



PEMBROKE

Olive Downs Coking Coal Project
Draft Environmental Impact Statement

Appendix H
Social Impact
Assessment

OLIVE DOWNS COKING COAL PROJECT

Social Impact Assessment



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Appendix A: Supporting Data

Acronyms and abbreviations

Abbreviation	Term
ABS	Australian Bureau of Statistics
ASGS	Australian Statistical Geography Standard
BMA	BHP Billiton Mitsubishi Alliance
BMAAV	BMA Alliance Accommodation Village
BPAV	Buffel Park Accommodation Village
CHMP	Cultural Heritage Management Plan
CHPP	Coal Handling and Preparation Plant
CIR	Code Industry Report
Cr.	Councillor
CSRSM	Centre for Social Responsibility in Mining (University of Queensland)
CTEC	Coalfields Training Excellence Centre
DATSIP	Department of Aboriginal and Torres Strait Islander Partnerships (Queensland)
DES	Department of Environment and Science (Queensland)
DFV	Domestic and Family Violence
DHPW	Department of Housing and Public Works (Queensland)
DIDO	Drive-in, Drive-out
DILGP	Department of Infrastructure Local Government and Planning (Queensland)
DSDMIP	Department of State Development Manufacturing Infrastructure and Planning (Queensland)
DCSG	Dysart Community Support Group Association Inc.
DTMR	Department of Transport and Main Roads (Queensland)
EDQ	Economic Development Queensland
EIS	Environmental Impact Statement
ELAM	Emergency Long Term Accommodation (Moranbah)
EPA	Environmental Protection Act 1994 (Queensland)
ERP	Estimated Resident Population
FIFO	Fly-in, Fly-out
FTE	Full Time Equivalent
GP	General Practitioner
ha	Hectares
HHS	Hospital and Health Service
hrs	Hours
IAHT	Isaac Affordable Housing Trust
IAIA	International Association for Impact Assessment
ICCM	International Council on Mining and Metals
IRC	Isaac Regional Council
IRSD	Index of Relative Socio-economic Disadvantage
km	Kilometres
LGA	Local Government Area

Abbreviation	Term
LOM	Life of Mine
LOTE	Language other than English
MCA	Minerals Council of Australia
MDSS	Moranbah and District Support Services Association Inc.
MHADC	Mental Health Activity Data Collection (Queensland Government)
MIW	Mackay, Isaac and Whitsunday
MLA	Mining Lease Application
MRC	Mackay Regional Council
Mtpa	Million tonnes per annum
NRW	Non-resident workers
OCG	Office of the Coordinator-General
Pembroke	Pembroke Olive Downs Pty Ltd
PDA	Priority Development Area
PHIDU	Public Health Information Development Unit
PM10	Refers to airborne particles less than 10 micrometres in diameter
QAS	Queensland Ambulance Service
QFES	Queensland Fire and Emergency Service
QGSO	Queensland Government Statistician's Office
QPS	Queensland Police Service
QRC	Queensland Resources Council
RIN	Resource Industry Network (Mackay)
SA1 - 4	Statistical Area Level 1 - Statistical Area Level 4 (ABS ASGS)
SCL	Strategic Cropping Land
SDPWO Act	State Development and Public Works Organisation Act 1971 (Queensland)
SEIFA	Socio-economic Index for Areas
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SSC	State Suburb (ABS ASGS)
SSRC Act	Strong and Sustainable Resource Communities Act 2017 (Queensland)
The Code	Queensland Resources and Energy Sector Code of Practice for Local Content 2013
the Project	Olive Downs Project
ToR	Terms of Reference
ULDA	Urban Land Development Authority
UDC	Utah Development Company
WAV	Workforce Accommodation Village
\$/million	Million dollars

Executive Summary

This Social Impact Assessment (SIA) was prepared as part of the Environmental Impact Statement (EIS) for the Olive Downs Coking Coal Project (the Project). The Project is proposed by Pembroke Olive Downs Pty Ltd (Pembroke) and would be located approximately 40 kilometres (km) south-east of Moranbah and 25 km north-east of Dysart, within the Isaac Regional Council Local Government Area (Isaac LGA).

The scope for the SIA was developed with regard to statutory requirements and in particular the *Strong and Sustainable Resource SSRC Act 2017* and the Coordinator-General's *Social Impact Assessment Guidelines* (July 2013 and March 2018).

The potentially affected communities were defined as including Moranbah, Dysart, Middlemount, Nebo and Coppabella, with a comprehensive baseline and impact assessment provided for these towns and the Isaac LGA.

Moranbah, Dysart and Middlemount have strong identities as mining towns, whilst Nebo has a more rural identity but with mining also an influence, and Coppabella has a strong identity as a railway town.

The Isaac LGA experienced a decrease in population during 2011-2016, and 34.5% of the LGA's dwellings were unoccupied in 2016. Whilst this is in line with population fluctuations over the past twenty years, reversal of the residential population decline is a local priority.

The Project would require a workforce of 500-700 people for construction of the Olive Downs South domain and associated infrastructure (2019-2021), with a further 300-500 construction jobs available from 2027. An operations workforce of 480 people in Year 1 (2020) and 960 people by Year 2 (2021) is expected, increasing to a potential 1,300 people in 2033.

As the Project will draw personnel from the Isaac LGA and the broader region, labour force data for the Isaac LGA, Mackay LGA, Mackay Isaac Whitsunday (MIW) region and Central Queensland region are considered. Employees from outside the region would be encouraged to live in local towns including Moranbah, Dysart, Middlemount and Nebo. Non-local employees who choose to commute would stay in workforce accommodation villages in Coppabella or Moranbah, or in rental accommodation, subject to availability. Demand for affordable and social housing in the local area is largely being met, however local housing stocks (and tenants) are vulnerable to sudden and cumulative demands.

Consultation with local communities and stakeholders indicated that they were generally very positive about the Project, with a range of employment and population-based benefits identified. Key issues raised included locally-based employment, encouragement of Project-led population growth, the importance of local business participation in Project supply chains, and the need for co-operation with stakeholders to maintain the capacity of social infrastructure.

Potentially impacted communities were identified as Moranbah, Dysart, Middlemount and Nebo, with employment opportunities and benefits for businesses potentially extending to other towns in the Isaac LGA as a whole. Coppabella, which is oriented towards rail operations and is unlikely to attract or supply significant numbers of personnel, is unlikely to be impacted.

Social impacts in the Isaac LGA are likely to include:

- during construction, temporary population increases of approximately 440 FTE people during 2019-2020 and 300 FTE people during 2027, with consequent demands for local health services, emergency services, Council services and facilities, and the road network;
- population increases in the Isaac LGA during operations, in the order of:
 - at least 300 people and up to 600 people in 2020;
 - up to 1,300 people by 2032; and
 - up to 1,755 people during the first 14 to 15 years of operation;
- consequent impacts on social resources during operations, including:
 - potential for Project-induced inflation of housing costs if additional housing stock is not made available;
 - increased demand for health service provision, school enrolments, childcare places and community services; and
 - labour draw from local businesses to the Project.

Social benefits are likely to include:

- creation of an estimated 500 – 700 construction jobs in 2019-20 and 300 – 500 construction jobs around 2027;
- the availability of 480 operational jobs in 2020 and 960 jobs by 2021, with potential for an increase to 1,300 jobs in 2033, which will be ongoing until around 2050, and would then decline;
- locally-based employment for Isaac LGA residents, including a focus on gender equity;
- employment and training opportunities for Indigenous people;
- in-migration of Project personnel and families to the Isaac LGA, contributing to population growth and community vitality;
- benefits for local and regional businesses from both Project supply opportunities and expenditure by Project personnel and households; and
- potential for supply opportunities for Indigenous businesses.

The Project is likely to support social resilience and sustainability in Isaac LGA communities by:

- offering long term, locally-based employment and enabling skills development;
- enabling population growth and stability;
- supporting workforce integration with local communities; and
- increasing demand for local and regional businesses' offerings.

Potential threats to social conditions, particularly in the context of cumulative impacts, include housing cost inflation, the need for increased social infrastructure capacity, and labour draw from local and regional businesses.

The Project's Social Impact Management Plan (SIMP) aims to avoid or mitigate social impacts and maximise the Project's benefits for potentially impacted communities. The SIMP includes a program to monitor and report on the delivery and effectiveness of management strategies, and a process for review and refinement of the SIMP as necessary.

1 Introduction

Pembroke proposes to develop the Olive Downs Project (the Project), a metallurgical coal mine and associated infrastructure located approximately 40 km south east of Moranbah and approximately 25 kms north-east of Dysart, within the Isaac Regional Council Local Government Area (Isaac LGA) in Queensland.

The Project comprises the Olive Downs South and Willunga domains and associated linear infrastructure corridors (see EIS Figure 1-2). Up to 20 Million tonnes per annum (Mtpa) of run-of-mine (ROM) coal including up to 14 mtpa of product coal would be extracted over the anticipated Project operational life of approximately 79 years, with product coal to be transported by rail to the Dalrymple Bay Coal Terminal.

On 17 February 2017, the Project was declared as a 'coordinated project for which an environmental impact statement (EIS) is required' pursuant to the State Development and Public Works Organisation Act 1971. This Social Impact Assessment (SIA) has been prepared by Elliott Whiteing Pty. Ltd. as part of the EIS.

1.1 Olive Downs Project

The Olive Downs South domain is located to the south and west of the Isaac River, and the Willunga domain is located downstream of the Olive Downs South domain, to the north and east of the Isaac River. Development of the Olive Downs South domain would include:

- development (drilling, blasting and excavation) and construction of open cut mining pits and waste rock emplacement areas;
- construction and operation of:
 - mine infrastructure including ROM coal handling and crushing facilities, water and sewage treatment, sediment dams and water management equipment;
 - offices, stores/warehouse, workshops, re-fuelling facilities, power lines, generators, and communication facilities;
 - facilities for personnel including crib facilities, a bathhouse and access to health and safety services; and
- installation and operation of a Coal Handling and Processing Plant (CHPP).

Infrastructure development would include construction of:

- an access road from Annandale Road to the Olive Downs South domain infrastructure area, including a crossing of the Isaac River;
- a rail load-out facility including product coal stockpiles, construction of a new rail loop and a rail spur line to the Norwich Park Branch Railway, to transport coal to the Dalrymple Bay Coal Terminal;
- a water pipeline connecting to the Eungella pipeline network; and
- an Electricity Transmission Line (ETL).

If approved, construction of the Olive Downs South domain would commence in 2019, with first coal production planned in 2020. The coal would be mined by conventional open cut mining (e.g. excavators, dozers, front end loaders and trucks) and strip mining methods.

Development of the Willunga mining domain would likely commence around Year 9 (2027), requiring development and construction of open cut mining pits, construction of mine infrastructure, offices, stores, facilities for personnel and energy supply as for the Olive Downs South domain, and a crushing and screening plant. A second access road from the Fitzroy Developmental Road to the Willunga domain infrastructure area would also be constructed.

Crushed ROM coal from the Willunga domain would be transferred via conveyor (with an Isaac River crossing) to the CHPP at the Olive Downs South domain. Initially, the waste rock produced by the Willunga domain would be placed in out-of-pit waste rock emplacements located immediately to the south and south-west of the open cut mining area. When sufficient space is created within the mined-out areas, waste rock would be placed within in-pit waste rock emplacements at the Willunga domain.

A peak daily maximum of eight trains per day would be required to service the Project.

With a 79-year mine life, the Project would be decommissioned around 2099.

1.2 Project workforce

A construction workforce of between 500 and 700 people would be required for the Olive Downs South domain during Years 1 to 3 (anticipated as 2019-2021). Around Year 9 (2027), a construction workforce in the order of 300 to 500 people would be required to expand the Olive Downs South domain mine infrastructure area and construct the Willunga domain mine infrastructure area.

Non-local construction personnel would stay in workforce accommodation villages (WAVs) in Dysart, Coppabella or Moranbah, or in rental accommodation, subject to availability as discussed in Section 5.4.

The Project is expected to require an operational workforce of approximately 480 people in 2020 and 960 people by 2021. With production of a potential 20 Mtpa from 2033, a workforce of 1,300 would be required until around 2050.

Pembroke would recruit from within the Isaac LGA and from other Queensland regions. Employees from outside the region would be encouraged to live within local towns, including Moranbah, Dysart, Middlemount and Nebo. Some non-local employees may choose to commute to work via car, bus or plane and stay in local WAVs when they are rostered on. Whilst the Project's employment opportunities are likely to be very attractive to residents in potentially affected communities, competition for skilled mining labour is highly competitive, as discussed in Sections 4.7 and 5.2.2. The SIA has considered a range of local/non-local workforce scenarios, as detailed in Section 5.2.5.

Following 2050, as the production rate decreases, the workforce could decline by approximately 50%. The mine decommissioning workforce, when required, would include approximately 50 people toward the end of the life of the Project.

1.3 Purpose of SIA

‘Social impact assessment is a process, not a product’¹.

The International Association for Impact Assessment’s principles for SIA define it as ‘the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions’².

The objectives of this SIA are to:

- define the SIA’s study area and the scope of assessment, having regard to the EIS Terms of Reference (ToR), Strong and Sustainable Resource Communities (SSRC) Act (2017), and the Coordinator-General’s SIA guidelines;
- document the results of engagement with local communities and stakeholders regarding social conditions, the Project’s potential social impacts and benefits, and impact management;
- ensure the baseline, assessment and mitigations are focussed on the impacts and benefits that are likely and would affect social conditions;
- provide a comprehensive baseline of the social environment in potentially affected communities, against which change can be assessed;
- provide a detailed assessment of the Project’s positive and negative impacts on the social environment, for each Project stage;
- evaluate the significance of impacts and benefits for social conditions;
- provide sufficient information to enable local and State agencies to determine effects on their operations or planning;
- develop management measures which avoid or mitigate social impacts, and optimise the Project’s opportunities and benefits for local communities; and
- provide a monitoring and reporting strategy to support adaptive management of social impacts.

Whilst a SIA is usually produced to support Project assessment, the key aim is to support the Project to have positive social outcomes and contribute to socially sustainable development. As social environments are complex and dynamic, this requires an ongoing process of stakeholder engagement, impact management and monitoring throughout the Project’s life.

¹ Vanclay, F. et. al. 2015.

² Vanclay, F. 2003.

2 Scope

The scope for this SIA has been developed with regard to:

- statutory requirements;
- the EIS Terms of Reference (ToR);
- the Coordinator-General's *Social impact assessment guideline* (July 2013) and *Social impact assessment guideline* (March 2018); and
- the Isaac LGA's social characteristics and community values.

2.1 Statutory requirements

Queensland legislation of relevance to the SIA is outlined below.

2.1.1 State Development and Public Works Organisation Act 1971

The *State Development and Public Works Organisation Act 1971* (SDPWO Act) aims to facilitate 'timely, coordinated and environmentally responsible infrastructure planning and development to support Queensland's economic and social progress'³.

The SDPWO Act provides for the appointment of a Coordinator-General representing the Queensland Government, and gives the Coordinator-General powers to (among other things) manage major infrastructure projects, declare a project to be a 'coordinated project', coordinate environmental impact assessment of the project, and evaluate proposed changes to coordinated projects.

As the Project was declared as a 'coordinated project for which an environmental impact statement is required', Pembroke must prepare a draft EIS which addresses the ToR to the satisfaction of the Coordinator-General. Draft ToR for the EIS were issued on 8 April 2017, and after public and agency comment, were finalised on 28 June 2017.

The EIS ToR for the SIA require consistency with relevant policies, standards and guidelines in place at the time of its delivery, including the Coordinator-General's *Social impact assessment guideline (2018)*⁴ and the *Strong and Sustainable Resource Communities Act* (SSRC Act).

The ToR detail the Coordinator-General's requirements for the SIA, which include, in summary:

- definition of the Project's SIA study area;
- a profile of key stakeholders and an explanation of how they were engaged;
- an overview of State government legislation and policies and priorities which complement the mitigation measures for the project's social impacts;

³ Queensland Government (Office of Queensland Parliamentary Counsel). 2017. *State Development and Public Works Organisation Act 1971*

⁴ Queensland Department of State Development. 2018.

- a social baseline study of potentially impacted communities within the SIA study area, including:
 - physical and social infrastructure, settlements and land use patterns;
 - population characteristics;
 - local and regional housing markets;
 - community and health infrastructure, services and facilities;
 - social values including community cohesion, wellbeing and sense of community;
 - Indigenous social and cultural characteristics; and
 - existing legacy issues and cumulative impacts;
- identification of potential social impacts and their likely significance at the local and regional level, including:
 - population and demographic changes;
 - workforce (construction and operation) and workforce accommodation;
 - housing;
 - lifestyles and amenity;
 - community values;
 - social infrastructure;
 - the health and social/cultural wellbeing of families and communities; and
 - 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;
- proposed enhancement and mitigation/management measures and a proposed monitoring and reporting framework which address:
 - community and stakeholder engagement;
 - workforce management;
 - housing and accommodation;
 - health and community wellbeing; and
 - local business and industry content.

The SIA methodology is detailed in Section 2.3.

2.1.2 Strong and Sustainable Resource Communities Act

The Strong and Sustainable Resource Communities Act (SSRC Act) commenced on 30 March 2018 and sets out consistent mandatory requirements for SIA under the SDPWO Act and *Environmental Protection Act 1994* (EP 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 FIFO workforce arrangements on operational large resource projects;
- prevention of discrimination against locals in the future recruitment of workers; and
- the requirement for SIA.

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 environmental authority under the EP Act, and has a workforce of 100 or more workers, or a smaller workforce as decided by the Coordinator-General⁵.

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-General⁶. 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 provides that the Coordinator-General may nominate a large resource project as a project for which persons employed during construction phase are 'workers' for the purpose of the SSRC 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. Sections 9, 10 and 11 of the SSRC Act provide the regulatory framework for SIA, including:

- core matters under the following themes:
 - 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 large 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.

⁵ Queensland Government (Office of Queensland Parliamentary Counsel). 2018b. Strong and Sustainable Resource Communities Act 2017.

⁶ *Ibid.*

The Project is a large resource project for which nearby regional communities have not yet been published. Potentially affected communities were identified in consultation with the Office of the Coordinator-General (OCG) and Isaac Regional Council (IRC), as detailed in Section 2.3.2 and Section 3.3.1.

2.1.3 SIA Guideline

The SSRC Act requires that a SIA for a large resource project includes the matters provided for in the SIA Guideline as published on the Coordinator-General's website, which is a statutory instrument under the SSRC Act. This assessment has been conducted in accordance with the Coordinator-General's *Social Impact Assessment Guideline* (July 2013)⁷ and the *Social Impact Assessment Guideline* (March 2018), including:

- consultation with the OCG and IRC regarding the geographic extent and scope of impacts to be assessed;
- identification of the scope of potentially affected communities, taking into account the Guideline's detailed considerations (Section 2.3.1 of the SIA Guideline);
- identification of SIA stakeholders, provision of an inclusive process for consulting with them, and provision of the results of consultation;
- a social baseline study of potentially affected communities, including history, Indigenous communities, key events that have shaped economic and social development, resilience and social trends;
- consideration of the SIA Guideline's key matters, and assessment of impacts and opportunities across all relevant matters, for each stage of the project lifecycle, including cumulative impacts;
- consideration of other EIS matters which may affect the social environment; and
- provision of a Social Impact Management Plan (SIMP) which incorporates management strategies for the five key matters, and includes processes to ensure the effectiveness of management measures is monitored, and ineffective measures are amended.

2.1.4 Planning Act 2016

The *Planning Act 2016* (Qld) commenced implementation on 3 July 2017, replacing the *Sustainable Planning Act 2009* and establishing a new planning system which encompasses plan making, development assessment and dispute resolution⁸.

Relevant principles of the Planning Act (Ch. 3 section 3) which have guided this assessment include: 'the maintenance of the cultural, economic, physical and social wellbeing of people and communities through:

- (i) creating and maintaining well-serviced, healthy, prosperous, liveable and resilient communities with affordable, efficient, safe and sustainable development; and
- (ii) conserving or enhancing places of special aesthetic, architectural, cultural, historic, scientific, social or spiritual significance; and

⁷ Queensland Department of State Development. 2013.

⁸ Queensland Government (Office of Queensland Parliamentary Counsel). 2018a. Chapter 1

- (iii) providing for integrated networks of pleasant and safe public areas for aesthetic enjoyment and cultural, recreational or social interaction; and
- (iv) accounting for potential adverse impacts of development on climate change, and seeking to address the impacts through sustainable development⁹.

2.2 SIA study area

The SIA study area was defined with reference to the SSRC Act's definition of nearby regional communities and the SIA Guideline's requirement to consider the characteristics of potentially affected communities as part of the scoping stage, as outlined below.

Vehicle access to the Olive Downs South domain would be via a private access road from Annandale Road, and access to the Willunga domain would be via a private access road from the Fitzroy Developmental Road. Both accesses as shown in Figure 2-1 were considered in defining the potentially affected communities.

This section describes potentially affected communities in the local study area, and the regional area which may benefit from employment and/or supply opportunities.

2.2.1 Potentially affected communities

The key considerations for identifying potentially affected communities are the risk of social impacts as a result of the Project, and the likely potential for communities to benefit from the Project. Factors considered in defining the SIA scope included:

- the role, culture and identity of communities in the region;
- housing availability, growth potential and social infrastructure capacity which would attract and retain new residents;
- the availability of skilled and experienced mining industry personnel;
- the location of business who could supply the Project; and
- the likelihood of social impacts and opportunities resulting for each town.

Fatigue management requirements will limit the distance that employees can travel to and from work on a daily basis, and therefore the likelihood that they will live in or move to towns outside a one hour driving radius from the Project. The Department of Natural Resources and Mine's (DNRM) Guidance Note for Fatigue Risk Management¹⁰ 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 Queensland Government (Office of Queensland Parliamentary Counsel). 2018a. Chapter 3.

¹⁰ Department of Natural Resources and Mines, 2013.

Figure 2-1: 125 km direct radius from Project entrances



Figure 2-1

Communities nearest to the Project, and within a one hour drive, include:

- Dysart and Moranbah, which have large, skilled mining workforces, are the base for most of the LGA's social infrastructure, and have a greater choice of housing. As such, these two towns are highly likely to supply personnel to the Project, and to attract larger numbers of in-migrating Project personnel and new families;
- Middlemount, which is a smaller community with a lower level of social infrastructure provision, but has a skilled mining workforce;
- Coppabella, which is somewhat of a closed town in relation to housing availability and has a lower level of service provision; and
- Nebo, which is a small community with rural values, a relevant skills base and basic social infrastructure.

Towns within a 125 km radius but more than an hour's drive away include:

- Tieri and Capella to the south, which are within an approximate one and a half to two hour drive of the Project, and traditionally relate to mining operations in the southern Bowen Basin;
- Glenden, which is located approximately two hours north by road, and is traditionally associated with mining operations in the northerly part of the Bowen Basin;
- Clermont to the west, which is between one hour 40 minutes and two hours' drive of Project entrances; and
- Sarina, Eton, Mirani, Finch Hatton and Eungella to the north east, and the coastal villages of Koumala, Carmila and St. Lawrence, which have driving times to the Project ranging up to three hours.

