement to women who are working in, studying for or taking a break from the minerals and energy sectors. WIMARQ is supported by The Queensland Resources Council, and with funding from the Queensland Government's Women in Resources Strategy 2013-16.
Queensland Youth Strategy 2016	A strategy informed by young people, focused on providing support at four building blocks levels: 1) supporting those most vulnerable; 2) improving access too safe, accessible and affordable homes; 3) healthy futures through good mental health and healthy lifestyles; 4) educating to employment.
Building our Regions	Funding for critical infrastructure in regional areas, whilst also supporting jobs, fostering economic development, and improving the liveability of regional communities. Projects funded have offered communities benefits such as: • securing water supply • increasing flood immunity • improving recreational and tourism offerings • extending accessibility to remote areas • enabling future industry • facilitating high-speed internet and telecommunications • supporting liveability.
Education and Training	
Jobs Queensland 2016	Independent statutory authority advising Government on future skills requirements, workforce planning and development issues. Job Queensland's 'Positive Futures: Apprenticeships and Traineeships in Queensland' discussion paper notes
Advancing skills for the future (Consultation Draft)	A strategy responding to changing global trends and aim to ensure 'all Queenslanders are able to access – at any stage in their lifetime and career – high quality training that improves their life prospects and supports economic growth'.
Skilling Queenslanders	This initiative provides training to people who are under-utilised or under-employed in the labour market, and building the skills of young people, Aboriginal and Torres

Strategy	Summary
for Work	Strait Islander people, people with a disability, mature-age job seekers and people from culturally and linguistically diverse backgrounds.
Queensland Apprentice and Trainee support programs	Programs include: 1) Registered Trades Skill Pathway and Trade Skills Assessment and Gap Training which help existing workers to gain trade qualifications. 2) User Choice which funds the training of eligible apprentices and trainees, including school-based participants. 3) Industry Pre-Apprenticeship Programs which work in partnership with industry to develop tradespeople in priority trade occupations; and 4) Work Start which provides a one-off payment of $10,000 to private sector employers who employ a recent participant of particular Skilling Queenslanders for Work programs into a traineeship or apprenticeship.
Back to Work Regional Employment Package	Aimed at increasing business confidence and employment prospects for regional jobseekers, this initiative includes 1) support payments of $10,000 -20,000 for employers to take on jobseekers in regional Queensland; 2) training for eligible jobseekers to gain the skills including Certificate 3 qualifications; and 3) Back to Work teams working with employers/ jobseekers.
Queensland Minerals and Energy Academy (QMEA)	An industry-schools partnership between the Queensland resources sector (represented by QRC) and Queensland Government through the Gateway Industry Schools Program, which offers a range of programs to broaden students' and teachers' knowledge of the sector and provide a talent pipeline of employees into the resources sector and related science, technology, engineering and maths (STEM) industries.
Advancing Aboriginal and Torres Strait Islander Education and Training (Consultation Draft)	A strategy to drive better education outcomes for Aboriginal and Torres Strait Islander communities. Highlights from the draft action plan with relevance to the SIA include 1) prioritising participation of Aboriginal and Torres Strait Islander people under the Annual VET Investment Plan to engage in training that offers social and economic benefits; 2) funding for Aboriginal and Torres Strait Islander-specific projects under Skilling Queenslanders for Work.
Business and Industry	
Accessing supply chain opportunities (ASCO)	Delivered by the Department of State Development, the ASCO program is designed to help suppliers (and project proponents) to: 1) address issues in the supply chain; 2) develop a better customer focus; 3) understand and respond to major project supply chain requirements; 4) become more aware of major project opportunities; and 5) submit complete tenders.
Moving Ahead Strategy 2016-22	The Moving Ahead strategy includes the following priorities: 1) Build a more skilled and diverse workforce; 2) Focus on youth and plan for future success; 3) Build our partnership with industry; 4) Increase entrepreneurship, business growth /innovation; 5) Overcome barriers/realise opportunities to completion.
Industry capacity building	QRC has partnered with the Queensland Government to deliver the 'Traditional Owner Governance and Prosperity' program which supports traditional owners to

Strategy	Summary
projects	develop visions and plans. QRC is also collaborating with the business schools of University of Queensland (UQ) and University of New South Wales (UNSW) to support Indigenous businesses to build the capability to expand their businesses, particularly in the resources sector. This is being delivered through two-day workshops covering accounting, marketing, finance and strategy.