These towns are likely to be a source of Drive-in Drive Out personnel for the Project, providing the benefits of long term employment and associated community wellbeing, however significant negative impacts on these towns are unlikely.

On this basis, and considering IRC and OCG input, it was considered unlikely that significant material impacts or benefits may accrue to towns other than those identified in Table 2-1. The SIA includes a detailed assessment of the social baseline in these potentially affected communities, which are shown in Figure 2-2 relative to the Project's location.

Table 2-1: SIA Study Area - Local Communities

Town	Distance to nearest Project entrance	Population (2016)
Moranbah	73 km	8,735
Dysart	67 km	2,991
Neb	90 km	753
Middlemount	70 km	1,841
Coppabella	37 km	466

Source: Driving distances estimated using google Maps. Population data sourced from ABS Census 2016.

Whilst Clermont is approximately 142 km from the nearest Project entrance and has not been assessed in detail, the Clermont community has strengths in the construction and mining support sectors which could be accessed by the Project. This is discussed in Section 4.8.

Figure 2-2 Potentially Affected Communities within SIA Study Area



Figure 2-2

2.2.2 Regional communities

The Project would be located within the Isaac Regional Council LGA (also described as the Isaac region) which encompasses 58,862 km² stretching from the Central Queensland coast to the Bowen Basin coalfields) and includes:

- the towns of Moranbah, Dysart, Middlemount, Coppabella and Nebo, Clermont and Glenden;
- rural localities including Valkyrie (east of the Project area), Mackenzie River (south of Middlemount), Kilcummin (north of Clermont) and Mistake Creek (west of Clermont); and
- the coastal villages of Carmila, St Lawrence, Clairview, Clarke Creek, Greenhill and Ilbilbie.

The Project intends that Isaac LGA communities will be integral to its supply chain, as a source of:

- employees, including both existing residents and new residents attracted by the Project;
- construction services, labour and equipment;
- supply of goods and services to the operation; and
- social infrastructure for employees and families.

A comprehensive baseline and assessment of the potential for social impacts and benefits in the Isaac region has been provided. IRC as the Local Authority is responsible for local governance, municipal management, service provision and social and economic development, and is a key stakeholder for the Project.

The Project would be located approximately 220 km by road to Mackay, the principle centre for the MIW region. Mackay is a well-developed source of employees, contract labour, supplies and services to the Bowen Basin, and is the centre to which many Isaac LGA residents go for higher-order health, retail, and service requirements.

The Isaac and Mackay LGAs are part of the Mackay Isaac Whitsunday (MIW) Region, which equates to the Australian Bureau of Statistics' (ABS) Mackay Statistical Area 4. Select data have been provided for the MIW region to support assessment of potential impacts or opportunities at the broader regional level.

The Mackay LGA and the MIW region have been considered where relevant in the SIA, particularly with respect to the labour force, business supply chains and regional social infrastructure provision. Other Queensland regions including the Central Queensland SA4 (which includes the Central Highlands, Gladstone, Banana, Livingstone, Woorabinda and Rockhampton LGAs) are also likely to be a source of Project labour, as discussed in the labour force profile.

The Project will provide economic benefits to the State of Queensland in respect to royalties, taxes and employment opportunities over the life of the mine, as assessed in the Project's Economic Impact Assessment. Queensland, along with the MIW region has been used as the comparative area for analysis of social indicators in the Project's local and regional communities.

The Isaac LGA in context with other regional communities is shown in Figure 2-3.

Figure 2-3 : Regional Setting



Figure 2-3

2.3 Methodology

Key data and information sources and the rationale for their use in this SIA are summarised in Table 2-2, followed by a description of the methodology for each SIA stage.

Table 2-2: SIA Study Area - Local Communities

Source	Inclusions	Rationale
Literature review and document analysis	<ul style="list-style-type: none"> Research papers as referenced Recent relevant SIAs IRC, MIW and State plans SSRC Act 	<ul style="list-style-type: none"> Recent relevant research and SIAs were reviewed to identify findings of relevance to the scope, baseline, assessment and SIMP. Plans and the SSRC Act outline intended outcomes for the region.
SIA engagement	<ul style="list-style-type: none"> Consultation with IRC Stakeholder interviews Community workshops Community survey 	<ul style="list-style-type: none"> Stakeholder views and knowledge are central to SIA. Local residents have extensive local knowledge and experience of social impacts. The community survey provided quantitative data on community views and issues, and enabled community feedback on the Project.
Demography	<ul style="list-style-type: none"> ABS Census Data QGSO population projections PHIDU data Data sources as referenced 	<ul style="list-style-type: none"> Use of established public and commercial data sources as part of baseline and modelling assumptions to support the SIA's rigor.

2.3.1 Literature review

A review of relevant recent research, local, regional and State plans and policies, and SIAs with a focus on the SIA study area was undertaken. Research findings were incorporated in relevant sections as referenced.

2.3.2 Stakeholder engagement

The stakeholder engagement process for the SIA aimed to ensure that all interested stakeholders could participate. The engagement program included early meetings with the OCG and IRC to seek feedback on the SIA scope, and consultation with the IRC, community members and agencies to identify social values, verify the social baseline, discuss the Project's potential impacts and benefits, and obtain input to the impact assessment and mitigations.

Stakeholders and engagement mechanisms are summarised in Table 2-3.

Table 2-3: SIA Engagement Program

Stakeholders	Engagement Strategies
SIA Unit, OCG	<ul style="list-style-type: none"> Meeting 1 (April 2017) - SIA scope and process. Meeting 2 (August 2017) to discuss preliminary findings. Meeting 3 (February 2018) to discuss draft SIA.
IRC	<ul style="list-style-type: none"> Meeting 1 (June 2017) - SIA scope and process. Meeting 2 (July 2017) - draft baseline findings, preliminary consultation results and assessment and mitigation priorities
Local community members and businesses	<ul style="list-style-type: none"> Community Survey (June –July 2017). Four community workshops (July 2017). Project Information and workshop invitations to businesses through the Moranbah Traders' Group, Dysart community networks and the Nebo Community Development Group.

Stakeholders	Engagement Strategies
Landholders	<ul style="list-style-type: none"> Pembroke sought engagement with all affected landholders within the Project area. The results of this engagement have been considered in the SIA
Social and health infrastructure providers	<ul style="list-style-type: none"> Community workshop participation (July 2017). Phone calls and interviews.
Barada Bana people	<ul style="list-style-type: none"> Pembroke undertook engagement with the Barada Bana Aboriginal Corporation, through a series of meetings on various topics. The results of this engagement have been considered in the SIA.
Queensland Health	<ul style="list-style-type: none"> Workshop participation (July 2017) - Moranbah Hospital and Middlemount Community Health Service. Interview with Dysart Hospital Director of Nursing. Interview with Queensland Health's Aboriginal and Torres Strait Islander Health Division (August 2017).
Queensland Police, Ambulance, and Fire and Emergency Services	<ul style="list-style-type: none"> Workshop participation (July), Queensland Police (Nebo and Dysart), Queensland Ambulance Service (Nebo, Moranbah and Middlemount). Queensland Fire and Emergency Service. Phone interview with Moranbah Police (August 2017).
Department of Communities, (Former) Child Safety and Disability Services (DCCSDS)	<ul style="list-style-type: none"> Phone interview (September 2017).
Department of Education and Training	<ul style="list-style-type: none"> Schools participation in community workshops. Phone interview regarding skills gaps and training initiatives (August 2017).

2.3.3 Social baseline

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

- the SIA study area's history, settlement pattern and community values;
- 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.

Social conditions such as housing access and employment availability can change rapidly in response to mining industry cycles. The monitoring program provided as part of the SIMP includes indicators to enable updated information on social conditions and identify any changes required to the SIMP as part of annual and comprehensive SIMP reviews.

The ABS Statistical Areas which correspond with local and regional communities are shown in Table 2-4. State suburbs (SSC) were chosen as the smallest statistical area in recognition that communities in this region extend beyond the urban centres and include rural localities. Codes (the ABS identifier corresponding to statistical areas) are included in the table in brackets. Of note, the Dysart, Middlemount and Nebo State SSC boundaries varied from 2011 to 2016, with each expanding to include larger but sparsely populated areas bordering the towns.

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, and the Broadsound-Nebo SA2 includes the Dysart, Middlemount, Coppabella, Nebo and Glenden SSCs.

The broader region for labour force analysis is represented by the Mackay Statistical Area 4 (SA4) which corresponds to the Mackay-Isaac-Whitsunday region and the Central Queensland region which includes the Central Highlands, Rockhampton, Biloela, Gladstone and Livingstone LGAS.

Table 2-4: Project SIA Statistical Geography

Statistical Area	Study Area	Community	
State Suburbs (SSC)	Local study area	2011	2016
		Moranbah (SSC3100) Area: 3,046.9 km ²	Moranbah (SSC31929) Area: 3,046.6 km ²
		Dysart (SSC30529) Area: 4.9 km ²	Dysart (30922) Area: 3,446.7 km ²
		Middlemount (SSC1052) Area: 12.2 km ²	Middlemount (Code SSC31842) Area: 513.5 km ²
		Nebo (SSC31207) 1735.4 km ²	Nebo 2016 (SSC32132) 876.9 km ²
		Coppabella (SSC30427) 797.5 km ²	Coppabella 2016 (SSC11061) 797.5 km ²
Statistical Area 2 (SA2)		Moranbah SA2 (312011341) Area: 3,046.6 km ² Broadsound-Nebo SA2 (312011338) Area: 27,991.4 km ²	
Local Government Area (LGA)		Isaac LGA (LGA33980) Area: 58,862 km ² Mackay LGA (LGA34770) Area: 7,613.3 km ²	
Statistical Area 4 (SA4)	Regional study area – workforce and business capacity and opportunity	Mackay – includes Mackay, Isaac and Whitsunday - (312) Area: 90,140 km ² Central Queensland SA4 – Code 308 117, 588	
State (STE)	Comparator for local study area	Queensland (STE Code 3) Area: 185.3 million km ²	

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

2.3.4 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 indicators.

Quantitative modelling of social impacts was undertaken for demography, housing, and employment. Inputs to the modelling included the existing population profile, housing and employment profile, and assumptions regarding the local/regional mix of future employees and contractors. This enabled assessment of changes to population characteristics, job numbers, social infrastructure requirements and housing demands.

For impacts where there are fewer valid metrics (e.g. community cohesion), the range of relevant stakeholder views has been documented, and professional experience applied in relation to the likelihood of changes to social values, validated by the SIA community survey and workshop inputs. For example, stakeholders confirmed that the availability of long term employment is likely to enhance community cohesion, and did not identify the likelihood of conflict or a change in communities' identities.

The SIA includes cumulative SIA, 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 Project's existing impact management, mitigation and engagement commitments were considered in evaluating the likelihood and severity of potential impacts, and a final significance assessment was undertaken after applying the SIA's recommended mitigation, management and enhancement strategies.

Potential residual impacts were identified and rated, and mitigation and monitoring strategies developed for all social impacts with potential to negatively affect social indicators or community values.

2.3.5 Social Impact Management Plan

The SIA includes a Social Impact Management Plan which incorporates five management strategies to address potential changes in the socio-economic environment. The management strategies include:

- 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 impact will be monitored and reported, and the timing and frequency of monitoring. The effectiveness of SIMP strategies aimed at protection of key community values (e.g. housing affordability, community cohesion and local employment) will be monitored throughout the Project's implementation. This will include stakeholder engagement and regular monitoring of social indicators as outlined in Section 6.8.

2.4 SIA focus

The SIA focus has been defined with reference to:

- the Project's nature, scale and location;
- the scoping exercise as outlined in previous subsections;
- preliminary baseline investigations the EIS ToR, SSRC Act and SIA guideline requirements; and
- the range of social impacts experienced as a result of major resource projects in the Bowen Basin and other Queensland regions.

Table 2-5 summarises the scope of social impacts and benefits to be assessed.

Table 2-5: SIA Study Focus

Key Matters	SIA Section
Community and stakeholder engagement	
<ul style="list-style-type: none"> A consultative and inclusive engagement process commencing at an early stage of the SIA process commencing at an early Capacity of affected people to participate in the community and stakeholder engagement 	Section 3
<ul style="list-style-type: none"> Stakeholder views on the Project 	Sections 3.4 and throughout
<ul style="list-style-type: none"> Changes to existing land uses or settlement pattern 	Sections 4.1 and 5.7
<ul style="list-style-type: none"> Native Title rights and other interests held by Aboriginal and Torres Strait Islander people 	Section 3.3.2
<ul style="list-style-type: none"> Profile of potentially affected communities 	Section 4
<ul style="list-style-type: none"> Alignment with community and regional planning objectives 	Section 5.5.7
<ul style="list-style-type: none"> Changes to existing land use or ownership 	Section 5.7.1
<ul style="list-style-type: none"> Community development and investment benefits 	Section 6.6.6
<ul style="list-style-type: none"> Community and Stakeholder Engagement Plan 	Section 6.3
<ul style="list-style-type: none"> Project's plans for stakeholder engagement during construction and operation 	Section 6.3
Workforce management	
<ul style="list-style-type: none"> Projected workforce demand and composition Employment opportunities during construction and operation Workforce demand and estimated composition of workforce Employment opportunity and equity 	Section 5.2
<ul style="list-style-type: none"> Workforce health and wellbeing 	Section 6.4
<ul style="list-style-type: none"> Opportunities to commute to work where safe and practical 	Section 2.2
<ul style="list-style-type: none"> Assessment of the likely availability of personnel with relevant skills 	Section 4.7
<ul style="list-style-type: none"> Employment, training and development opportunities Provision of training, and employment for women, Indigenous people and people with a disability 	Section 5.2 and Section 6.4.4
<ul style="list-style-type: none"> Workforce management practices which prioritise recruitment of local and regional people, and people who will live in regional communities 	Section 6.4
<ul style="list-style-type: none"> Potential for social/cultural disruption due to non-resident worker influx 	Section 5.3.3
<ul style="list-style-type: none"> Recruitment hierarchy and recruitment initiatives 	Section 6.4.3
<ul style="list-style-type: none"> Impacts on population size or composition 	Section 5.3
<ul style="list-style-type: none"> Impacts on labour availability 	Section 5.8
<ul style="list-style-type: none"> Management provisions that ensure a healthy workplace 	Section 6.4.7

Key Matters	SIA Section
Housing and accommodation	
<ul style="list-style-type: none"> Local settlement pattern 	Section 4.1
<ul style="list-style-type: none"> Impacts on population size or characteristics 	Section 5.3
<ul style="list-style-type: none"> Status of approvals regarding infrastructure, utilities and services 	Section 5.5.2
<ul style="list-style-type: none"> Analysis of the impact of the demand for housing from project workers and households Likelihood and nature of impacts on local and regional housing markets Impacts on low and moderate income households and workers in other industries 	Section 5.4
<ul style="list-style-type: none"> Proposed accommodation for workers and projected impacts of accommodation 	Section 5.4.4
<ul style="list-style-type: none"> Strategies for the provision of accommodation for workers and families who wish to live locally 	Section 6.5
Health and community wellbeing	
<ul style="list-style-type: none"> Amenity impacts (e.g. dust, visual impacts, noise, traffic) 	Section 5.7.1
<ul style="list-style-type: none"> Potential for impacts on mental health 	Sections 5.6.3 and 5.6.4
<ul style="list-style-type: none"> Potential for impacts on community safety 	Section 5.6.5
<ul style="list-style-type: none"> Potential for impacts on physical health due to changes to the environment or community safety 	Section 5.6
<ul style="list-style-type: none"> Effects on social, health and recreational infrastructure including community services and facilities Income and employment security 	Section 5.5
<ul style="list-style-type: none"> Potential for impacts on natural resources 	Section 5.6.6
<ul style="list-style-type: none"> Level of on-site health services to be provided for workers and effects of demand for emergency services 	Sections 5.6.2 and 6.4.7
<ul style="list-style-type: none"> Effects on way of life, social character and cohesion Impacts/benefits to social resilience 	Section 5.7
<ul style="list-style-type: none"> Impacts/benefits for the needs of vulnerable groups Potential inflation and impacts to cost of living 	Sections 5.7.2 and 5.7.3
<ul style="list-style-type: none"> Changes to livelihoods 	Section 5.2
<ul style="list-style-type: none"> Cumulative impacts on resources affecting community wellbeing 	Section 5.9
Local business and supply	
<ul style="list-style-type: none"> Key industries in the region 	Section 4.7.3
<ul style="list-style-type: none"> Profile of skills and services required 	Section 5.2
<ul style="list-style-type: none"> Local/regional supply capacity and opportunities 	Sections 4.8.4
<ul style="list-style-type: none"> Benefits for local businesses 	Section 5.8.1
<ul style="list-style-type: none"> Labour draw/crowding out Effects on local business and economic vitality 	Sections 5.2.5 and 5.8.2
<ul style="list-style-type: none"> Established industry code of practice 	Section 6.7
<ul style="list-style-type: none"> Programs and policies to build local and regional capacity and capability Procurement strategies and initiatives Local buying policy application to contractors and sub-contractors 	Section 6.7

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3 Stakeholder engagement

This section describes the SIA stakeholder engagement process and the results of engagement.

3.1 Principles and objectives

Communities in the study area have extensive experience with the mining industry, including its cyclical trends, social impacts and how to optimise a project's benefits. The SIA sought to utilise this knowledge and experience. Principles which guided the SIA stakeholder engagement included:

- ensure community members and stakeholders understand the Project details, timing, and workforce arrangements so that discussions about impacts and benefits are meaningful;
- provide a range of opportunities to encourage community members and key stakeholders to participate;
- provide inclusive engagement throughout the assessment process; and
- ensure the SIA considers the interests and perspectives of people who may be directly affected by Project impacts.

The objectives of SIA engagement were to:

- involve key stakeholders in reviewing and defining the scope of assessment;
- collect quantitative and qualitative data for the social baseline;
- undertake a thorough process of engagement with IRC and State agencies;
- provide opportunities for stakeholder input to the baseline, assessment and mitigation strategies; and
- ensure that the assessment and evaluation of impacts was informed by the knowledge and experience of local stakeholders.

Residents and organisations in the potentially affected communities are highly experienced with the mining industry and have a clear understanding of its interactions with local communities, which enables excellent capacity to provide informed inputs on potential impacts and opportunities. They are however impacted by requests for input on multiple projects, so there is a degree of engagement fatigue. This was addressed by enabling stakeholder to provide input on the scope of assessment, social baseline, impact assessment and management strategies through a community survey and community workshops, and by conducting follow-up interviews with non-government and State agency representatives on specific issues.

3.2 Stakeholder Profile

Table 3-1 details the SIA stakeholders and key issues which were discussed with them.

All interactions with stakeholders were preceded by introductory information about:

- the Project, Pembroke, the proposed workforce arrangements and Project timing;
- the purpose of the SIA and of engagement; and
- the SIA study area and scope of social values and impacts being considered.

Table 3-1: Project stakeholders and issues

Stakeholder Category	Key Issues
OCG	<ul style="list-style-type: none"> • Scope of SIA and stakeholder engagement process. • Regulatory process. • Queensland Government agency engagement. • SIA guidelines. • Impact assessment findings and significance evaluation. • Management plans.
IRC	<ul style="list-style-type: none"> • Scope of assessment. • Workforce recruitment, management and accommodation. • Community values, trends and issues. • Changes to the housing market. • Impacts on community facilities and service access. • Local employment and training needs. • Local supply issues. • Road safety and community safety issues. • Management strategies.
Landholders	<ul style="list-style-type: none"> • Land ownership and use. • Access, connectivity and amenity. • Property impacts and mitigations.
Barada Barna people	<ul style="list-style-type: none"> • Indigenous land use and community goals. • Employment and business capacity and opportunity.
Community members and groups – Moranbah, Dysart, Middlemount, Nebo and Coppabella	<ul style="list-style-type: none"> • Workforce composition. • Local employment and training opportunities. • Impacts / benefits to community values. • Housing impacts. • Access to community and health services. • Local supply issues. • Road safety.
Local businesses	<ul style="list-style-type: none"> • Local and regional supply opportunities. • Effects on local business and economic vitality. • Labour draw and workforce impacts. • Economic development.
Social infrastructure providers and non-government organisations	<ul style="list-style-type: none"> • Community health and safety. • Mental health. • Service capacity. • Changed access/demand for health and medical services. • Effects on community services and facilities.
State agencies <ul style="list-style-type: none"> • Queensland Health • Queensland Police Service • Queensland Ambulance Services • Queensland Fire and Rescue Service • (Former) Department of Communities, Disability and Child Safety • Department of Education and Training 	<ul style="list-style-type: none"> • Workforce profile and labour availability. • Skill gaps and training opportunities. • Business opportunities. • Indigenous training, employment and business opportunities. • Social and health infrastructure capacity. • Emergency service capacity and demand. • Vulnerable population groups. • Social housing. • Cumulative impacts.

3.3 Engagement mechanisms and results

3.3.1 Isaac Regional Council engagement

The IRC has an active interest and important role in the development of the SIA. SIA engagement included meetings with Council representatives to discuss:

- the scope of the SIA, accommodation and workforce plans, and information needs with the Mayor, CEO and Director, Planning, Environment and Community; and
- SIA consultation findings, baseline findings, potential impacts and opportunities, and management strategies.

The first meeting focussed on the SIA scope and current issues relevant to the social baseline. Results included:

- agreement that the SIA scope should include Moranbah, Dysart, Nebo, Coppabella and Middlemount;
- Council's preference for direct (rather than contract) employment to support towns' sustainability;
- there is a lack of 'spare labour' and a need to bring employees to town by offering stability of employment, workforce development, and working with local businesses;
- the need for local training for young people have career pathways which support them to stay;
- a strong preference to avoid development of new construction camps in favour of using existing facilities in the area;
- the importance of working with local businesses to build a social licence; and
- the need for an early and ongoing commitment to building local content e.g. pre-advice on the Project's requirements, building relationships and pre-qualification of businesses.

The second meeting focussed on discussion of:

- preliminary findings from workshops (e.g. road conditions, housing vacancies, access to health and emergency services, and childcare);
- preliminary baseline findings on population, housing and social infrastructure access;
- changing shift work rosters and related childcare needs;
- workforce fatigue management;
- access to hospital and health services, and maintaining equitable access for residents when non-resident demands are high;
- training opportunities and career pathways for young people;
- land availability for residential development;
- town centre vitality and activation; and
- Pembroke's consultation and communication process.

While labour supply and unemployment in the Isaac region remains at consistently low levels, Council discouraged over-reliance on these figures for assessment and project planning purposes, drawing attention to the fact that there is latent labour supply available (e.g. people on short term contracts) and that employment opportunities will draw people to the region.

Council identified interests held in the Isaac Affordable Housing Trust, Simply Sunshine Childcare Centre (Moranbah), Moranbah Early Learning Centre, Moranbah Creche and Kindergarten, and Nebo Medical Centre. Each is receiving Council funding to address areas of high community need in light of mining industry trends and economic pressures, and subsequent local service gaps. Council also noted work by Regional Development Australia in improving social entrepreneurship and innovation in regional communities.

Consultation with IRC prior to submission of the EIS clarified the need to ensure resident and non-resident workers were considered equally with respect to health and well being, and affirmed the importance of local employment opportunities to community cohesion, and the well being of families and the general community.

3.3.2 Barada Barna people

The Barada Barna Aboriginal Corporation (BBAC) Registered Native Title Body Corporate (RNTBC) holds land in trust for the Barada Barna people of Central Queensland. Pembroke's executive staff consulted directly with the BBAC on the range of matters including:

- Identification of Native Title interests (which are limited to a small area of land adjacent to the Isaac River);
- development of an Indigenous Land Use Agreement (ILUA), with associated financial contributions from Pembroke to BBAC;
- discussion of cultural heritage values and heritage management; and
- agreement of goals for Indigenous participation in Project employment.

Consultation with the Barada Barna people affirmed the centrality of employment pathways to Indigenous community well being. The results of this engagement have been considered in the SIA.

3.3.3 Government agencies and social infrastructure providers

Consultation with Government agencies was undertaken through the SIA workshop process, interviews and meetings during July to September 2017. Local representatives of Government agencies who participated in the community workshops included:

- Queensland Police (Dysart and Nebo);
- Queensland Ambulance (Moranbah, Dysart and Nebo);
- Queensland Education (Moranbah and Middlemount); and
- Queensland Health (Moranbah Hospital, Moranbah Mental Health Service and Middlemount Community Health Centre).

Workshop participants also included Emergency and Long Term Accommodation Moranbah, Moranbah and District Support Services and Moranbah Traders.

Additional consultation with government agencies was conducted with:

- OCG's SIA Unit;
- Department of Education and Training (Central Queensland);
- Queensland Health: Dysart Hospital, Aboriginal and Torres Strait Islander Health (Central Queensland) and Mackay Health and Hospital Services Rural Services.
- Department of Communities, Child Safety and Disability (North Queensland); and
- Department of Housing and Public Works (Central Queensland).

Agency inputs regarding the Project, the scope of potential impacts and benefits associated with the Project and relevant Government initiatives are summarised below.

Employment, labour supply and employment

The Project's anticipated employment profile was generally positively received in consultation with Government agencies, noting that firm workforce numbers are required to support Government service planning wherever possible.

The Department of Education and Training for Central Queensland noted that anecdotally, local businesses were seeing an increase in mining and construction activity in the Mackay and Isaac regions, and that some engineering businesses were having difficulty recruiting. The Department's initiatives include a current Regional Industry Training Assessment, from which a Regional Skills Adjustment Strategy and a Regional Skills Investment Strategy will be developed.

Housing

Consultation with the Department of Housing and Public Works (DHPW) confirmed that housing is currently affordable in the study area, and there is currently little to no demand for social housing from within local towns. The potential for cumulative impacts to cause rapid change to housing availability and affordability was also confirmed.

Community health and wellbeing

Health agencies consistently noted the growing prevalence of mental health issues in regional communities, with implications for demand on local resources, equitable service provision across the study area, and also for the management of the mental health and wellbeing of the Project workforce. Consultation with Dysart Hospital also noted a strong regional focus on the Closing the Gap initiative and the success of an Indigenous health promotion initiative provided by the Mackay Hospital and Health Service, held at the Leichardt Recreation Park.

The Department of Communities, Child Safety and Disability Services (DCCSDS) identified an increasing level of domestic and family violence being reported, partly in consequence of the pressures on families resulting from redundancies and business contractions from 2013.

Several agencies also noted that community management committees were having great difficulty recruiting and keeping management committee members, and that this had implications for governance and service provision. The DCCSDS noted that local services also have difficulty keeping staff, as many have skills which are transferrable to higher paid jobs in the mining industry.

As noted by IRC, Government service planning will need to consider the needs of both resident workers and their families. and non-resident workers staying locally while they are rostered on, particularly with respect to health and emergency services.

Local businesses and supply chains

The OCG's SIA Unit advised that Department of State Development's Regional Economic development team facilitates relationships with local businesses. This presents an opportunity to work with the Department on a local business engagement strategy for the Project, with a particular focus on supporting local businesses and suppliers to access opportunities through the ICN Gateway.

3.3.4 Community survey

A community survey was conducted to enable local residents and businesses to provide input to the SIA. The survey aimed to collect quantitative and qualitative information about values, issues and areas of concern, and was available online (via Survey Monkey) for five weeks from Monday 12 June to Friday 14 July 2017. Survey promotion included:

- IRC's public notice distribution list and posters at local Council offices;
- a 21-day 4RFM Moranbah radio advertising program;
- promotion through the Moranbah Traders Association's local network, the Nebo Community Development Group and the Dysart Community Support Group
- school newsletter promotion in Moranbah, Dysart and Middlemount, with handouts also circulated by Coppabella State School; and
- promotion at SIA workshops.

The survey received a total of 153 responses with some variation in response rates between towns. The largest percentage of survey respondents (65.1% or 99 people) were from Dysart, followed by Moranbah (21% or 32 people), Nebo (7.2% or 11 people), Middlemount (2% or three people) and Coppabella (1.3% or two people). A further 3.3% of respondents listed locations outside these local areas including four from within the Isaac LGA and one person from Mackay.

More than half of the survey respondents identified as long term residents of the Isaac region, including:

- 50% of respondents from Moranbah who had lived in the area for more than 10 years, while another 25% had lived in the area for 5-10 years; and
- 56% of respondents from Dysart who had lived in the area for more than 10 years, and another 15% had lived in the area for 5-10 years.

Approximately 44% of the respondents worked in the mining industry, with retail, tourism and hospitality the second most common industry of employment (9.3% or 14 people) and government services third (8% or 12 people).

The survey sample was insufficient to provide statistically valid survey results but provided a wealth of qualitative data for use in the social baseline, impact assessment and mitigation development. Survey results are summarised in the baseline at Section 4.2.2 and in the impact assessment at Section 5.1, and are considered in the assessment and management strategies.

3.3.5 Community workshops

Four community workshops (see Table 3-2) were held to consult with residents, social infrastructure providers, businesses and community organisations regarding:

- social baseline findings (community values, networks, resilience, local business, industry and economy, education and training, housing, social infrastructure and transport); and
- social impacts and benefits.

The workshops provided an overview of the Project, the EIS process and the SIA scope and process, then focussed on discussion of social impacts and benefits.

Table 3-2: SIA Community workshops

Location	Date	Time	Venue	Participants
Nebo	Tuesday 11 July	10.00 AM - 12.00 PM	Nebo Community Hall	10
Moranbah	Tuesday 11 July	4.00 PM - 6.00 PM	Moranbah Workers' Club	11
Middlemount	Wednesday 12 July	10.30 AM - 12.30 PM	Middlemount Community Centre	5
Dysart	Wednesday 12 July	2:00 PM - 4.00 PM	Dysart Community Centre	10

Participation in the workshops was promoted during promotions for the online Community Survey, in addition to invitations by phone and email. Participants included:

- community members and non-government organisations;
- local business owners and Moranbah Traders Associations;
- Police, Ambulance and Fire service representatives;
- representatives of schools, health services and community services; and
- IRC representatives (Cr. Jane Pickles, and one local staff member).

Overall, feedback was very positive. e.g. 'has to be a positive thing for the community'; 'come tomorrow'; and 'this is the most exciting thing that's happened for Dysart in many years'. The strongest themes in workshop discussions included:

- the availability of local employment and choice as to where employees live is critical;
- the benefits to both the company and the community of a committed permanent workforce;
- towns are slowly adjusting to the social and economic shock of having several projects constructed within a short timeframe (2011-2013) and to the subsequent withdrawal of that stimulation;
- there would be some pressures on health and emergency services as a result of the Project;
- there is housing capacity to support local growth; and
- the importance of keeping the community informed and building trust.

Inputs from participants are summarised in Table 3-3 and detailed consultation data are incorporated in the baseline, assessment and mitigation sections.

Table 3-3: Summary of workshop results

Issues	Details
Employment	Impacts <ul style="list-style-type: none"> • Strong interest in the definition of local workers and local/non-local workforce percentages. • General opposition to FIFO arrangements. • Enquiries regarding the Project's workforce shift/roster plans.
Population	Baseline <ul style="list-style-type: none"> • Young people are leaving town to pursue further education and qualifications. • Strong interest in promoting local areas to families and encourage migration. • Increasing older population and intergenerational local families. • Migration of low-socio-economic groups to access affordable housing. Impacts <ul style="list-style-type: none"> • Project could assist to increase and stabilise local populations.
Community values	Baseline <ul style="list-style-type: none"> • Strong ownership in communities. • Communities are feeling the effects of the downturn which is big adjustment. • Feeling effects of endemic loss of volunteerism across communities. Impacts <ul style="list-style-type: none"> • Local employees contribute to local resources and cohesion. • The need for some FIFO or DIDO workers was also generally acknowledged. • Project viewed as potentially positive for local amenity and liveability through increased population.
Community health and safety	Baseline <ul style="list-style-type: none"> • Road conditions poor on Golden Mile Road and Peak Downs Highway. • Workers housed in villages are less likely to be involved in behavioural incidents in town than workers that are living in local housing. • Drug and alcohol use, domestic and family violence (DFV), and mental illness observed as on the rise in each community. Impact <ul style="list-style-type: none"> • Key issues raised in relation to driver behaviour.
Social infrastructure	Baseline <ul style="list-style-type: none"> • No childcare in Nebo – limited availability in other local towns. • Emergency services not operating at peak, but on-ground resources are often stretched. • Moranbah child care availability (hours) affecting women's return to work. • Health services – challenge attracting and retaining doctors (Nebo, Dysart) access/affordability (limited bulk billing available) and availability of chest X-rays. • Continuity in health services important. • Stable enrolments in Moranbah and Dysart, and declining enrolments in Middlemount and Coppabella. Capacity for growth in all schools. • Increased low socio-economic groups and transient kids are challenging for schools. • Blue Shed (CTEC) – available for Moranbah kids only. Impacts <ul style="list-style-type: none"> • Mine site emergency demands represent a load on ambulance services. • Emphasised importance of clear forward planning and communication to ensure emergency service resources are available to meet needs. • Interest in Project's strategies for addressing on-site health and safety. • Some competing demands for health services between non-resident mining workers and locals. • Education, training, employment pathways critical to retaining 15 to 25 year age group, and to avoid a community culture fuelled by lack of aspiration. • Apprenticeships /cadetships play an important part, but have had low availability in recent years.

Issues	Details
Housing	<p>Baseline</p> <ul style="list-style-type: none"> • Vacancy rates higher than statistics show, due to mining-owned housing stock. • Land available for growth in Nebo, but developments on hold. • Rental market down approximately 30% over three years, but is expected to pick up. <p>Impact</p> <ul style="list-style-type: none"> • Potential impacts are positive for development but need to be managed particularly in context of cumulative impacts.
Cumulative impacts	Difficult to judge – potential for cumulative impacts on housing, health and emergency service demand, depending on what other projects are in play. Adani was mentioned regularly regarding uncertainty in project impacts/opportunities/timing.

3.4 Summary of engagement findings

This section summarises the key impacts and mitigations identified in SIA engagement.

Employment and workforce

Key inputs regarding employment and workforce management included:

- low unemployment rates were noted across the study area, but there is potential for latent capacity which is under-represented in the Centrelink data;
- interest in the Project's workforce plan, and shift and roster plans;
- permanent opportunities are highly sought after; and
- general opposition to FIFO arrangements and strong interest in promoting local areas to families to encourage migration.

Suggestions to mitigate impacts and maximise Project benefits included:

- increase the Project's local employment plans and limit the use of FIFO workers;
- support workers to live locally, including a suggestion to incentivise local residency;
- provide permanent jobs to prevent casualisation of the workforce;
- demonstrate genuine concern for the wellbeing of workers and suppliers by employing and contracting within a safe travel distance to site;
- be transparent in the recruitment and hiring process;
- set workforce management standards and guidelines before the Project starts; and
- conduct workforce training and induction programs in the local community.

Population

Stakeholders viewed the Project as likely to support the positive growth and stabilisation of local populations. Importantly, permanent local employment was noted as critical to attracting and retaining families in local communities, and to family wellbeing. Actions to maximise the benefits to local communities are reflected in the subsections describing employment, workforce management and community health and wellbeing.

Housing and cumulative impacts

Stakeholders generally anticipated a positive effect on local housing conditions (uptake and market improvements). Workshop participants discussed local rental vacancy rates being higher than the rates indicated by property statistics due to private mining stock being withheld from the market. They also noted that residential development projects were on hold, with land available to support further growth in Nebo and Dysart, and a portion of land held by Council for further residential development in Moranbah if required.

Whilst the Project was anticipated to have a positive impact on local housing, stakeholders noted that these impacts would need to be considered in a cumulative context. The potential for cumulative impacts on housing and also on health and emergency service demand was difficult to judge for local stakeholders due to uncertainty about the project pipeline and the influence of coal prices on investment decisions. Adani's Carmichael Coal Mine and Rail Project was frequently mentioned by stakeholders regarding uncertainty about its timing, potential impacts and opportunities.

Community values, amenity and lifestyle

Stakeholders generally anticipated that the Project would have a positive effect on local amenity and liveability, through stimulation of activity and increased population. Workshop participants emphasised the importance of local employees and their contribution to local resources and cohesion, however the need for some FIFO or DIDO workers was also acknowledged.

Responses to the community survey provided an indication of the environmental values held by some respondents, particularly with respect to the Project's management of air quality, water quality, and natural habitat.

While existing concerns about dust were noted among Moranbah residents, stakeholders did not expect the Project to impact significantly on existing local conditions due to its distance from local population centres. The potential for changes to environmental qualities to affect community wellbeing is considered in Section 5.6.1.

Suggestions in relation to managing impacts on community values and lifestyle included:

- invest in local towns by supporting local organisations and community life;
- fund regular community events (e.g. concerts, outdoor activities and family days);
- ensure Project impacts on air and water quality are minimal; and
- plant advanced trees and create wildlife areas to compensate for environmental disturbance.

Social infrastructure

Potential impacts on social infrastructure and services largely related to increased demand for health and emergency services. For local health service providers, the concern related to managing the competing demands for services between non-resident mine workers and locals, including instances where residential access to hospital or visiting specialist services had been impacted by non-resident workforce demands and mine site emergencies.

Emergency service stakeholders indicated some latent capacity in their services but also emphasised the limitations of their resources, and requested clear forward planning and communication from the Project to ensure adequate resources would be available to meet needs. All health and emergency service stakeholders also had a strong interest in the Project’s plans to address on-site health and safety to reduce demand on local services. Government planning for health, Police, emergency and community services will need to consider the needs of both resident workers and their families, and non-resident workers.

Community health and wellbeing

Stakeholders identified a range of existing concerns in relation to community wellbeing, ranging from local and regional road conditions (in particular the Peak Downs Highway and Golden Mile Road), to incidences of poor workforce behaviour, and observations of drug and alcohol use, domestic violence and mental illness within each community.

Stakeholders indicated their expectations of the Project in terms of workforce behaviour management, with specific mention of fatigue management, anti-social behaviour management and driver behaviour (specifically, speed and respect).

Education and training

Stakeholders noted that education, training and employment pathways are critical to retaining the 15 to 25 year age group locally and fostering their aspirations, and noted that these opportunities had been missing from the local area in recent years. The Blue Shed (CTEC) training program was identified as a well-recognised and successful training model locally, however the program is only accessible to students of Moranbah State High School. Key actions suggested for the Project to help enhance education and training options locally included creating school-based traineeships and apprenticeships, having a set number of apprentices annually, and partnering with schools to assist students with career enhancement.

Local business and trade

Stakeholders generally expected local business and trade in all communities to benefit positively from the Project, to varying degrees. Suggestions for how the Project could maximise these benefits included:

- a commitment to local buying, and support for local shops, suppliers and services;
- encouraging Project workers to live locally, connect with and support local community; and
- working with local suppliers on capacity building initiatives.

Table 3-4 summarises the key themes raised in consultation and where they are addressed in the SIA.

Table 3-4 Key stakeholder issues and relevant SIA sections

Key Issues	Impact and Opportunity Assessment	Mitigation and Enhancement
Local employment, training and apprenticeship opportunities	Section 5.2	Section 6.4
Housing and accommodation demand	Section 5.4	Section 6.5
Demands on social and health infrastructure	Section 5.5	Section 6.6
Community cohesion and social capital	Section 5.3 and 5.7	Section 6.6
Community engagement	Section 5.1	Section 6.3

Key Issues	Impact and Opportunity Assessment	Mitigation and Enhancement
Health, safety and wellbeing	Section 5.6	Section 6.6
Local buying arrangements	Section 5.8	Section 6.7
Cumulative impacts and cyclical issues	Section 5.9	Section 6.8

4 Social Baseline

This section describes the social environment in the potentially affected communities, the Isaac LGA and relevant characteristics of wider region from which construction and mining labour may be drawn.

4.1 Settlement pattern

4.1.1 Traditional ownership

In June 2016, three Native Title determinations were made for claims by the Barada Barna and Widi Peoples¹¹. The determinations cover an area of approximately 3,233 km² of land and waters south-west of Mackay and north-west of Rockhampton, including approximately 2,699 km² which is Barada Barna country, approximately four km² which is Widi country and 530 km² which is shared between the Barada Barna People and Widi People. Most of the Isaac LGA including the Project area is within the traditional country of the Barada Barna people. Country shared between the Barada Barna People and Widi People (and that determined as solely Widi country) is located around Nebo.

Barada Barna people were displaced and dispossessed of their traditional lands as pastoralism took hold during the late 19th and early 20th centuries but have maintained connections with many parts of the Isaac region.

Barada Barna people's native title and cultural heritage are discussed in the relevant EIS. The SIA discusses Indigenous equity, labour force issues and the Barada Barna people's plans with respect to participation in the Project.

4.1.2 Land use and ownership

The Project is located within zones mapped as a Regional Landscape and Rural Production Area under the MIW Regional Plan, but outside zones mapped as good quality agricultural land. The closest potential Strategic Cropping Area land (as defined by the RPI Act) is located approximately 2 km to the south of the Willunga domain, adjacent to the Isaac River. Land use maps, including regional landscape and rural procurator area maps are available in the EIS in Section 3.10 and in Appendix M of the EIS.

Cattle grazing (predominantly wagyu and Brahmin) is the primary land use in the Project area, with accompanying production of leucaena and silage, equipment and facilities for feeding and managing stock, water storage and large cell grazing areas.

There are seven properties affected by the Project's Mining Lease Areas (MLAs). Pembroke owns Iffley (affected by MLA1) and Deverill (affected by MLA1 and MLA2), and is in discussion with Rio Tinto Australia with regard to access to a margin of Wynette within the Specific Purpose Mining Lease Application boundary and MLA2.

¹¹ Queensland Cabinet & Ministerial Directory. 2016.

There are four private holdings operating as grazing properties within the MLA Areas 1, 2 and 3:

- Vermont Park, which would be affected by the Olive Downs South domain mining and infrastructure areas. The Vermont Park homestead is located on the eastern bank of the Isaac River, approximately 500 metres from the closest point of the Olive Downs South domain mining area;
- Willunga, which would be affected by the Willunga domain mining and infrastructure areas. Willunga is dissected by the Fitzroy Development Road, with a homestead on the eastern side of the road, approximately 5 km from the Willunga domain mining area;
- Seloh Nolem which would be partially affected by some of the Willunga domain infrastructure. The Seloh Nolem homestead would be located approximately 600 metres from the proposed infrastructure corridor between the Olive Downs South and Willunga domains, and approximately 5 km from the Project mining areas; and
- Old Bombandy which would be partly affected by the Willunga domain mining area. The Old Bombandy homestead would be located approximately 5 km from the Willunga domain mining area.

Company consultation with property owners about compensation/acquisition and use of land was in progress when the EIS was undertaken, with agreements to purchase two properties in place.

Winchester Downs, Olive Downs and Moorvale are private properties which would be crossed by the Project's infrastructure corridors (i.e. the rail spur, pipeline and ETL), and Pembroke is negotiating access with the property owners.

Private property owners' values in relation to their properties include:

- the use of homes, outbuildings, sheds and pastoral improvements;
- family recreation, family heritage and enjoyment of properties;
- proximity to the Isaac River and its environmental values; and
- business uses (principally grazing) and support for the livelihoods of owners and employees.

Potential impacts are discussed in Section 5.7.1.

4.1.3 Mining

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 decades¹². 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 1970s¹³.

¹² Murray, A. 1996. p. 13.

¹³ Centre for the Government of Queensland. Queensland Places. 2015a.

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. Mines have also been established in the Nebo region, and all four towns have been heavily influenced by the mining and construction industries. Coppabella was built by Queensland Railways in the early 1970s.¹⁴

The history of mining in the local area now spans more than 100 years, including almost 50 years of open cut coal mining. 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.

The Project would be located approximately equidistant (at around 40 km) from Moranbah and Dysart, and within a safe daily driving time (approximately one hour) of Middlemount, Nebo and Coppabella. Key features of the regional and local settlement patterns are described below.

4.1.4 Regional settlement pattern

The Isaac Regional LGA 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.

The IRC LGA covers a total of 58,862 km², including a diverse mix of coastal, agricultural and mining communities, and contains a substantial portion of the Bowen Basin coal reserves.

In April 2015, IRC adopted Isaac 2035, a Community Strategic Plan¹⁵, 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 goal is that in 2035, the Isaac LGA will have strong and diverse communities that support all to live, work and raise families.

The MIW region includes the LGAs of Mackay, Isaac and Whitsunday, with a total area of approximately 90 000 km². The MIW Regional Plan 2012 notes that the pastoral and sugarcane industries, agricultural processing and mining have shaped development of the region.

The vision for the MIW as described in the MIW Regional Plan is: 'a vibrant, progressive region where the values of the community and industry are respected and in balance with the natural environment... a resilient and inclusive community ... where residents and visitors enjoy a healthy, active and safe lifestyle'¹⁶.

With respect to future development in the MIW region, the Queensland Government Statistician's Office (QGSO) estimated in 2015 that the total area of broadhectare land (larger land parcels representing unconstrained residential land supply) was 5,806 hectares, which if fully developed, was likely to yield approximately 34,300 dwellings. This would accommodate population growth of approximately 91,700 people considering current average household sizes, and would provide approximately 19 years of supply¹⁷. As such, available land stocks support the future growth of residential communities in the region.

¹⁴ Isaac Regional Council. 2016.

¹⁵ Isaac Regional Council. 2015.

¹⁶ Queensland Department of Local Government and Planning. 2012. p 12.

¹⁷ Queensland Government Statistician's Office. 2015a.

Mackay is the principal service and activity centre for the MIW region, providing higher order administrative, business, commercial, cultural, entertainment, and shopping services. The Mackay Municipality was first proclaimed in 1869, became a Town in 1903, and was proclaimed a City in 1918.

Following various LGA amalgamations over the decades, the three LGAs of Mackay, Mirani and Sarina amalgamated on 15 March 2008 and the Mackay LGA now covers an area of some 7,613 km². Mackay's economy is largely driven by agriculture (primarily sugarcane production and milling), mining in the Bowen Basin and supporting sectors including ports, and retail and commercial activities. Mackay features a university campus, base hospital and the region's main air and sea ports.

Over the past 50 years, Mackay has been an important regional centre for towns in the SIA study area. Mining towns have sourced specialist health services, training, professional services, retail services and entertainment in Mackay, and there are strong social and sporting links between Mackay and the mining towns. As FIFO employment options increased, Mackay also became an attractive residential centre for mining families, and other Mackay workers were also drawn to the mining sector.

Moreover, Mackay has developed a host of industries servicing the mining industry, ranging from the two ports to construction, equipment supply, engineering and scientific services, labour hire and professional services. Whilst planned to grow strongly to cater for population growth in part driven by mining, Mackay experienced a range of social impacts as a result of a contraction in mining activity during 2013-2016, including high unemployment, low business confidence and increased housing vacancies. Further detail is provided in Section 4.7.

4.1.5 Local towns

Moranbah

The Moranbah area was settled by pastoralists in the mid-1800s. Open cut coal mining began in the late 1960s, and Moranbah was established as a purpose-built mining town by UDC.

Moranbah supports a resident population of 8,735 in 2016 (see Section 4.3.1) and is identified in the MIW Regional Plan 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;
- an adjacent commercial precinct including motels, short stay units, the Moranbah Workers Club, and an indoor retail centre west of the town centre;
- three schools, a hospital, the CTEC mining industry training centre at the High School, and a large range of sporting and recreational facilities;
- an airport, nine kilometres 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.

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. In addition to the urban footprint in which development assessment is largely controlled by IRC, Moranbah includes Priority Development Areas (PDAs) for which the Department of Infrastructure Local Government and Planning is the Development Authority. PDAs enable further urban development to accommodate growth.

Moranbah is connected to the Peak Downs Highway by the Moranbah Access Road, and is approximately 200 km by road west of Mackay. There is no public transport in Moranbah and no direct passenger train service to Moranbah, increasing reliance on private vehicle usage. A private taxi service is available within Moranbah town limits. A daily bus service operates between Mackay and Moranbah, and there is a twice-weekly bus service to Rockhampton. The majority of bus services operating in and around Moranbah are arrangements for commuting workers. There are also two school bus routes which utilise Peak Downs Highway to provide transport to the schools in Moranbah from Clermont and Coppabella.

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.

Dysart

Dysart was established in 1973 to support operation of the Saraji and Norwich Park Mines. The township was named after an existing local pastoral property, reflecting the strength of cattle grazing in the area¹⁸. Dysart was part of the former Broadsound Shire which existed between 1879 and 2008, and is located approximately 250 kms southwest of Mackay and 300 kms northwest of Rockhampton.

At the 2016 Census, Dysart State Suburb had a population of 2,991 residents. Land use in Dysart is primarily urban residential with local access to parkland at Centenary Park, Lions Park, Fox Park, Leichardt Oval and Recreation Park¹⁹. Surrounding land use according to the 2005 Broadsound Planning Scheme includes good quality agricultural land, mining lease areas, rail and road easements²⁰. The Peak Range National Park located approximately 40 km west of Dysart also offers recreational opportunities²¹.

Council's analysis of Dysart's urban form²² notes that whilst Dysart was established as a mining town, a move to non-residential workforces has seen higher density focussed on the town's fringes in workers' camps with very low density in the town centre. Also, a lack of affordable commercial properties had led to growth in home businesses. As a consequence, the town centre's vitality has declined. Implementation of an Urban Design Framework commenced in 2014²³.

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.

¹⁸ Centre for the Government of Queensland. Queensland Places. 2015b.

¹⁹ *Ibid*.

²⁰ Isaac Regional Council. 2005.

²¹ Isaac Regional Council. 2016.

²² Isaac Regional Council. 2015.

²³ Isaac Regional Council. 2017a.

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 the Royal Flying Doctor and Medivac Services.

Middlemount

Middlemount was developed during the 1980s, initially to service the Foxleigh and German Creek open cut coal mines located to its south and south-west. From 2006, Middlemount also provided support services for Anglo American's Lake Lindsay open cut mine²⁴. Middlemount is located approximately 250 kms southwest of Mackay and 280 kms northwest of Rockhampton, and is connected to the Dysart-Middlemount Road by Centenary Drive and Dawson Street.

At the 2016 Census, Middlemount had a population of 1,841 people and is described as a small, and thriving community, demonstrating its strong community spirit through events such as the popular Middlemount Race Day²⁵.

The Middlemount community predominantly comprises mining families and mine workers, or workers in supporting industries. Middlemount also supports surrounding rural properties²⁶. Urban residential land and associated town facilities are the key land uses in Middlemount, which is surrounded by grazing properties, a substantial mining lease area to the south and south west, June State Forest to the east and good quality agricultural land to the north²⁷.

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

Nebo

Nebo is located on the Peak Downs Highway, approximately 90 km west of Mackay and 100 km east of Moranbah by road. Nebo and its surrounds were settled for grazing and agricultural properties, primarily producing sheep and wool.

Nebo was first surveyed in 1865 as pastoralists moved inland from Rockhampton, and developed as a small rural hub. Nebo became a separate district to the Broadsound division in 1883, primarily servicing the grazing industry. At the 2016 Census, Nebo State Suburb had a population of 753 people.

Nebo's economy is supported by grazing, agriculture and mining industries. The township is characterised by historic and heritage features including the Historic Nebo Museum, Nebo Memorial Hall, Mount Britton and the heritage-listed Nebo Hotel. Key facilities in Nebo include the Community Emergency Services Complex, which hosts Nebo's Ambulance Service, QFRS, SES and Rural Fire Brigade, Nebo Medical Centre, Nebo State School, a Public Pool, the Post Office and a library.

²⁴ Centre for the Government of Queensland. Queensland Places. 2015b.

²⁵ Isaac Regional Council. 2015.

²⁶ Middlemount Community School. 2017.

²⁷ Isaac Regional Council. 2015.

Nebo is intersected by the Peak Downs Highway, which continues running north-east 90 km to Mackay. Approximately 6 km north from Nebo, the Peak Downs Highway also connects with Suttor Development Road, which continues running west to Mount Coolon. Running south-east, the Peak Downs Highway connects Nebo with Coppabella (50 km south-east) and with Fitzroy Development Road (30 km south).

Coppabella

Coppabella is located on the Peak Downs Highway, approximately 150 km west of Mackay and 50 km east of Moranbah by road. Coppabella is predominantly a railway town, established at the junction of the railway lines to Goonyella and Saraji Mines by Queensland Railways to staff and manage rail transport to the Port. The Coppabella Railway Station (freight only) was opened in November 1971.

The administration of Coppabella township was passed to IRC which has described it as a 'closed town' that exists only for the railway²⁸, and there is little to no vacant housing available.

In 2016, the State Suburb of Coppabella had a population of 466 residents. Services and facilities in Coppabella include the Railway station and work depots, houses, a shop, a swimming pool, and facilities including basketball and tennis courts, a football oval, state school, ambulance, and a rural fire brigade.

Workers' accommodation villages near Coppabella include the Coppabella Village (CIVEO centre) and the Moorvale Camp.

4.1.6 Connectivity

The two major state roads that service the Isaac region are the Peak Downs Highway (connecting Clermont to Mackay) and the Suttor Developmental Road (connecting Mount Coolon to the Peak Downs Highway, Nebo).

The major road transport routes surrounding the Project are the Peak Downs Highway, located approximately 15 km to the north-west of the Project, and the Fitzroy Developmental Road, which runs directly along the Project's eastern boundary at the Willunga property, to the south-east of the Project.

The Iffley Connection Road, Vermont Park Road and Annandale Road also run along the boundary of the Project, connecting the Project area with the Fitzroy Developmental Road and the Peak Downs Highway (Figure 2-1). Carfax Road runs east-west to the south of the Project boundary, connecting the Fitzroy Developmental Road with Dysart. The Peak Downs Mine Road, which becomes Saraji Road when it intersects the Saraji mine, runs generally north-south approximately 10 km to the west of the Project.

Local connector roads are heavily trafficked. The Golden Mile Road and the Peak Downs Highway were identified in consultation as dangerous roads.

Maps showing the location of rail and road connections are provided in Section 3.8 and Appendix J of the EIS.

²⁸ Isaac Regional Council. 2016.

4.2 Community values

4.2.1 Indigenous community values

As noted in Section 4.1.1, the Barada Barna People and the Widi People have native title interests in land in the Isaac region. The Barada Barna people number some 600-800 people living primarily in Queensland, with largest numbers of families located in the Isaac region, Mackay and Kingaroy. 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. A Widi traditional owner noted that native title gave the Widi people 'the opportunity to continue to work as a society on their own country' as well as opportunities for economic development, and employment and training²⁹.

Pembroke representatives met with representatives of the Barada Barna people four times during the EIS preparation process. The content of the meetings focussed on

- employment opportunities;
- affected lands;
- cultural heritage; and
- compensation arrangements.

Indigenous social values identified as part of these discussions include traditional owners' cultural values (relevant to past and present relationships with the land and waters), and social values relevant to community wellbeing and economic participation, including:

- a strong focus on improving Indigenous people's capacity and opportunities for employment, and business development;
- active involvement in the protection of cultural heritage; and
- training and employment opportunities to restore social and economic wellbeing in the Indigenous community.

Cultural heritage assessment undertaken by Woorra Consulting and Northern Archaeology Consultancies Pty Ltd for the nearby Caval Ridge Project³⁰ noted that traditionally, most plant species found in the region had some practical or ritual use, and that some species also had symbolic or ritual significance. The assessment found 'a wealth of Indigenous cultural heritage sites and items including artefacts, scarred trees, fireplaces, and natural features with cultural significance'. A detailed Cultural Heritage Assessment has been provided as part of the Project's EIS, and a Cultural Heritage Management Plan is being developed with the Barada Barna people with respect to the Project site.

²⁹ Queensland Cabinet & Ministerial Directory. 2016.

³⁰ BMA. 2011.

4.2.2 Community values

As part of the SIA community survey, respondents were asked to identify the extent to which they agreed or disagreed with a series of value statements about their community. Responses were captured using a 5-score Likert scale from strongly disagree (1) to strongly agree (5). Figure 4-1 shows the weighted average of responses to each statement (with 5 the highest positive value), based on total responses (n=136), and respondent's locations³¹.

The results indicate a very strong sense of community throughout the study area. In Moranbah, respondents agreed that their community is:

- family oriented (an average score of 4.59 out of 5);
- resilient (4.41);
- cohesive (4.28);
- a community with a strong identity (4.16);
- adaptable to change (4.09); and
- safe (feel safe walking at night) (4.06).

A small number of Moranbah respondents strongly disagreed or disagreed that Moranbah community was accepting of different cultures, and a harmonious community. While this influenced the overall weighted average slightly (3.94 and 4 respectively), the average result was still positive. In Dysart, residents also agreed that their community is:

- resilient (4.42 out of 5);
- family oriented (4.27);
- cohesive (4.24);
- safe (4.21);
- adaptable to change (4.19);
- accepting of diversity (4.15);
- a community with a strong identity (4.13); and
- harmonious (3.99).

Sample sizes for Middlemount, Nebo and Coppabella were too small to draw reasonable conclusions, except to say that Middlemount respondents rated the community as primarily family oriented and safe, Nebo rated the community as primarily resilient and accepting of diversity, and Coppabella as safe, followed by harmonious. Respondents who identified as living 'elsewhere in Isaac LGA' and 'other' were excluded from the results. Key findings regarding community values from the community survey are represented in Figure 4-1, which shows the weighted average of responses from each local community.

³¹ Moranbah (n=32); Dysart (n=89); Middlemount (n=2); (Nebo=11); Coppabella (n=2).

4.2.3 Culture and identity

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

- a strong work ethic, with people willing to work hard to provide for the future;
- a love of recreation, including sport, outdoor activities and leisure time with family and friends;
- a commitment to ensuring children, older people and vulnerable people are protected and supported; 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.

Apart from a small number of Barada Barna people and a handful of station owners, there were no 'old families' in the area, and everyone had access to a similar style and quality of housing. Traditionally there was some differentiation between mining 'workers' and 'management' and whilst these distinctions blurred over the years, there is still some distinction between workers and managers.

Consultation indicates that Moranbah, Dysart 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, with a 'work hard, play hard' ethos, but are also family towns with large percentages of children and young people, and a high priority on providing a safe and enriching environment for them.

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.

Nebo has a more rural identity, as a long-term local centre of the pastoral industry. During the mining boom, Nebo also accommodated numbers of construction workers, but country and family values remain strong. Coppabella has a strong identity as a railway town, and has a close-knit community bonded by shared employment in the rail network.

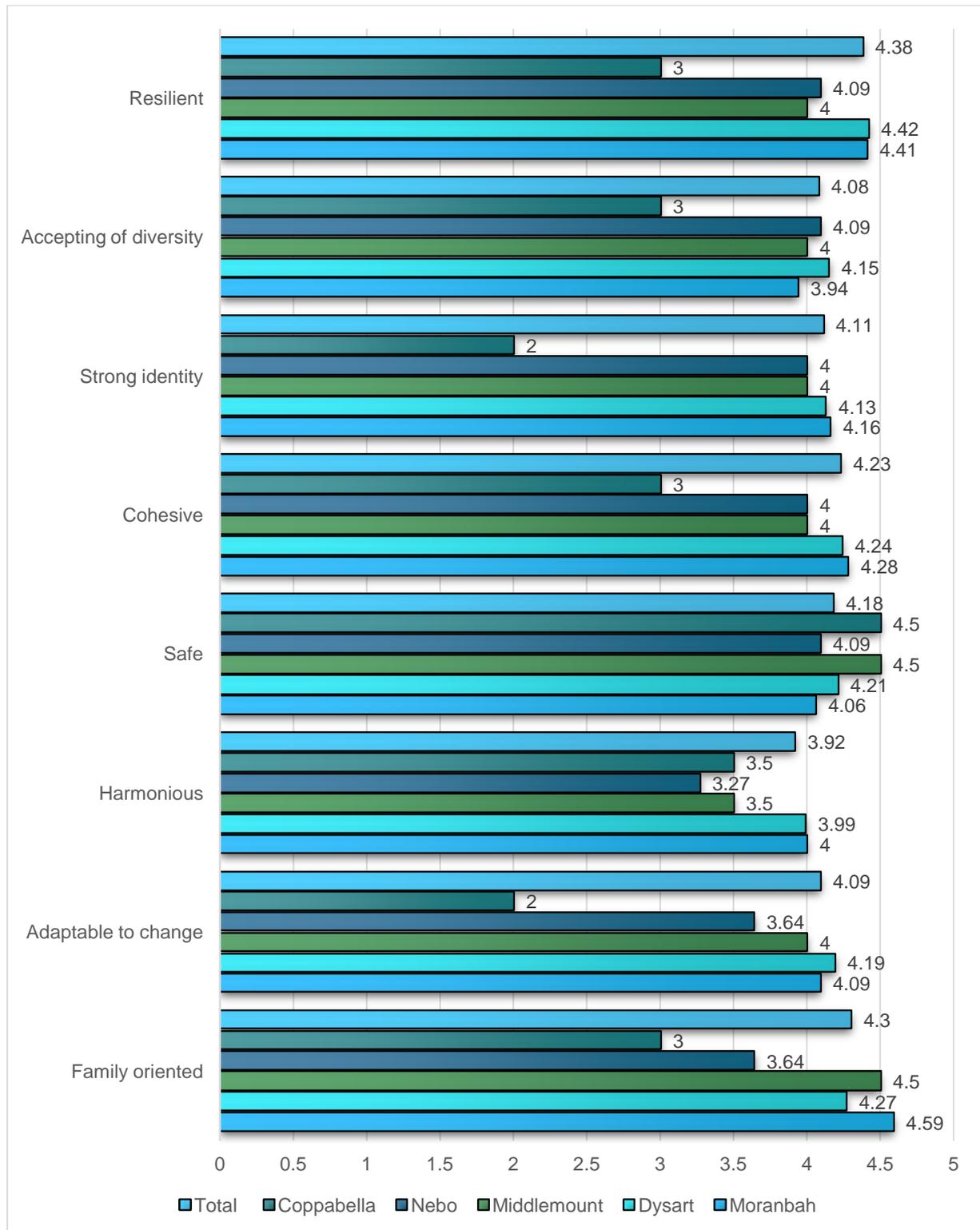
4.2.4 Amenity and quality of life

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. The Isaac 2035 Plan describes 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 ... with supportive cultures;
- safe communities with low crime;
- a younger than average population; and
- the arts and cultural communities³².

³² Isaac Regional Council. 2015. p14.

Figure 4-1: Community survey results on community values



As purpose built towns, Moranbah, Dysart and Middlemount were designed with central town squares, cul de sacs separated by pedestrian buffer zones, and neighbourhoods radiating from the town square aiming for walkability to schools, shops, and diverse sporting facilities. Specific amenity and lifestyle values for each town are described below.

The SIA community survey asked respondents to rate their communities in terms of key determinants of wellbeing, including housing access for all groups, local business vitality, access to community and health services, employment diversity, environmental qualities and overall quality of life.

Table 4-1 shows the proportions of respondents that agreed with each statement. Respondents were also invited to provide comments about each aspect of wellbeing, which are summarised for each town following the table. Responses from Middlemount, Nebo and Coppabella should be viewed in light of their very small sample sizes.

Table 4-1: Community survey results on wellbeing

Statement	Moranbah N=29	Dysart N=81	Middlemount N=2	Nebo N=11	Coppabella N=2
Access to housing is affordable for all socio-economic groups	69%	99 %	100%	100%	50%
Local businesses are generally doing well	57%	35%	50%	54%	50%
Our community needs more community and health services.	86%	91%	50%	91%	100%
Our community needs more diverse job options	82%	94%	100%	100%	1%
We have a clean environment in and around our community	50%	91%	100%	82%	50%
Quality of life in our community is good, or better than good	93%	79%	50%	90%	100%

Moranbah

Moranbah is a compact town characterised by low-rise housing well distributed around the town centre, but with a feeling of wide open space beyond the town. Moranbah’s lifestyle is supported by strong rural values of friendliness, hard work, sports, and mutual support. The community enjoys the opportunity to earn a good income while being close to their families and pursuing active leisure activities outside of work, with a relaxed and casual lifestyle, rich in social and sporting options. Key aspects valued by residents in Moranbah include:

- a strong community spirit;
- 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 (see Section 4.5); and
- a range of local retail services.

In addition, SIA survey respondents appreciated Moranbah’s tidy parks, well-serviced town centre and the availability of a good range of free community activities.

The majority of Moranbah survey respondents (93% or 27 people) felt that their quality of life was good or better than good (see Table 4-1), but that the community needed more community and health services (86% or 25 people) with particular mentions of mental health, suicide prevention and youth development. Representative comments included:

'If there were more permanent families in Moranbah, we would have more clout with the government. At present, we are servicing the FIFO, DIDO and other itinerant workers but have not got access to the accurate numbers.'

'We need mental health services and youth development opportunities.'

'We need the best health facilities at the hospital, to be able to give birth in town, and more police.'

More than two thirds of Moranbah respondents (69%) felt local housing was accessible to all socio-economic groups, but many noted that *'it varies depending on the boom cycle and the greediness of home owners/real estate agents.'*

Fewer (57% or 16 people) felt local businesses were doing well, noting:

'Some are just staying afloat.'

'Most businesses are doing well, but are affected by decisions of the mining industry when they discourage their families to live in Moranbah.'

'Consumer confidence is at an all-time low. Casualisation of the workforce and forced FIFO arrangements are at the core.'

Consultation indicated that dust (identified by residents as coal dust) has recently affected the amenity of homes and outdoor areas. Only 50% of the SIA community survey respondents agreed that the Moranbah community enjoys a clean environment, with many citing water and air quality, particularly dust as a primary concern, e.g. *'we have a lot of coal dust over last five years, otherwise it's a clean environment.'*

Dysart

Dysart is described by residents as a friendly community with modern facilities including the multi-purpose Dysart Recreational Centre, and a civic centre and library. While predominantly a 'mining town', the community in Dysart enjoys the benefits of a rural lifestyle.

The majority of Dysart residents who participated in the SIA community survey thought that Dysart had a clean environment, with comments such as *'we are one of the prettiest mining towns around with Council maintaining local gardens beautifully and most people maintaining their yards.'*

Workshop participants in Dysart said their community offered a good range of community assets, facilities and services with room to expand to meet growing population needs, however the town also showed signs of being in a 'holding pattern', with large numbers of vacant houses, some community facilities boarded up and signage remaining for childcare services that never eventuated. Additional input from local residents described the town as 'beautiful, with a unique street layout and settlement pattern' that they would like to see stay consistent if and as the town grows. Workshop participants confirmed a strong sense of community ownership, however rates of community participation and volunteering weren't as strong as they once were. Some attributed the decline in community participation rates to challenges organising time around mine rosters.

In Dysart, 99% of survey respondents (80 people) agreed that housing access was affordable for all groups (see Table 4-1), with many comments acknowledging this as a snapshot in time. Comments included:

'At the moment, yes, but unfortunately there are very few jobs in town and the low rent is attracting a lot of people from other towns who don't want to work or to be a positive member of our community.'

'At the moment it's fairly affordable but in boom times accommodation becomes extremely expensive.'

In relation to employment and local services, 94% (76 people) felt more diverse job options were needed, noting:

'We need to have a diverse range of job options so we can attract families to our community which will in turn keep our town running.'

'We are ultimately a mining town but we also have our support services and local businesses provide job opportunities.'

'There are limited local business that provide work opportunities - mostly staffed with regulars with limited hours of employment or family owned and operated.'

Health services were also an area of high concern with 91% feeling that more community and health services were required, noting:

'We travel away for a lot for our medical services which puts a strain on work, families and the whole area.'

'With the lack of permanent residents a lot of the funding dollars for health and community services are disappearing from our community.'

'Any regional town is always going to need more health services but all in all, we are well supported.'

The majority of respondents (91%) agreed that Dysart enjoyed a clean environment, and a large proportion agreed that local quality of life was good or better than good (79% or 64 people), comments included:

'We are aware of the number of mines around us and also the great programs that are run by local groups as well as the Isaac Regional Council.'

'Would be better with eight hour shifts and bus service but other than that, good.'

'Quality of life is what you make it Communities are strong when we stick together.'

Middlemount

Middlemount was initially planned to support a population upwards of 4,000³³ and as a result, features ample community facilities. Historic census records show Middlemount's resident population peaked at 2,611 people in 1991.

³³ Queensland Centre for the Government of Queensland. Queensland Places. 2015c.

Middlemount's state primary school (est. 1980) and high school (est. 1988) were amalgamated in 2000 forming the P-12 Middlemount Community School.³⁴ The school is a focal point for a family friendly community, e.g. *'We have a young vibrant population, with some wonderful community focussed residents ... and a variety of safe facilities, which are a benefit to the many families here'*.

Workshop participants identified the school, community health centre, pharmacy and news agency as assets helping to keep the community supported and connected. Population transience and migration of low socio-economic groups to the area were identified as having an impact on local community values and sense of community. A decline in available apprenticeships and local career pathways for Middlemount's young people in the last five years was also mentioned as affecting community aspirations and culture.

No conclusions can be drawn from the small sample size in the community survey however comments that provide insight to the local area include:

'Quality of life is Better than good. Family friendly, safe and accessible'

'With a decreasing population local businesses appear to be suffering. Other factors include online shopping which means residents don't need to aren't spending at other retailers.'

Nebo

Nebo is described as 'a vibrant close-knit community with much local history and a great community spirit'³⁵ e.g. *'We are lucky to have a community that really sticks together when times are tough.'*

Groups who contribute to the lifestyle and amenity of Nebo include Nebo Community Development Group and Nebo News, the school P&C, the Nebo Museum, Nebo Playgroup, the Gym and pool and Bowls Club, the Nebo SES, the town RFB and the Ambulance Committee. Nebo has a number of walking tracks and swimming/fishing holes on the creek.

The Nebo Community Development Group, established in 1997 is focussed on enhancing lifestyle and business in Nebo, by promoting community ownership/involvement in economic development projects, fostering partnerships, and preserving local history.

However, Nebo lacks *'a super market, a day care centre to give families the opportunity to return to work and sports facilities, for which families are required drive to Mackay.'*

Workshop participants identified good levels of social capital amongst a core group in the Nebo community, evidenced by local volunteer membership across multiple organisations, while limitations in capacity to volunteer were noted among the broader community. They described Nebo as a peaceful and friendly town in need of critical infrastructure investment to increase its attractiveness to new families and support the town's growth.

The small survey sample size for Nebo makes it difficult to draw conclusions; however, they provide some indication of local conditions. All eleven respondents agreed that housing access is affordable and that the Nebo community needs more diverse job options, stating:

'Housing was very expensive at the height of the boom. Just before the downturn, quite a number of homes were built in Nebo, and landlords have had difficulty in renting them since.'

³⁴ *Ibid.*

³⁵ Nebo Community Development Group Inc. 2017.

'Currently the only jobs in Nebo not mine related are contract mustering, work at the school or one of the two roadhouses or the hotel. A child care and an aged care facility would provide jobs and opportunities for residents of Nebo who do not work at a mine, and make for much happier families.'

The majority of respondents (90%) also felt quality of life was good or better than good locally, but that the community needed access to more community and health services. Comments included:

'Nebo is a small town which allows people living here to be as involved or not involved as they wish to be.'

'We all adapt; more permanent population can bring more opportunity.'

'Since the mining downturn, we have been struggling to keep the doctor coming once a fortnight. At the height of the boom there was discussion on the possibility of a second Police Officer, however that won't happen any time soon. There are no child care facilities and no aged care facilities.'

Coppabella

Coppabella is described as 'a safe and caring community that provides a wonderful support network'³⁶. Coppabella is a community based around a railway connection that is vital to the growth and prosperity of the export coal industry in the Bowen Basin. The local school supports families living in the township and surrounding cattle properties.

4.2.5 Community cohesion

Each of the SIA study area's towns shows evidence of strong connectedness between residents, as is typical of country towns, but with the added strength of shared employment in mining and agriculture.

For their first ten years, Moranbah, Dysart and Middlemount were one-company towns, which led to very close connections within the community. With the exception of business owners, public servants and Council staff, nearly everyone worked for UDC in Moranbah and Dysart and for Anglo Coal in Middlemount, or belonged to a mining family.

BHP entered the area with the Riverside Mine in 1983, subsequently purchasing UDC, and other mining companies subsequently commenced operations near the three towns, but community bonds drawn from the commonality of employment and shared history remain strong. More than an hour's drive from anywhere, residents have worked together, played sport together and relied on each other. As the communities have matured, families have grown and stayed, and there are now multi-generational families in the towns where grandparents were a rarity during the 1970s.

This has developed very strong social capital (trust, shared norms and a willingness to work together) which has activated development of social, cultural and sporting organisations and led to development of physical capital. Moranbah Workers' Club is an example: established by the community and run by a volunteer board, the Workers' Club is a not-for-profit organisation which operates a family-friendly hub for social interaction and entertainment. The Club also has a Community Partnerships Program which funds community groups through grants and donations, donating more than \$658,000 over the past five years, further supporting community cohesion.

³⁶ Coppabella State School. 2017.

The 'core' of Moranbah's population remains highly connected with strong cohesion, however mining companies' use of larger FIFO workforces has led to fracturing of networks, as long term residents left to be replaced by FIFO workers, and the town incorporated increasing numbers of non-resident workers.

Dysart, though smaller, also developed strong cohesion, reinforced by isolation at three hours' drive to Mackay (to Moranbah's two hours) and Rockhampton. The school along with sporting infrastructure helped to build strong local bonds, and a close knit and mutually supportive society remains today. However, Dysart's cohesion has also been affected by increasing numbers of FIFO jobs, the Norwich Park Mine being placed in care and maintenance, a concentration of accommodation villages on the town's boundary and the decline in the town centre's amenity. Community views canvassed in 2012 regarding the closure of Norwich Park reaffirmed strong family values held by community members, and feelings of anxiety and insecurity expressed in relation to maintaining local employment and livelihoods in Dysart³⁷.

As a smaller and even more remote town, Middlemount also developed strong social capital centred around the school, pool, mines and sporting clubs. Participants in the Middlemount SIA workshop described their community as more cohesive than other mining communities due to the dominance of one major employer locally, which was thought to reduce the potential for friction between different mine workers. There is now a number of other mining and construction companies based in the area, but the town remains strongly connected by work, sporting and family networks.

Nebo is a typical rural small rural town with strong cohesion built on long term bonds between families and neighbours, a self-help mentality and dependence between farming and business operations. This has seen multiple generations contribute to the development of social infrastructure, rural holdings and community activities. Coppabella's strong cohesion is also built on its location as a small town more than 30 km from the nearest centres, but enhanced by the strong bonds between railway workers and families.

Each town now accommodates a large contractor workforce, living either in town or in workforce accommodation villages. Contractors are seen as less active in the community and not committed to the towns. This had led to a division within communities, and to a smaller pool of people to support social resources such as junior sporting clubs.

4.2.6 Effects of Industry trends

Cyclical industry trends create pressure on local communities - in boom times, accommodation shortages, labour draw and competition for local services are among the challenges, whilst industry declines depress employment levels, business activity and community confidence.

All of the potentially affected communities have experienced the cyclic impacts of the coal industry with corresponding fluctuations in their populations (as described in Section 4.3.2). In the most recent industry peak from 2008 until 2012, the Isaac region experienced substantial investment in mining and supporting infrastructure, with cumulative demands causing a severe housing shortage and very high housing prices.

³⁷ Miko, T. (Central Queensland News) 2012; Barrett, R. & Walker, J. (The Australian).

This led to population turnover, as key workers and lower income families were forced to leave, and others 'cashed in' and left. There was also high demand for health services, which sometimes crowded out local residents, and towns experienced a shift in culture as increasing numbers of non-local workers moved in to the towns or used their facilities, hotels and clubs. The number of non-local workers was seen as eroding social capital, using local resources but not giving back to the community. The impacts were also negative for local businesses (who lost the opportunity of servicing locally based workers and families).

In addition to consuming housing stocks which displaced low to moderate income households, the presence of non-local people living in local neighbourhoods was experienced as disruptive. The large numbers of non-residents workers also changed the social dynamic – locals no longer knew most people in town so there was less mutual trust, and hotels and clubs were dominated by non-locals, which discouraged locals from using them. The male to female ratio also increased with subsequent concerns about community safety.

As construction of several projects was completed and coal prices dropped, the local housing market dropped sharply in 2013, non-resident workers moved away and demand for services and supplies dropped.

Resilience has also been challenged by the move to 12-hour shifts by the mining industry (which reduce time for family and community activities), and the drift to FIFO options (which reduces the number of people living and contributing locally). Workshop participants said local organisations were vulnerable to declining rates of participation e.g. *'Moranbah has everything possible to offer but there is serious concern about what will happen to the viability of sports and clubs once key people leave the region.'*

Some long term residents describe the current period as 'a return too normal', however coping strategies such as cost cutting, diversification and strategic management of changing demands have been required across the board.

4.2.7 Resilience

Social resilience exists when communities have the human, social and physical resources to adapt to change whilst maintaining their quality of life. In the SIA study area, these resources include:

- a labour force with high workforce participation and a strong skills base;
- community cohesion and strong social networks;
- currently, sufficient housing options to ensure all social-economic groups have access to good quality affordable housing;
- services and facilities (e.g. education, health, emergency and community support) which support people through the life-cycle and at times of particular need; and
- extensive local experience in responding to the cyclical nature of the mining industry.

With respect to human capital, whilst the Isaac region's skills profile is strongly aligned with the mining industry, there is also significant expertise in management of community services, sporting organisations and rural businesses. Key challenges identified in consultation include:

- maintaining a skills base which can grow and diversify with change;
- ensuring a sufficient pipeline of apprentice and traineeships to support the industry and keep young people in the region; and
- having strategies in place to assist businesses during down times.

Moranbah is very resilient partly due to its size (in comparison to the other towns), role as a district centre, strong social capital and good social infrastructure. Moranbah is also very experienced in dealing with social and economic change, has a larger diversity of management and governance skills than the other towns, and has a wider variety of mining companies active locally.

Dysart and Middlemount are more vulnerable to challenges resulting from the loss or gain of a major employer due to their smaller size. While Nebo is supported by rural operations, the town also services the mining industry and Nebo will continue to experience its cyclic effects. Coppabella largely services the region's mining operations and is indirectly vulnerable to the same cyclical changes.

The current housing affordability in Isaac LGA has been positive for community resilience, seeing new families move in, attracted by affordable country living with excellent amenities. This has included FIFO workers from South East Queensland and coastal regions converting to local jobs and bringing their families. 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.

The concept of economic resilience is applied in different ways and at various geographic scales, with the most common measures for economic resilience relating to measures of overall performance such as change in output and/or employment in response to a specific event or change. A recent paper by Dinh and Pearson puts forward a framework, informed by a review of current literature, to specify and quantify resilience in the context of a community economy³⁸. The researchers found that a community economy is likely to be economically resilient if:

- it has a strong base of community capitals in use, and has a high level of factor mobility;
- it retains a diverse economic structure; and
- it is highly accessible.

As discussed in previous sections, the Isaac region is high in community capital, such as the shared values, mutual trust and networks which enable joint effort towards shared goals) and human capital, which refers to the stock of knowledge or worker characteristics that contribute to their productivity and increases profits.

Issues constraining resilience are likely to include:

- factor mobility (the ability to move factors of production such as labour, capital or land from one production process to another), as economic structures are primarily reliant on the mining and agricultural sectors; and
- the distance between local communities and traveling times to major centres, which constrains employees' choices and portability of labour.

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;

³⁸ Huong Dinh, H. and Pearson, L., 2015.

- 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.

The IRC has a strong planning and implementation focus on economic diversity, working closely with regional leaders to develop effective development strategies and advocating for local outcomes. IRC's current focus includes servicing the mining industry, agriculture and renewable energy sectors, with tourism development also a recent priority, capitalising on natural assets and industrial tourism.

4.3 Population

This section provides analysis of populations and community characteristics in local and regional communities. Data are provided for:

- State Suburbs;
- the Broadsound–Nebo SA2 (which includes Dysart, Nebo and Middlemount) to assist comparison between 2011-2016;
- the Mackay SA4 (which equates to the MIW region), where relevant to the assessment focus (e.g. labour and business supply chains);
- the Mackay LGA for comparison to Isaac LGA (as the MIW region includes and is affected by the Isaac LGA); and
- Queensland averages and medians.

As previously noted, the State Suburb boundaries for Dysart, Nebo and Middlemount were expanded between 2011 and 2016 and as such comparisons for these communities are indicative only. Also of note, ABS makes small random adjustments to cell values to protect the confidentiality of data. These adjustments may cause the sum of rows or columns to differ from table totals.

ABS Census counts of estimated residential population underwent a rebasing process following the first release of Census data. The data used in this section are current for ABS's Community, Expanded, Workforce and Time Series Profiles (as referenced) at 4 October 2017.

4.3.1 Population

The Isaac LGA had an estimated resident population (ERP) of 20,940 people at the 2016 Census 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.

Each local community experienced a decrease in population during 2011-2016, as did the Mackay SA4 led by the Isaac LGA population's decline. Moranbah's population declined from 8,965 to 8,735 (2.6%) and the Broadsound-Nebo SA2 experienced a decrease of 13.9%, which substantially led the Isaac LGA's decrease. Coppabella appears to have experienced the largest percentage decrease at 24.35% (see Table 4-2).

Population decreases during 2011-2016 resulted from contraction in both direct local employment (the result of mining industry redundancies and an increase in FIFO employment), and indirect employment (as businesses supported by construction and mining had less capacity to employ).

Table 4-2: Population change 2011-2016

Community	2016	2011	Change (no.)	Change (%)
Moranbah	8,735	8,965	-230	-2.6
Dysart	2,991	3,003	-12	-0.40
Nebo	753	840	-87	-10.36
Coppabella	466	616	-150	-24.35
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
Mackay SA4	169,688	171,561	-1,873	-1.1
Queensland	4,703,193	4,332,739	370,454	8.6

Source: ABS Census of Population and Housing 2016c. Time Series Profile.

The recent population decline is comparable to that experienced during 1991-2001, when Isaac LGA lost 4,230 people (between 1.1% and 3.3% per year) due to a cyclical downturn in mining activity³⁹. Isaac LGA's population decline reversed in 2002, regaining approximately 5,020 people between 2001 and 2011, before declining again from 2013.

4.3.2 Population growth

Isaac LGA's population has the capacity to continue to grow. Natural growth is expected with births and net migration, and if coal prices continue at levels that inspire industry confidence, population growth may become stronger during the next five years. Department of Industry, Innovation and Science forecasts⁴⁰ indicate that Australian exports of metallurgical coal for steel making are expected to increase year on year between 2018 and 2023, with an average compound annual growth rate of 3.5% per annum. The value of Australian metallurgical coal exports is expected to decrease by an average of 1.2% per annum between 2016-17 and 2022-23⁴¹ weighed down by increasing supply and declining steel production in China⁴².

On this basis, modest but sustained population increases may be anticipated as the result of cumulative increases in local coal production.

The most recent broadhectare study by QGSO⁴³ (which quantified unconstrained residential land supply under the planning scheme and development approvals) indicates that broadhectare land available in the Isaac LGA had a theoretical dwelling yield of approximately 4,500 dwellings, which could accommodate between 11,500 and 15,100 persons, equivalent to 14-21 years' supply (dependent on the growth scenario).

³⁹ QGSO. 2015b.

⁴⁰ Department of Industry, Innovation and Science. 2018. - Forecast tables.

⁴¹ Department of Industry, Innovation and Science. 2018b. p.15

⁴² Ibid p.1

⁴³ QGSO. 2015a.

The most recent population projections by QGSO were produced in 2015 based on ABS estimates and assumptions made at the time. On the QGSO's 'low series' projections, the Isaac LGA's population was projected to reach 24,795 people in 2016 (see Table 4-3) rather than the 20,940 ERP identified in the 2016 Census first release. As such, the projections for 2021 have been considered as being the highest likely level of population growth for assessment purposes. For example, if the Isaac LGA population increases at the forecast average annual rate of 1.09%, the 2021 population would be approximately 500 people less than the projection. Growth beyond 2021 may more closely approach the low series or even medium series projections, depending on the longer term cumulative impacts of existing and new projects. Moranbah is expected to generate much of the growth, with a forecast annual average growth rate of 1.9% (medium series projections). QGSO is currently revising the projections with the next release anticipated in 2018. The 2018 version will be incorporated in the monitoring framework for the Project's SIMP.

Table 4-3: Population projections 2016-2036

	2011 (b)	2016	2021	2026	2031	2036	(no.)	Ann. Av.
Isaac LGA	23,188	24,795	25,785	27,013	28,304	29,530	6,342	1.09%
Mackay SA4	171,564	185,382	194,148	204,688	215,950	227,497	55,933	1.30%

Source: QGSO population projections, 2015d edition (low series).

4.3.3 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). The increase of Indigenous people in the Isaac LGA was evidently higher than the Queensland rate of increase, and anecdotally, more Barada Barna people have moved back to the Isaac LGA since the determination of their Native Title claim.

Indigenous Australians represented a larger proportion of the resident population in Dysart (4.5%) and Coppabella (4.7%) compared to the State average, and in Nebo (4%) and Moranbah (3.9%) compared to the LGA average (see Table 4-4).

Table 4-4: Indigenous population percentage 2016

Area	% Indigenous
Moranbah	3.9
Dysart	4.5
Nebo	4
Coppabella	4.7
Middlemount	3.5
Isaac LGA	3.6
Queensland	4

Source: ABS Census 2016 Community Profiles

4.3.4 Non-resident population

Use of non-resident production workforces in the Bowen Basin commenced in the 1990s but increased substantially during the 2000's, reaching a peak of 25,035 people in June 2012. At the peak Isaac LGA had the largest non-resident to resident population ratio of all resource LGAs in the Bowen, Surat and Galilee Basins, with 72 non-residents for every 100 residents in 2012, which fell to 43 per 100 in 2015.⁴⁴

QGSO's *Bowen Basin Population Report*⁴⁵ provides provisional Full Time Equivalent (FTE) population estimates (which include residents and on-shift non-resident workers) for towns and LGAs in the Bowen Basin.

As shown in Table 4-5 the Isaac LGA's FTE population was estimated at 31,835 people at June 2017, of whom 10,580 (33.2%) were non-resident workers (NRW). This was an increase of 1,130 people since June 2016.

Three localities in the study area had estimated non-resident populations of more than 1,000 people in 2017 including Dysart (1,605 people or 39.4 % of FTE), Moranbah (2,190 people or 20.5% of FTE) and Middlemount (1,250 people or 40.4% of FTE). Nebo's non-resident population comprised the largest percentage at 45.8% of FTE population. Isaac LGA recorded a large number of non-resident workers on-shift living in rural areas (4,725 people), reflecting the location of several WAVs established outside of town centres. WAVs were utilised by 93.7% of NRW staying in the Isaac LGA, with the remainder staying in hotels, motels or caravan parks.

Data for Glenden are included in Table 4-5 for completeness. The expected current capacity of WAVs is discussed further in Section 4.4.9.

Table 4-5: FTE Population Estimates, Isaac LGA and local communities, June 2017

Area	Resident population(b)	Non-resident population	FTE population	NRW as % of FTE
Moranbah	8,495	2,190	10,685	20.5%
Dysart	2,470	1,605	4,075	39.4%
Middlemount	1,845	1,250	3,095	40.4%
Nebo	525	440	960	45.8%
Glenden	590	325	915	35.5%
Clermont	2,080	45	2,120	2%
Rural areas	5,250	4,725	9,975	47.3%
Isaac LGA	21,250	10,580	31,835	33.2%

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

Urban centres and localities with only one accommodation provider or < 20 non-resident workers aggregated in 'Other towns'.

⁴⁴ QGSO. 2016a.

⁴⁵ QGSO. 2018a.

Series A non-resident population projections (considering current mining projects only) produced by the QGSO⁴⁶ for 2018-2024 anticipate that the non-resident population of Isaac LGA will gradually decline from 10,630 people in June 2018 to 9,720 in 2024. Series B projections include the Series A projections plus projects that are approved but have yet to reach financial close, 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. Series B projections provide the most certainty with respect to projects in the pipeline, and anticipate growth from 2018, peaking in 2022 at up to 11,760 NRW (see Table 4-6). Series B projections have been used in assessing WAV capacity in the Isaac LGA.

Table 4-6: 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. 2018a.

4.3.5 Age and gender

In 2016, the median age in Moranbah, Dysart and Middlemount was lower by six to seven years than the Queensland median of 37 years, Nebo’s median age approached the median, and Coppabella’s population was older with a median age of 38 years.

The mining towns and the LGA experienced an increase in median age between 2011 and 2016 with the exception of Coppabella and Nebo (see Table 4-7).

Table 4-7: Median age 2011-2016

Community	2011	2016	Change (no.)
Moranbah	29	30	1
Dysart	30	31	1
Middlemount	29	30	1
Nebo	35	35	0
Coppabella	40	38	-2
Isaac LGA	31	32	1
Queensland	36	37	1

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

⁴⁶ QGSO. 2018a.

The largest age cohorts in the Isaac LGA in 2016 were the 25-34 year and 5-14 year age groups, followed by the 35-44 year age group, which is consistent with the LGA's working family profile.

The most significant rate of population decline between 2011 and 2016 was among the population aged 20-24 years (down 17.4% since 2011 and representing a loss of 269 residents, including 201 males). The population aged 15-19 years also fell by 16.5% (or 201 people, including 118 males). Consultation participants in each community noted that young people were leaving the region to seek further training and more diverse employment opportunities, particularly in the wake of the mining downturn.

The most significant decline in population numbers was from the cohort aged 35-44 years (down by 25.1% since 2011) and 45-54 years (down by 28.7% since 2011). In Moranbah, participants noted that the working population is leaving at a faster rate, but the older generation is staying, with some older members of the community unable to move until they achieve a sufficient return on their investments. With the workforce outmigration between 2011 and 2016, the Isaac region's gender imbalance decreased from 52.35% male in 2011 to 51.37% male in 2016.

The most significant increase was in the cohort aged 75-84 years (3.7% or 9 people between 2011 and 2016), characteristic of a permanent population growing older in the Isaac LGA.

The median age of Indigenous people in the Isaac LGA at the 2016 Census was 22, which was ten years younger than the non-Indigenous median age. Analysis of age cohorts (Figure 4-3) for Indigenous and non-Indigenous people demonstrates that:

- the largest cohort for Indigenous people was the 5-14 year age group at 23.8% compared to the non-Indigenous percentage of 15.7%;
- the percentage of young people aged 15-24 years and 0-4 years was also higher for Indigenous people at 15.3% and 15.6% respectively; and
- Indigenous people in older cohorts represented much lower percentages than non-Indigenous people, demonstrating earlier mortality.

4.3.6 Cultural diversity

Cultural diversity is represented by the proportions of residents who were born overseas and households where a primary Language Other Than English (LOTE) was spoken (see Table 4-8). The proportion of Isaac LGA residents that were born overseas was relatively low (10%) compared to the Queensland average. In Moranbah, people born overseas represented 12.5% of the population and approximately 4.4% of residents in the Isaac LGA spoke a LOTE at home in 2016, however this was less than half the State average.

Table 4-8: Cultural diversity 2016

Area	% Born O/S	% Speak LOTE at home
Moranbah	12.5	5.9
Dysart	9.1	4.0
Middlemount	12.1	5.3
Nebo	10.2	3.9
Coppabella	6.2	3.2
Isaac LGA	10.0	4.4
Queensland	21.6	11.9

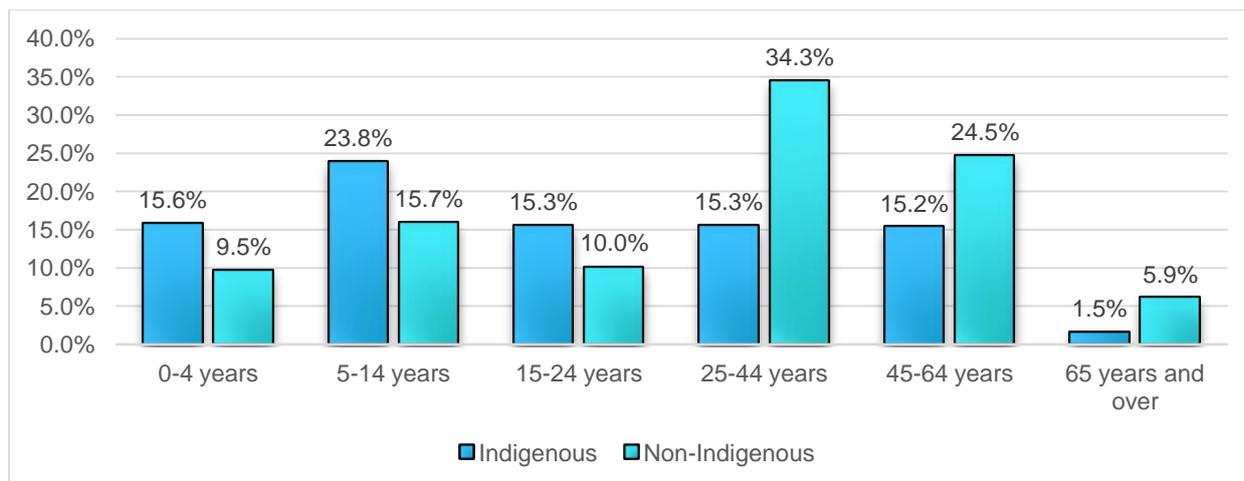
Source: ABS 2016 Census of Population and Housing. General Community Profiles

Figure 4-2: Isaac population pyramid 2011- 2016



Source: ABS Census of Population and Housing. 2011a Basic Community Profile. 2016a General Community Profile.

Figure 4-3: Indigenous and non-Indigenous age cohorts 2016



Source: ABS Census of Population and Housing. Aboriginal and Torres Strait Islander Peoples (Indigenous) Profile for Isaac LGA. 2016d.

4.3.7 Family characteristics

Family and household characteristics in the study area at the 2016 Census (see Table 4-9) included:

- a higher proportion of family households in the Isaac LGA (73.9%) compared with the Queensland average (71.8%);
- a higher percentage of sole parent families in Dysart and Moranbah compared with the Isaac LGA, but a lower proportion than the Queensland average (16.5%); and
- higher percentages of sole person households in Coppabella and Nebo.

Table 4-9: 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
Moranbah	30	58	11.4	76.2	20.5	3.3
Dysart	34.4	53.4	12.2	72	25.2	2.8
Middlemount	27.7	63.2	9.1	80.7	17.7	1.6
Nebo	47.5	39.5	10.5	68.9	28.5	2.6
Coppabella	40	51.4	8.6	64.9	35.1	0
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.

4.3.8 Disability

The number and percentage of people with disability can be estimated using the ABS' 'core assistance' measure, which refers to a person's need for help or assistance in self-care, mobility and and/or communication.

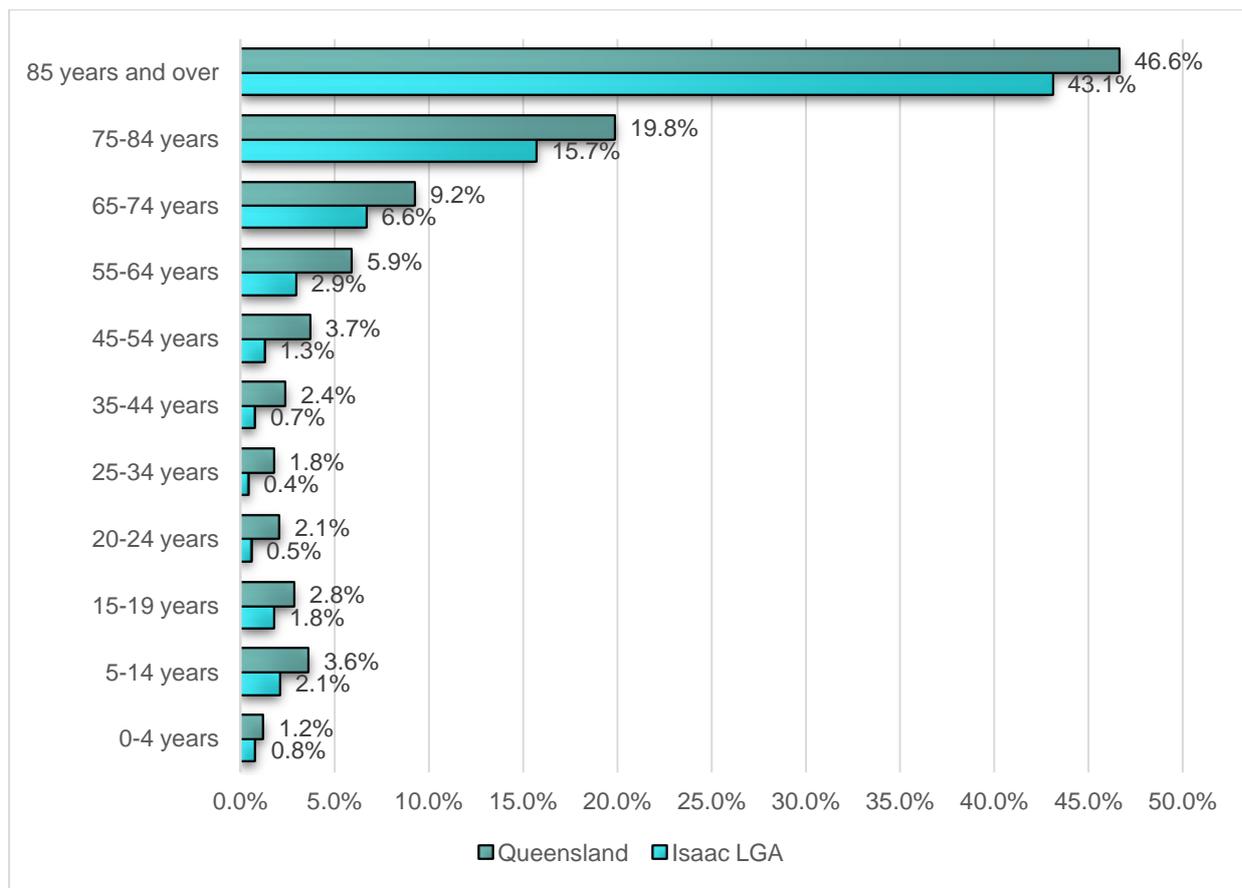
At the 2016 Census, there were 374 people in the Isaac LGA with a need for core assistance and, at the March 2017 quarter, there were 211 people in receipt of a disability support pension which was a rate of 1.2 per 100 people compared to Queensland's rate of 4.1⁴⁷.

Figure 4-4 shows the percentage of each age cohort with a need for core assistance, and indicates that the rate of disability was lower in Isaac LGA than the State average for every age group. In total, 1.8% of Isaac LGA's population had a need for core assistance, compared to 5.2% in Queensland.

The low overall percentage is in part attributable to the LGA's younger age profile, but also the fact that services and physical access (such as all-ability pathways and parks) for people with disability in the LGA are patchy at best. Higher percentages were seen in the older age groups, which is of concern given the paucity of aged care support services available locally.

⁴⁷ QGSO. 2017a.

Figure 4-4: Core assistance need by age group 2016



Source: ABS 2016 Census of Population and Housing, Isaac LGA Indigenous Community Profile

4.3.9 Education

At the 2016 Census, there were 3,632 school students in the Isaac LGA, of whom 214 students (5.9%) were Indigenous. This included:

- 322 preschool students;
- 2,225 primary school students; and
- 1,085 secondary students.

Another 613 people in the Isaac LGA were undertaking higher education courses, with 261 students undertaking a technical or further vocational education program and 352 students undertaking university or other tertiary studies in the LGA.

Table 4-10 presents the education characteristics in the Isaac LGA relative to the Queensland average for Indigenous and non-Indigenous residents. Only 8.1% of the Indigenous student population in the LGA was undertaking a higher education course, compared to 13.2% of the LGA’s non-Indigenous student population, both of which were below the Queensland averages for higher education.

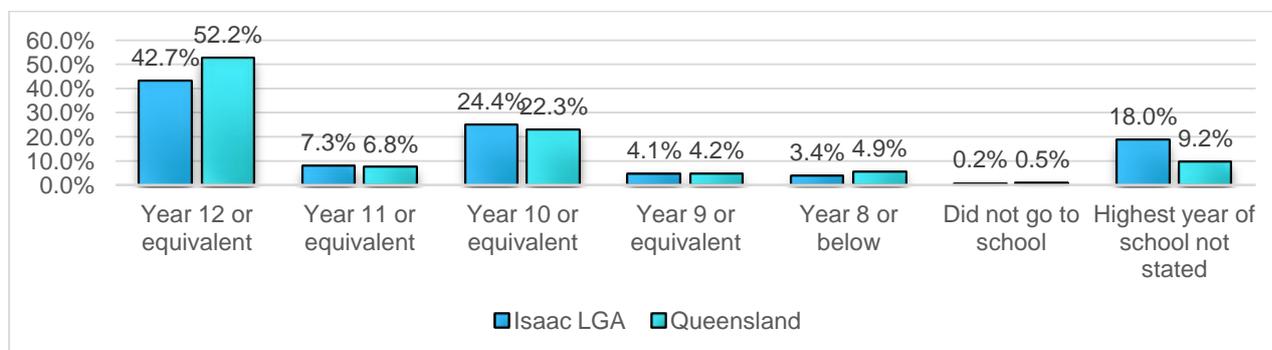
Table 4-10: Education participation 2016

Institution	Indigenous No.	Non-Indigenous No.	Status not stated No.	Total No.	IRC Indigenous %	IRC Non-Indigenous Total %	QLD Indigenous %	QLD Non-Indigenous Total %
Preschool	18	297	3	322	6.6	6.7	4.9	4.8
Infants/Primary	124	2,063	41	2,225	45.8	46.7	39.8	33.5
Secondary	72	996	19	1,085	26.6	22.6	26.8	25.1
Total School Students	214	3,356	63	3,632	79.0	76.0	71.4	63.3
Technical / Further Education	9	247	0	261	3.3	5.6	4.3	6.7
University / other Tertiary Institution	13	335	0	352	4.8	7.6	6.3	18.9
Total Higher Education Students	22	582	0	613	8.1	13.2	10.7	25.6
Other type of Institution	4	104	4	118	1.5	2.4	2.4	3.2
Type of Institution not stated	28	367	2,756	3,147	10.3	8.3	15.5	7.8
Total	271	4,413	2,822	7,506	100.0	100.0	100.0	100.0

Source: ABS 2016 Census of Population and Housing, Isaac LGA Indigenous Community Profile

At the 2016 Census, 42.7% of the LGA'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 4-5).

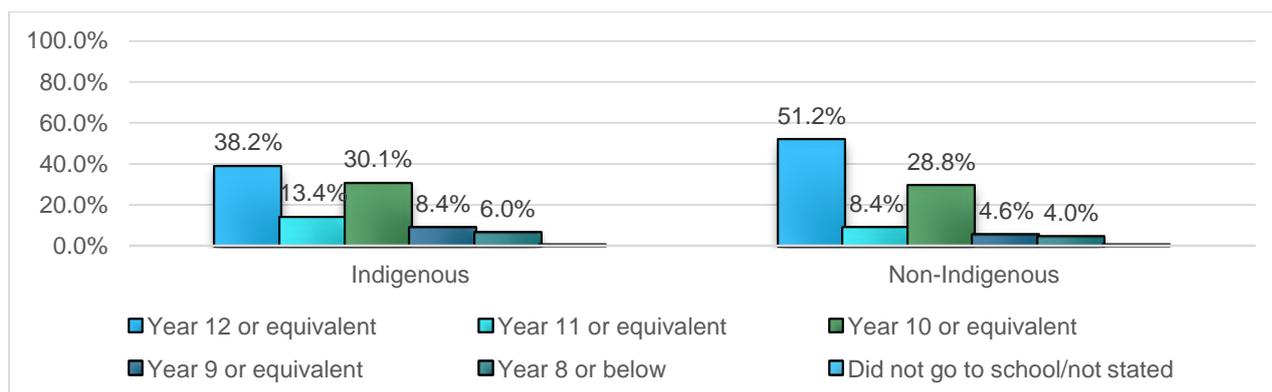
Figure 4-5: Highest year of school completed 2016



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

Approximately 38.2% of Indigenous residents in the Isaac LGA had completed Year 12, compared to 51.2% of non-Indigenous people. While 43.5% of Indigenous residents had completed school at Year 10 or 11, 14.4% had completed Year 8 or 9, more than the 8.6% of non-Indigenous people that had completed Year 8 or 9 (see Figure 4-6). Lower rates of educational attainment lead to restricted employment pathways.

Figure 4-6: Indigenous and non-Indigenous high school attainment 2016



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

Data on post-school qualifications in the Isaac LGA are shown in Table 4-11, with Mackay LGA and Queensland data for comparison. The percentage of Isaac residents with a qualification was higher than the Queensland average. Both Isaac and Mackay had very high percentage of certificate-qualified residents, reflecting the high number of people with trade qualifications.

Table 4-11: Qualifications 2016

	Degree		Diploma/ Advanced diploma		Certificate		Persons with a qualification		Total 15 yrs+
	No.	%	No.	%	No.	%	No.	%	No.
Isaac	1,621	10.4	800	5.1	4,123	26.4	9,523	60.9	15,641
Mackay	9,687	10.6	5,765	6.3	24,391	26.7	50,912	55.8	91,204
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. 2017a. Queensland Regional Profiles - Isaac Local Government Area.

4.4 Housing and accommodation

This section describes housing and accommodation in the local towns and the Isaac LGA.

4.4.1 Dwelling type and occupancy

Table 4-12 shows the total number of private dwellings, occupied dwellings and type of dwellings for each of the study area towns and the Isaac LGA, with Queensland averages for comparison. Of note:

- Moranbah had the largest number of private dwellings at 3,659, of which 29.2% were unoccupied on the Census day. Of occupied dwellings in Moranbah, 81.3% were separate houses and 17.5% were attached dwellings;
- the second highest number of private dwellings was in Dysart at 1,385, of which 41.4% were unoccupied;

- Middlemount had the third largest number of dwellings at 870, with the highest rate (43.9%) of dwellings unoccupied; and
- there was a very small percentage of attached dwellings in Nebo (2.6%) and none in Coppabella. Both towns also had high rates unoccupied dwellings at 39.7% and 41.6% respectively.

Collectively between the five towns, there were more than 2,200 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 a large number of homes owned by mining companies which is currently not in use. Of note, housing within Coppabella is owned by Aurizon and is not currently publicly available.

Table 4-12: Private dwelling types 2016

	Moranbah	Dysart	Middlemount	Nebo	Coppabella	Isaac	Qld
Separate house	2,106	739	429	210	55	5,339	1,269,653
Separate house % occupied dwellings	81.3%	91.0%	87.4%	90.9%	101.9%	86.3%	76.6%
Semi-detached, row, terrace or townhouse	280	22	39	0	0	353	174,984
Flat or apartment	172	43	7	6	0	312	186,778
Attached dwellings % occ. dwellings	17.5%	8.0%	9.4%	2.6%	0.0%	10.8%	21.8%
Other dwellings	31	4	3	5	0	128	16,815
Total occ. dwellings	2,590	812	491	231	54	6,186	1,656,831
Unoccupied dwellings	1,069	574	382	148	37	3,253	195,570
Unoccupied %	29.2%	41.4%	43.9%	39.7%	41.6%	34.5%	10.6%
Total private dwellings	3,659	1,385	870	373	89	9,440	1,852,407

Source: ABS Census of Population and Housing, 2016a. General Community Profiles. Total includes 52 dwellings in Isaac LGA whose form was not stated.

4.4.2 Housing tenure

Housing tenure in the study area is shown in Table 4-13. The most striking feature is the percentage of rented dwellings, which ranges 94.9% in Middlemount (where the majority of houses are owned by mining companies) to 44.2% in Nebo (where the rural history sees a higher percentage of dwellings privately owned). Moranbah, Dysart and Coppabella also had percentages of rental tenure more than twice the State average.

The other key feature of all towns except Nebo is the very high percentage of 'other landlord type' which in the mining towns largely equates to dwellings owned by mining companies, and in Coppabella equates to the dwellings owned by Aurizon. The percentage of occupied dwellings owned by other landlords ranged from 77.8% in Coppabella to 71.5% in Middlemount, 41% in Moranbah and 34.5% in Dysart, but in Nebo was only 7.8%. 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%.

Table 4-13: Housing tenure 2016

Tenure	Moranbah	Dysart	Middlemount	Nebo	Coppabella	Isaac	Queensland
Owned outright	220	133	10	51	6	1,093	471,407
Owned with a mortgage	320	97	8	62	0	913	558,439
Rented	1,984	562	466	102	42	3,928	566,478
Rented as % of all dwellings	76.6%	69.2%	94.9%	44.2%	77.8%	63.5%	34.2%
Rented - other landlord type	1,061	280	351	18	42	2,153	28,143
Percentage other landlord type of rental dwellings	53.5%	49.8%	75.3%	17.6%	100.0%	54.8%	5.0%
Other landlord as % total dwellings	41.0%	34.5%	71.5%	7.8%	77.8%	34.8%	1.7%
Rented - real estate agent	728	195	83	62	0	1,192	352,216
Rented - person not in same household	92	53	12	18	0	325	114,992
Rented - State or territory housing authority	65	17	8	0	0	119	52,858
Rented - housing co-op/community/ church	3	3	5	0	0	19	8,675
Total percentage social housing of all dwellings	2.6%	2.5%	2.6%	0.0%	0.0%	2.2%	3.7%
Landlord type not stated	37	7	5	12	0	117	9,597
Total	1,984	562	466	102	42	3,928	566,478
Percentage rented	76.6%	69.2%	94.9%	44.2%	77.8%	63.5%	34.2%
Other tenure type/not stated	71	24	10	11	7	258	60,510
Total	2,590	812	491	231	55	6,186	1,656,831

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

Whilst housing costs in the Isaac LGA have normalised over the past five years (see Section 4.4.4), the high percentage of dwellings owned by companies prevents a normalisation of ownership, and leaves communities vulnerable to industry trends and policy changes.

4.4.3 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 mining towns 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 temporary dwellings such as caravans and shipping containers shoe-horned onto residential blocks, multiple workers sharing single dwellings in local neighbourhoods, and local people forced to share 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 several 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 Moranbah, Dysart and Coppabella also contributed to a decrease in housing demand for non-residential workers. 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 2016 which included:

- \$137,000 in Isaac LGA (down from \$519,500 in 2012);
- \$180,000 in the Central Highlands (down from \$410,000 in 2012); and
- \$325,000 in the Mackay LGA (down from \$418,000 in 2012)⁴⁸.

4.4.4 Rental housing

As shown in Table 4-14, there were 131 rental dwellings (110 houses and 21 units) listed on the private market in the potentially impacted communities in early July 2018, down from 201 dwellings in July 2017.

There were 50 listed rental dwellings in Moranbah, 54 in Dysart and 21 in Nebo. Middlemount's private rental pool was small, reflecting the high proportion of mine-owned housing there.

At July 2018, median rents for houses were lowest in Dysart at \$170/week, and highest in Moranbah at \$290/week (reflecting the amount of higher quality stock)⁴⁹. Based on a small number of available rental dwellings, median weekly rents in Middlemount were \$250 for houses, and in Nebo, \$260/week. By comparison, median weekly rents for houses in the Mackay postcode were \$280/week in the same period, confirming that the Isaac region's rental housing costs has normalised.

⁴⁸ QGSO 2017b.

⁴⁹ RealEstate.com.au. 2017.

Notwithstanding, 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. 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.

Table 4-14: Rental Dwellings at July 2018

Town	Jul-18			Jul-17		
	Houses	Units	Total	Houses	Units	Total
Moranbah	38	12	50	86	33	119
Dysart	52	2	54	42	8	50
Middlemount	3	3	6	12	5	17
Nebo	17	4	21	11	4	15
Total	110	21	131	151	50	201

Realestate.com.au. 2018.

Rental vacancy rates provided by SQM Research indicate that in early July 2018:

- Moranbah had a rental vacancy rate of 0.8%, down from 7% in June 2014;
- Dysart had a vacancy rate of 5.7%, down from 11% in June 2014;
- in Middlemount, the vacancy rate was 1.8%, down from approximately 4.5% in June 2014; and
- in Nebo, the vacancy rate was 8.2%, up from 0% in June 2014.

These data indicate that, following the slump during 2013-2014, demand for rental housing has increased during the past three years. The local population has driven part of this demand, as young people and key workers are now able to afford rental housing, however people attracted to towns' affordable housing and lifestyle have also moved in. As rental vacancy rates drop below 3%, experience indicates that rental price increases are likely. However, consultation for the SIA indicated that rental vacancy rates are higher than the listed figures, largely because most houses owned by mining companies are privately managed and not registered on the market.

As previously noted, the percentage of unoccupied dwellings in the study area towns ranged from 29.2% to 43.9% in 2016, and there was a total of 1,710 'other landlord type' rental dwellings between Moranbah, Dysart, Middlemount and Nebo. This also suggests that a number of houses owned by mining companies are vacant.

4.4.5 Housing purchase

Table 4-15 is based on the analysis of realestate.com.au listings for local towns at the beginning of October 2017⁵⁰. Between Moranbah, Dysart, Middlemount and Nebo, there were 122 houses available for purchase, ranging from small 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 and Nebo. There were also 20 units available for rent, mostly with two bedrooms. As shown in Table 4-15, 78 of the dwellings for purchase were in Moranbah, representing around 55% of the total.

Table 4-15: Dwellings for purchase at October 2017

Town	Houses	Units	Total
Moranbah	69	9	78
Dysart	26	4	30
Middlemount	6	5	11
Nebo	21	2	23
Total	122	20	142

Source: Realestate.com.au. 2017.

As shown in Table 4-16, the median sales price for houses in Moranbah in the last year was \$160,000. Compared to the same period five years ago, the median house sales price for houses decreased by 77.8%, which equates to a compound annual growth rate of -26.0%. This however was relative to a highly inflated peak median cost of \$708,000 in 2012.

In Dysart, the median sale price was much lower at \$85,000, with a higher five-year change at (84.4%) or an annual compound change of -31%. Limited data were available for Middlemount and Nebo. By comparison, the median sales price for houses in Mackay postcode (4740) was \$250,000, which compared to the same period five years ago, was a decrease of 39.1% or a compound annual decrease of 9.4%.

The range of asking prices for houses at the end of September 2017 was:

- in Moranbah, \$145,000 for an older three bedroom house, to \$875,00 for a five bedroom house;
- in Dysart, \$89,000 for an older three bedroom house, to \$150,000 for a five bedroom house;
- in Middlemount, \$55,000 for a small two bedroom house, to \$250,000 for a four bedroom house; and
- in Nebo, \$140,000 for a three bedroom house, to \$650,000 for a large six bedroom house with motel style accommodation.

⁵⁰ RealEstate.com.au Investor Information – House price data last updated 25 September 2017.

Table 4-16: Housing costs trends

Town	Median sale price	Five year change	Annual compound change	Price range 2017	
Moranbah	\$160,000	-77.8%	-26%	\$145,000	\$875,000
Dysart	\$85,000	-84.40%	-31%	\$89,000	\$150,000
Middlemount	N/A	N/A	N/a	\$55,000	\$250,000
Nebo	\$99,000	N/A	N/A	\$140,000	\$650,000

Source: Realestate.com. 2017

4.4.6 Social housing and homelessness

In Moranbah, 2.6% of all dwellings (68 dwellings) were social housing dwellings, with the same percentage (13 dwellings) in Middlemount, whilst in Dysart 2.5% of dwellings were social housing (20 dwellings). In total, the three towns had 101 social dwellings (see Table 4-13). The level of social housing (owned by either the State or a community or church organisation) was lower in the study area towns than the Queensland average and was non-existent in Nebo and Coppabella.

Table 4-17: Social housing 2016

Tenure	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 Census of Population and Housing, 2016a. General Community Profiles.

The key social housing providers in the Moranbah/Dysart area are Emergency and Long Term Accommodation Moranbah (ELAM) and the Isaac Affordable Housing Trust (IAHT). ELAM manages a portfolio of public and community-owned housing, but is reviewing their housing stock in light of changing needs. ELAM advised that there are approximately 30 vacant public housing dwellings in Moranbah. IAHT is a not for profit organisation which manages recently constructed affordable housing, including houses, units and duplexes in Moranbah, Dysart and Clermont. IAHT currently has vacancies for affordable housing in Moranbah and Dysart.

On the advice provided by ELAM and IAHT, demand for affordable and social housing in the local area is being met, however consultation participants noted that public housing tenants with high needs are referred to Moranbah and *'the region is bereft of the support and resources that they need'*. This was attributed to Department of Housing criteria. Consultation with DHPW confirmed that at August 2017, no one living in the Isaac LGA was on the waiting list for public housing.

Estimates of the prevalence of homelessness in the SA2 Study area, based on the 2011 Census are shown in Table 4-18 and indicate approximately 74 residents within Moranbah SA2 were homeless in 2011, and a further 25 were homeless across the Broadsound-Nebo SA2. The higher estimates for Moranbah are likely to reflect the housing shortage between 2007 and 2012, where some local residents were displaced due to affordability.

Table 4-18: Homelessness estimates 2011

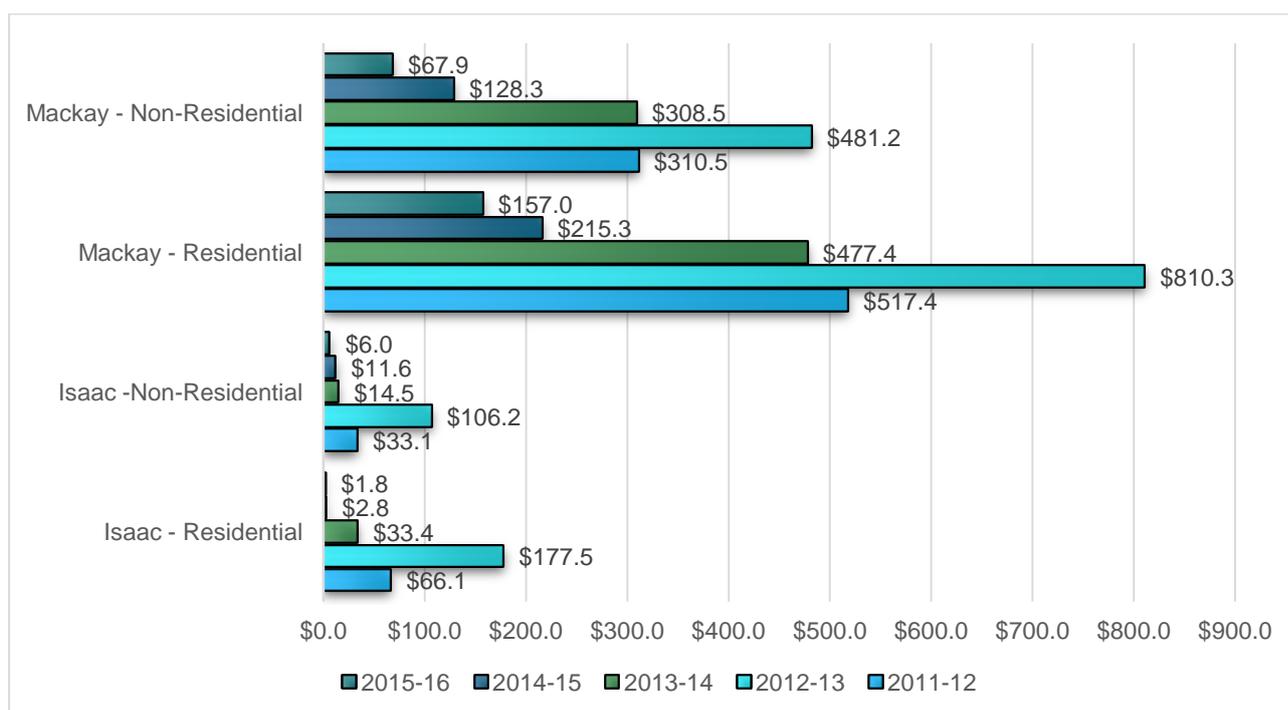
Homelessness estimates	2011
Moranbah SA2	74
Broadsound – Nebo SA2	25
Mackay SA4	890

Source: ABS Census of Population and Housing: Estimating homelessness. 2011.

4.4.7 Building approvals

Data sourced from REMPLAN’s analysis of ABS’ monthly Building Approvals are shown in Figure 4-7, as \$/million for Isaac LGA, with the Mackay LGA as a comparator. Building approvals include construction of new buildings, alterations and additions to buildings, and approved renovation and refurbishment. The data indicate that building approval values peaked in both LGAs during 2012-13, and then declined, with the value of residential approvals in Isaac LGA declining from \$177.5 million in 2012/13 to just \$1.8 million in 2015/2016. This accords with lower rates of housing demand.

Figure 4-7: Building approvals value Isaac and Mackay LGAs 2015/16



Source: QGSO. 2017a. Queensland Regional Profiles - Isaac Local Government Area.

4.4.8 Workforce accommodation villages

The Project intends to accommodate its non-resident construction personnel in WAVs in Moranbah or near Coppabella. During operations, there may be a need to accommodate non-resident workers in WAVs in Moranbah, Dysart or Coppabella.

Data provided by IRC indicate that at June 2018, there was a total of 19,052 existing WAV beds in the Isaac LGA, with a total approved capacity of 31,698 beds (including existing beds).

Table 4-19 shows the number of existing WAV beds and the total approved beds (including existing beds) in Moranbah, Dysart and Coppabella. Some of the WAVs are mine-specific, i.e. they accommodate personnel from a specific mine and would not be available to the Project. The number of WAV beds which are non-mine specific and potentially available to the Project include:

- in Coppabella, 3,048 existing beds and a potential total capacity of 4,616 beds;
- in Dysart, 2,028 existing beds and a potential total capacity of 2,342 beds; and
- in Moranbah, 3,960 existing beds and a potential total capacity of 11,450 beds.

Table 4-19: WAV Accommodation, Coppabella, Dysart and Moranbah

Camp	Existing beds	Total beds approved
Coppabella		
ESS Compass Group - Moorvale Terowie Accommodation Village MS	548	796
Civeo Coppabella (formerly the Mac)	3,048	3,048
QRI Services - Coppavillage Accommodation Centre MS	235	300
Martoo Consulting	0	510
Picardy Station Contractors Camp (removed from site)	0	1,058
Coppabella - General Access	3,048	4,616
Coppabella Total	3,831	5,712
Dysart		
BMA Dysart Village MS	430	691
Lake Vermont Village MS	637	637
Civeo Dysart Village (formerly the Mac)	1,798	1,932
Stayover by Ausco	410	410
Dysart - General Access	2,208	2,342
Dysart Total	3,275	3,670
Moranbah		
Moranbah SPV BMA Village (Moranbah Accommodation Village) MS	567	567
Curtin House (closed but rooms remain at site) MS	62	62
Ausco	0	546
Civeo Mine Accommodation Village, Acacia Street (formerly Mac)	1,240	1,240
Civeo Mine Accommodation Village, Railway Station Road (formerly Mac)	0	3,258
Spotless - Grosvenor Village Moranbah North	498	498
Buffel Village Caval Ridge MS	1,442	1,945
Caval Ridge Fly Camp (decommissioned and removed from site)	0	616
Morris Corporation	52	52
Moranbah Smart Stay Villages	144	144
Leichardt Accommodation Village	540	540
Coal Country Caravan Park	0	486
Red Hill Mine	0	3,000

Camp	Existing beds	Total beds approved
ESS Compass Group - Eureka Village Camp	1,486	1,486
Daunia Mine Village MS	300	300
Lancewood (decommissioned)	0	200
MCG Quarry MS	80	80
Moranbah - General Access	3,960	11,450
Moranbah Total	6,411	15,020

Source: IRC Data, 2018

4.4.9 Short-term accommodation

Short-term, temporary accommodation facilities in the local area are listed in Table 4-20 and include:

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

Short-term accommodation is primarily used for accommodation of mine and railway workers, sales businesses, public service, and social services staff. Block bookings are common, to accommodate multiple and extended stays.

Between June 2015 and June 2016, the proportion of rooms that were vacant and available in the Isaac LGA remained unchanged at 72%⁵¹.

Table 4-20: Short-term accommodation, SIA local Study area

Facility	Moranbah	Nebo	Dysart	Middlemount	Coppabella
Moranbah Motor Inn	✓				
Moranbah Drivers Rest Motel	✓				
Black Nugget Hotel/Motel	✓				
Moranbah Outback Motel	✓				
Western Heritage Motel	✓				
Moranbah Isaac Hotel	✓				
Coal Country Caravan Park	✓				
Moranbah Caravan Village	✓				
Oaks Moranbah	✓				
Nebo Hotel		✓			

⁵¹ QGSO. 2016a.

Facility	Moranbah	Nebo	Dysart	Middlemount	Coppabella
Stay-a-While Caravan Park		✓			
Nebo Motor Inn		✓			
Nebo Service Centre Motel		✓			
Jolly Collier Motor			✓		
Country Roads Motor Inn			✓		
Queensland Coal Fields Hotel			✓		
Middlemount Hotel/Motel				✓	
Oaks Middlemount				✓	
Capricorn Villas				✓	
Coppabella Caravan Park					✓

Source: Google Maps. 2017. Yellow Pages Business Listings. 2017.

4.5 Disadvantage, income, and cost of living

The following subsections describe income levels, wages and salaries by industry, and cost of living factors in the study area, including access to the internet.

4.5.1 Income

As shown in Table 4-21, median weekly incomes for individuals and households in the study area in 2016 were consistently above the Queensland median. In 2011, Moranbah residents earned more than twice the average personal and household incomes of Queenslanders, however median household income in Moranbah dropped by 12.9% in the five-years to 2016. By contrast the Queensland’s household weekly income increased by 13.5% over the five years.

Whilst the gap between the averages narrowed, median individual incomes in Moranbah were still 83% higher than the Queensland median in 2016. Similar patterns were seen in Dysart, where median household income dropped by 21% and personal incomes by 13.2% between 2011 and 2016, and Middlemount where personal and household incomes in 2016 were also above the State and LGA average, but had declined by 9.8% and 14.8% respectively over the five years. Nebo’s personal and household income averages grew between 2011-2016 (up 7.6% and 8.2%), remaining above the Queensland average, but below the LGA average.

Table 4-21: Median weekly individual and household incomes, 2011-2016

Income	Moranbah	Dysart	Middlemount	Nebo	Coppabella	IRC	QLD
2016							
Individual weekly income	\$1,209	\$1,113	\$1,365	\$958	\$1,830	\$1,030	\$660
Household weekly income	\$2,421	\$2,152	\$2,405	\$1,710	\$2,328	\$2,138	\$1,402
2011							
Individual weekly income	\$1,275	\$1,282	\$1,514	\$890	\$1,386	\$1,052	\$587
Household weekly income	\$2,778	\$2,724	\$2,822	\$1,580	\$2,601	\$2,579	\$1,235

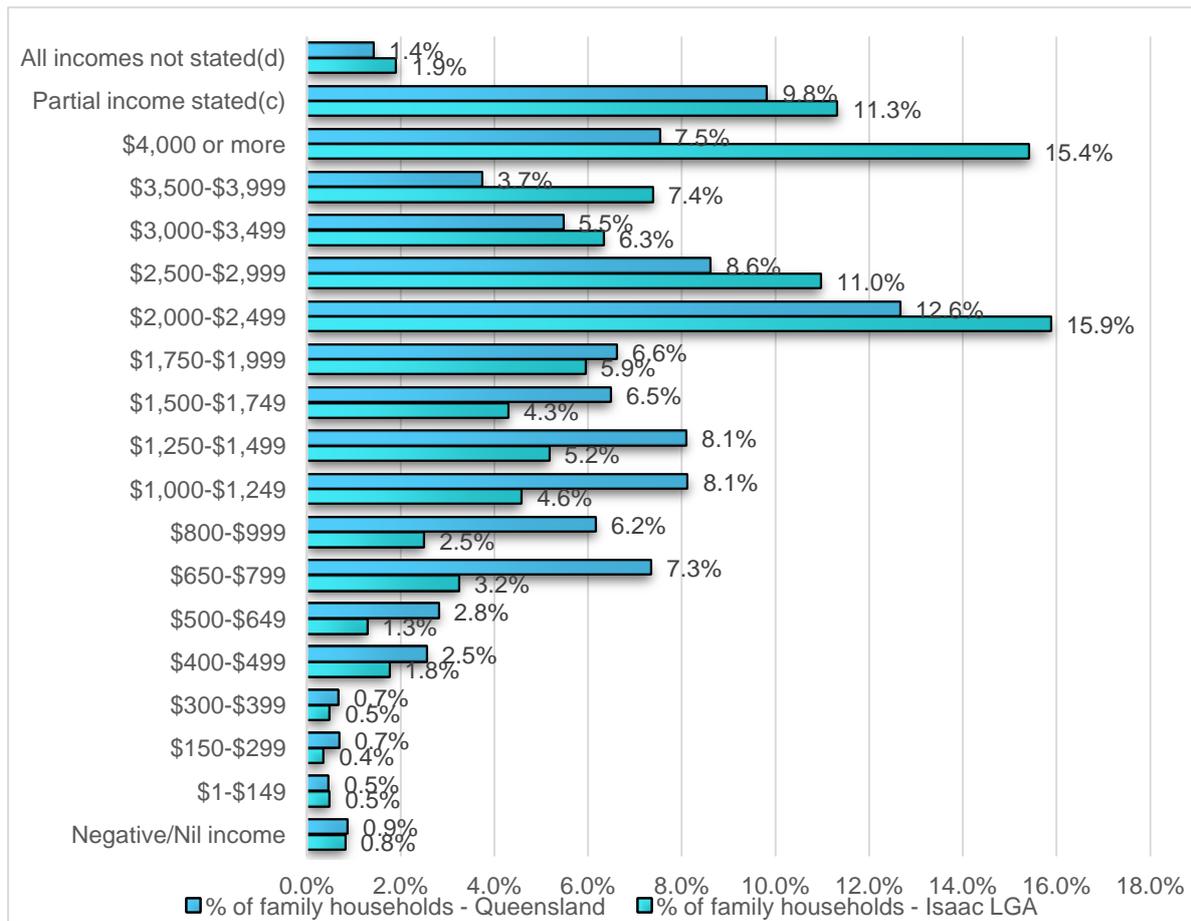
Income	Moranbah	Dysart	Middlemount	Nebo	Coppabella	IRC	QLD
Change 2011-2016							
Individual weekly income	-5.2%	-13.2%	-9.8%	7.6%	32.0%	-2.1%	12.4%
Household weekly income	-12.9%	-21.0%	-14.8%	8.2%	-10.5%	-17.1%	13.5%

Source: ABS Census of Population and Housing, 2016a General Community Profiles, 2011a. Basic Community Profiles.

Data in Figure 4-8 show large proportions of households on higher incomes. The most common income ranges for Isaac LGA were \$2,000-\$2,499/week (15.9%) and \$4,000/week or more (15.4%). Just 4% of family households in Isaac LGA had incomes of less than \$500/week. By contrast, 37.9% of Queensland families earned \$2,000 or more/week.

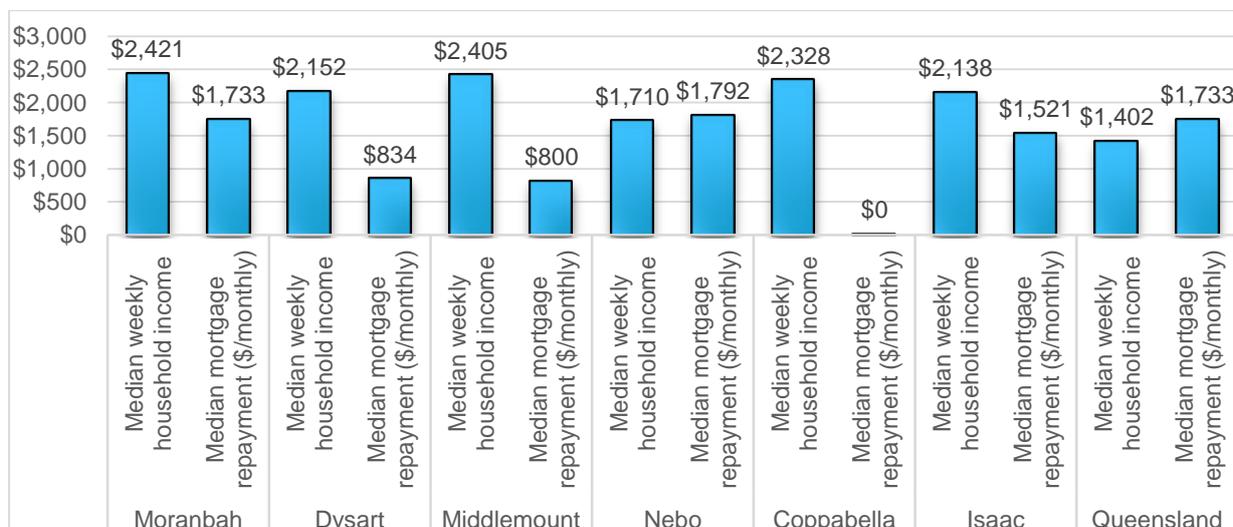
Figure 4-9 compares the median weekly household incomes (all households) to the median mortgage payments in each town, the LGA and the State. Moranbah had the highest median weekly household incomes (at \$2,421) closely followed by Middlemount (\$2,405), Coppabella (\$2,328) and then Dysart (\$2,152) and Nebo (\$1,710). The Isaac LGA median weekly household income (at \$2,138) reflected the mining towns' medians. All median incomes in the local study area were higher than Queensland's of \$1,402. With respect to mortgage payments, Moranbah had a median monthly payment of \$1,733/month, whilst Middlemount and Dysart had median mortgage payment of just \$800 and \$834 respectively. Nebo households' median monthly mortgage payments were the highest in the study area at \$1,792/month.

Figure 4-8: Family households' income groups – Isaac LGA and Queensland 2016



Source: ABS Census of Population and Housing, 2016a.

Figure 4-9: Median household income and mortgage payments 2016

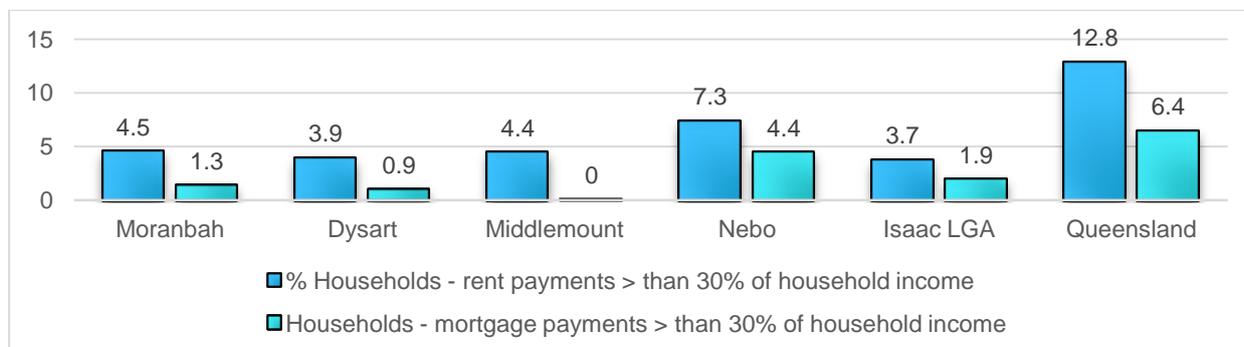


Source: ABS Census of Population and Housing, 2016a.

4.5.2 Housing stress

Housing costs are a major determinant of cost of living. High housing costs may result in overcrowding, financial stress, costs and impacts associated with poor quality dwellings, stresses arising from isolation or poor security of tenure.⁵² The percentage of all households in the Isaac LGA who paid more than 30% of their income for housing costs was low (see Figure 4-10). There were no data for Coppabella due to the high level of subsidised company housing there.

Figure 4-10: Households (%) paying more than 30% of incomes of housing costs 2016



Source: ABS Census of Population and Housing, 2016b. Quick Stats

⁵² Rolfe, J. Akbar, D. and Chapman, P. 2012.

4.5.3 Disadvantage

The Socio-Economic Indices for Areas (SEIFA) Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) summarises information about economic and social conditions, derived from Census variables including income, percentage in skilled occupations, housing expenditure and educational attainment. Scores are compared to the standardised baseline (State) score of 1,000. A low score indicates relatively greater disadvantage. IRSAD scores for 2011 and 2016 for the local communities are shown in Table 4-22. Moranbah, Dysart and Middlemount (and by consequence the LGA) had higher SEIFA scores than the State average in 2011, however the scores for Middlemount, Dysart and the LGA dropped below the State average by 2016, indicating higher potential for disadvantage. Scores for Coppabella and Nebo were lower than the State average in 2011 and 2016, however Nebo's score had risen above the State average by 2016.

Table 4-22: Index of Relative Socio-economic Advantage and Disadvantage 2011-2016

Community	Score 2011	Score 2016
Moranbah	1054	1011
Dysart	1032	956
Nebo	966	964
Coppabella	977	1018
Middlemount	1043	988
Isaac LGA	1028	987

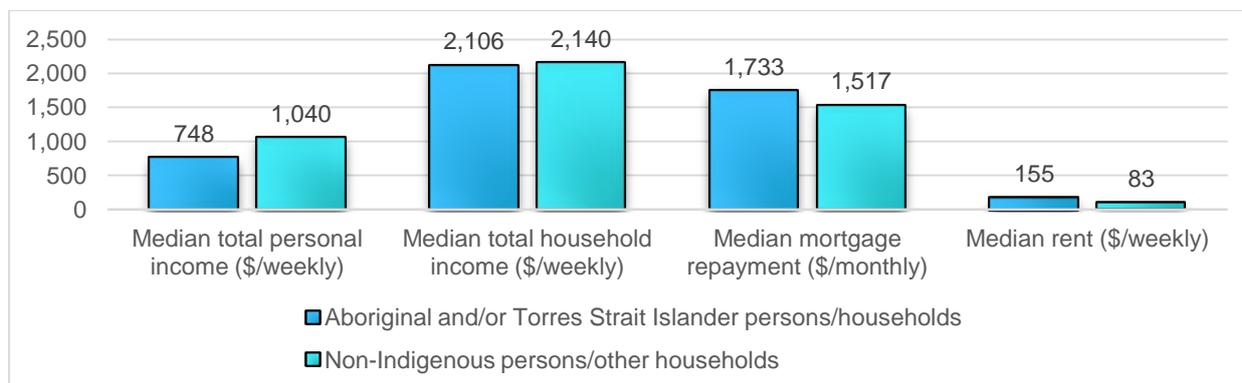
Source: ABS 2017e. 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA), Data Cubes only, 2011 and 2016

Consultation participants (and in particular community service providers) noted that the current affordability of the Isaac region's housing had attracted families and individuals with low-socio-economic resources to migrate to the region. As a consequence, community organisations and schools have been challenged by increasing numbers of high needs families.

Social inequality is demonstrated in the selected medians for the LGA's Indigenous community compared to the non-Indigenous community. Figure 4-11 demonstrates that whilst Indigenous people and Indigenous households⁵³ 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.

⁵³ 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.

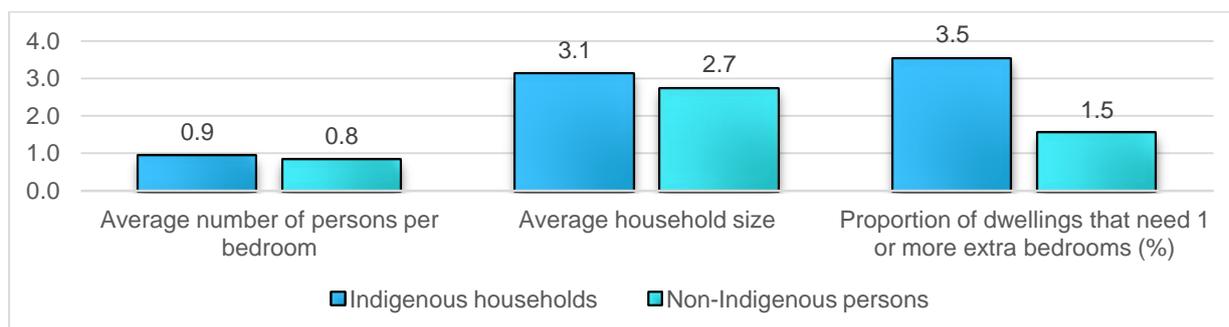
Figure 4-11: Indigenous and non-Indigenous household income and housing cost (\$) 2016



Source: ABS. 2016d. Census of Population and Housing: Aboriginal and Torres Strait Islander Peoples (Indigenous) Profile for Isaac LGA

With respect to the appropriateness of housing to household need, Indigenous households show higher average numbers of people per bedroom and larger average household size (see Figure 4-12). 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 4-12: Indigenous and non-Indigenous housing appropriateness indicators 2016



Source: ABS. 2016d. Census of Population and Housing: Aboriginal and Torres Strait Islander Peoples (Indigenous) Profile for Isaac LGA

4.5.4 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%), Dysart (86.4%) and Coppabella (87.5%). Nebo recorded the lowest percentage of dwellings with an internet connection (75.2%). This measure captures any one person at a dwelling that accesses the internet through any type of device including a mobile phone (see Table 4-23).

Table 4-23: Dwellings with internet connection 2016

Study area	2011		2016	
	No.	%	No.	%
Moranbah	2,317	88.8	2,333	90.2
Dysart	729	86.6	698	86.4
Nebo	187	67.3	176	75.2

Study area	2011		2016	
Middlemount	484	92.5	450	92.2
Coppabella	86	85.1	49	87.5
Isaac LGA	5,573	83.8	5266	85.1

Source: ABS Census of Population and Housing 2016a. General Community Profiles and 2011a. Basic Community Profiles.

4.5.5 Index of retail prices in regional areas

The Index of Retail Prices in Queensland regional centres 2015 (the Index) compares the prices of a basket of household goods and services between the Brisbane region and regional centres. The Brisbane region has an index of 100, and all other centres have an index relative to the Brisbane region. As shown in Table 4-24, total prices paid by Queenslanders varied across the state by up to 37.6%, however Moranbah and Mackay centres (as with Gold Coast, Roma and Toowoomba) recorded an 'All Items Index' similar to the Brisbane region. Table 4-24 shows prices comparisons for groups, all items and all items less housing. Findings relevant to the SIA Study area include:

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

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

Table 4-24: 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: QGSO. 2016b. Index of retail prices in Queensland regional centres

4.6 Community health and safety

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, primarily relating to:

- individual characteristics and behaviours; and
- the social and physical environment e.g. socio-economic characteristics, housing access, and access to health services.

Health determinants in the Isaac region are discussed below.

4.6.1 Individual characteristics and behaviours

The following analysis is based on a comparison of Isaac LGA indicators with Mackay LGA and the Queensland average sourced from the Social Health Atlas of Australia (PHIDU)⁵⁴. Data considered are provided in Appendix A Table A-1. 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 with people living in Queensland as a whole (ASR 17.4 compared with 15.4 respectively);
- more people 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 had high blood pressure (ASR 28.2 compared with 23.2 for Queensland); and
- more people 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). 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 respiratory diseases (ASR 1,789.7 compared to 1,919.0 for Queensland)⁵⁵. This partially reflects the youth of the Isaac population and the nature of their work and leisure pursuits.

4.6.2 Socio-economic factors

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

- high individual and household incomes, although household incomes in Isaac LGA declined between 2011 and 2016 which can create stress about established financial commitments (see Section 4.5);

⁵⁴ Torrens University Public Health Information Development Unit. April 2017.

⁵⁵ *Ibid.*

- a lower proportion of residents in Isaac LGA modelled to have experienced barriers to accessing health care as a result due to cost⁵⁶;
- a lower representation of residents aged over 65 in in the LGA (5.4%) than for Queensland (15.3%); and
- 1.8% had a need for core assistance, compared to 5.2% for Queensland.

Representation of Aboriginal and Torres Strait Islander residents (who generally experience poorer less positive health outcomes than the non-Indigenous community) was also below the State average (3.6% compared to 4% for Queensland). However, measures of income and housing for Isaac LGA indicate distinct inequities between Indigenous and non-Indigenous residents (see Section 4.5.4).

Ageing is also a key determinant, as the risk of poor health increases with age. As shown in Section 4.3.5, the Isaac LGA has a young population.

High housing costs are a cause of individual and family stress, and often of poor health given a lack of disposable income to support health. As noted in Section 4.5.2, 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, some 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 mental health.

A lower percentage of school age children in Isaac LGA were assessed as developmentally vulnerable across two or more domains compared to the Queensland average⁵⁷. Developmental vulnerabilities in childhood can have long term effects on that child's adult life successes, resilience, health and emotional wellbeing. At Isaac LGA level, 9.3% of school-aged children were developmentally vulnerable on two or more domains, which was below the proportion identified for the Mackay LGA (12.4%) and Queensland (14%). Within Isaac LGA, results for AEDC-defined 'local communities' in 2015 identified the following percentages of school aged children as developmentally vulnerable across two or more domains:

- 11.6% of children in Moranbah, above the Isaac LGA average, but below the Mackay LGA and State average;
- 10.5% of children in Dysart, above the Isaac LGA average, but below the Mackay LGA and State average;
- 3.8% of children in Middlemount, below the Isaac LGA average; and
- 6.1% for children in Nebo and surrounds, below the Isaac LGA average.

Please refer to Section 4.5 for further detail on socio-economic factors.

⁵⁶ *Ibid.*

⁵⁷ Australian Early Development Census. 2015. Domains include: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge.

4.6.3 Access to health services

Residents in the Isaac region have access to small district level hospitals in Moranbah and Dysart, and a community health centre in Middlemount. General practitioners (GPs) are located in Moranbah and Dysart, with visiting or on-call services at Middlemount and Nebo. A number of allied health practitioners service the district on a full or part time basis (see Sections 4.9.5 and 4.9.6 for more detail).

However, non-resident workers' demands for health services fluctuate and place pressure on both hospitals and GP services, which sometimes impacts on service waiting times for residents. Also, most specialist services have to be accessed in Mackay (two hours away) or other regional centres, and none of the hospitals in the Isaac LGA operate birthing facilities, which is expensive and stressful for young families.

Consultation with respect to access to health service access indicates that waiting times for GPs have decreased in Moranbah during the past five years, but have increased in Nebo and Dysart. Increasing drug and alcohol use, domestic violence and mental illness were described within each community.

In Nebo, the primary concern is that there is a modern well-equipped health clinic developed through a partnership between the community, Queensland Health and IRC, however population numbers are insufficient to sustain a full time doctor, so access is on a once/week basis.

In Moranbah, the primary concern is 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 non-resident workers and project sites in the district. Recruitment and retention of practitioners and skilled workers was another common issue raised by health service providers in Moranbah, noting a loss of nursing staff and community support workers as mining families relocate.

In Dysart, skilled health worker recruitment and retention was raised as one of the biggest challenges for the hospital as mining families move to pursue employment. Hospital service capacity in Dysart was otherwise 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 Middlemount, service demand has slowed in recent years but remains stable. The Middlemount Medical Centre is serviced and the Middlemount Community Health Centre is nurse-led Monday to Friday. 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. Service providers have indicated that 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.

4.6.4 Environmental qualities

The communities within the study area are serviced by town water supply. Under the Queensland Government's Building our Region's program, the Queensland Government with IRC are investing in critical water infrastructure upgrades in the region, including \$10.59 million Moranbah Reservoir and Associated Works, with practical completion planned for December 2017.

This project 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 requirements⁵⁸. IRC's proposed Nebo Water Supply Project was also shortlisted by the Queensland Government for the mid-year funding round of the Building Our Regions program⁵⁹.

On IRC's advice, mining companies hold water allocations for Moranbah, Dysart and Middlemount, and IRC relies on agreements with industry for town water allocations. This is identified as a matter for discussion between IRC and Pembroke as noted in Section 6.3.

As noted in Section 3.3, workshop participants indicated that dust (identified by residents as coal dust) is affecting amenity in Moranbah, and SIA community survey respondents said that air quality, particularly dust, was a primary concern. Groups such as Environmental Justice Australia and Clean Air Queensland have drawn attention to National Pollution Inventory data indicating that PM10 emissions are high in the study area, claiming that a lack of monitoring of cumulative impacts is endangering health⁶⁰.

PM10 refers to airborne particles less than 10 micrometres in diameter which are generated by windblown dust, industrial processes, engines and fires. PM10 particles are capable of penetrating the lower airways of humans and can cause negative health effects⁶¹.

The DEHP monitors PM10 in Moranbah and publishes the data hourly on its website. Monitoring data are not available for other towns in the study area. 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 months⁶². This is an indication that dust may be problematic in Moranbah. The Isaac Plains Mine is very close to the town's eastern boundary and locals have noted a distinct increase in coal dust (requiring daily surface dusting and washing) in some parts of town since the Isaac Plains mine re-commenced in 2016. Air quality is further discussed in Section 5.6.

4.6.5 Indigenous health

Queensland Health has recently released data on the burden of disease in Queensland's Health and Hospital Service (HHS) regions, based on 2011 data. For the Mackay HHS region, the data indicate that Aboriginal and Torres Strait Islander residents experienced 2.1 times the expected burden of disease and injury compared to Queensland non-Indigenous rates. As a result, there was a gap of 11.8 years in health adjusted life expectancy between Aboriginal and Torres Strait Islander residents in the HHS region and the total Queensland population⁶³.

⁵⁸ Isaac Regional Council. 2017b.

⁵⁹ Queensland Department of State Development. 2016a.

⁶⁰ ABC. 2016.

⁶¹ Department of Environment and Heritage Protection. 2017a.

⁶² Department of Environment and Heritage Protection. 2017b.

⁶³ Queensland Health. 2017.

Consultation with Queensland Health's Aboriginal and Torres Strait Islander Health Unit (Central Queensland) indicated that the key health issues being experienced by Indigenous people remained generally consistent with the 2011 findings. 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 key risk of 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 opportunities.

4.6.6 Mental health

Mental illness is common, potentially affecting 20% of the community in any 12-month period, and suicide is the main cause of premature death among people with a mental illness.⁶⁴ Consultation participants made frequent mention of increased mental health issues in the local area over the past few years, and particularly since Cyclone Debbie (March 2017). Emergency services staff also observed that mental health escorts are requiring heavier resourcing, with patients requiring a paramedic, a nurse and a police officer, and the patient transport process taking up to six hours. Community service providers have recently initiated a suicide prevention partnership to renew and strengthen services and support in the Isaac LGA.

This section considers findings from the Queensland Government's Mental Health Activity Data Collection (MHADC) data set for the SA2 study area for the three-years from July 2012 to June 2015. Figure 4-13 presents the three-year trend in specialised mental health service contacts⁶⁵ for residents in the Moranbah and Broadsound-Nebo 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 Appendix A Figures A-1 and A-2 for supporting data). 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.

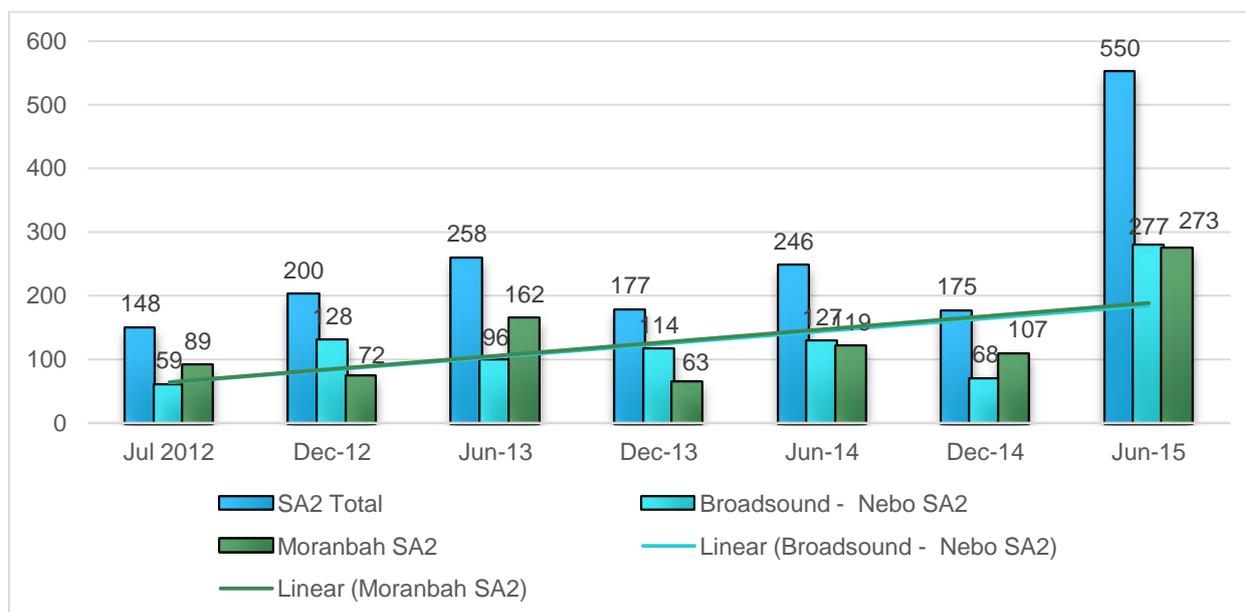
⁶⁴ ABS. 2008.

⁶⁵ 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".

Analysis of service contacts indicate increased frequency in the use of mental health services but does not distinguish whether the number of contacts are attributed to distinct consumers. Analysis of distinct consumers accessing clinical mental health services) 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.

Figure 4-13: Number of mental health service contacts July 2012-June 2015



Source: Queensland Government Mental Health Activity Data Collection. 2017.

4.6.7 Mental health in the mining industry

The Minerals Council of Australia (MCA) *Blueprint for Mental Health and Wellbeing*⁶⁶ 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’.

⁶⁶ Minerals Council of Australia. 2015.

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 for the NSW Minerals Council 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 disorder⁶⁷. In NSW in 2011, 55% of employment in mining was in coal.

The NSW Minerals Industry report cites research findings that risks are compounded by living alone, lack of local networks and high physical demands, whilst 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 ill), 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, noting there are broader social benefits in relation to positive impacts on families and communities.

4.6.8 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. Detailed information about road safety is provided in the EIS as part of the Traffic Assessment.

A 2016 report by Central Queensland University⁶⁸ (CQU) researchers aimed to assess the mining impacts of road travel conditions in the Bowen Basin. Noting a paucity of published research on the impacts of resource development on regional transport systems, it used a case study approach including a travel survey with 70 households Moranbah and Emerald.

The report notes that over size loads during the construction phase may include deliveries of vehicles and equipment building supplies, fuel, concrete and steel, whilst in the operational phase they may include periodic transport of ongoing supplies and waste removal. Vehicle movements generated by employees were reported to vary widely, with inconsistency in reporting frustrating attempts to consider cumulative impacts as the basis of policy and planning. Social impacts identified by Moranbah and Emerald households 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;

⁶⁷ University of Newcastle and Hunter Institute of Mental Health.2012.

⁶⁸ Akbar, D., Kinnear, S. Chhetri, P. and Smith, P. 2016.

- 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 bus 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. Policy and operational responses identified by CQU are considered in Section 5.6.5.

4.6.9 Community safety

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 average⁶⁹. Moranbah and Dysart participants in the community survey agreed that their communities were safe, with ratings of 4.06 (in Moranbah) and 4.21 (in Dysart) for agreement with the statement that they felt safe walking in their towns at night.

Analysis of crime trends was undertaken using the QRSIS Offices data for Isaac LGA, the MIW region and Queensland for the period 2011/12 to 2015/16. Rates are expressed as the rate per 100,000 people. As shown in Figure 4-14:

- 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 consultation participants expressed concern that the concentration of non-resident workers in accommodation villages could accelerate local crime rates, inputs from police officers in the LGA indicate that workforce accommodation villages are a low source of call outs for them, as behaviour is generally strictly managed with breaches resulting in loss of accommodation.

4.6.10 Domestic and family violence

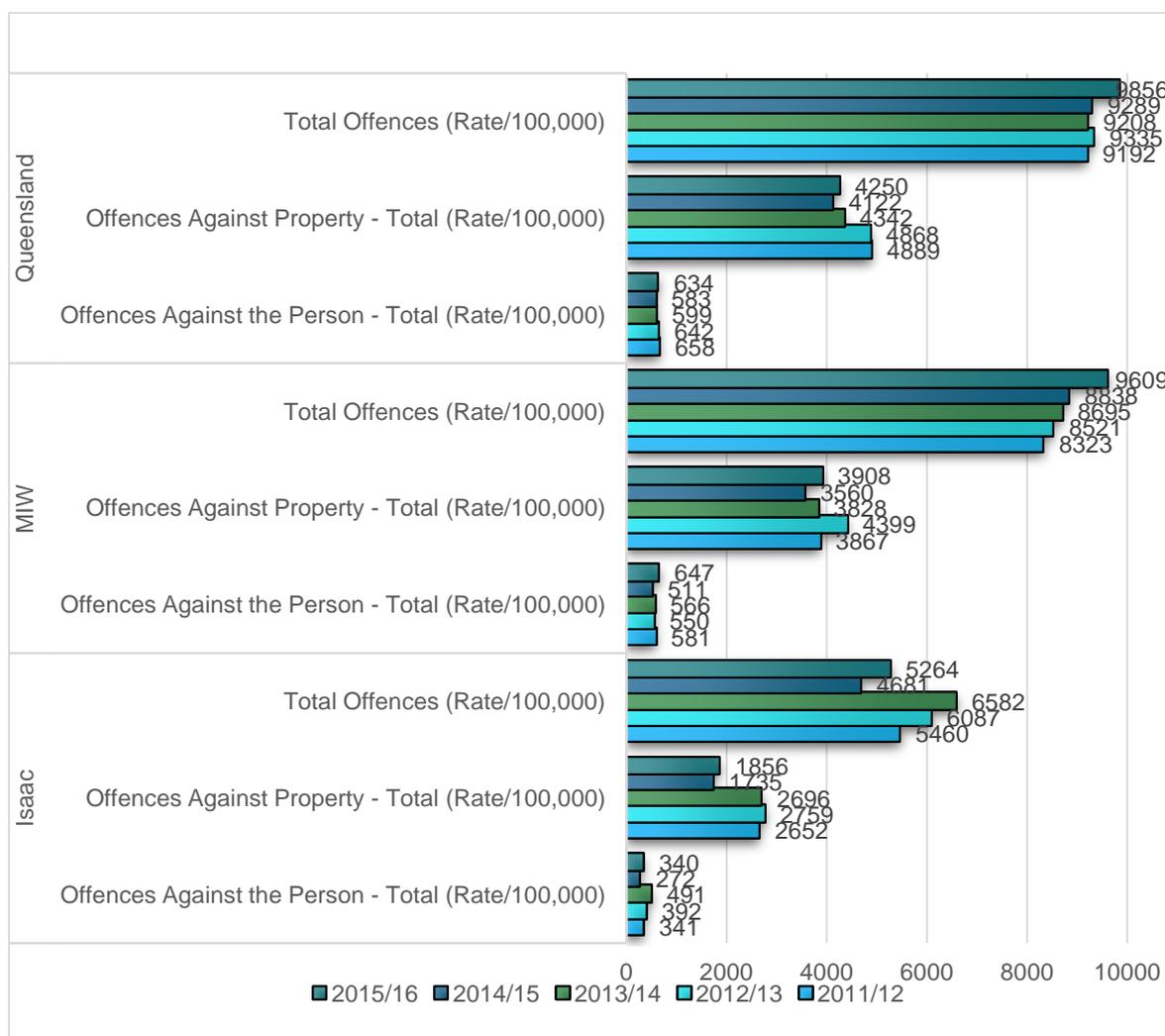
Consultation participants (including community service providers and police) provided anecdotal evidence of an increase in domestic and family violence (DFV), influenced by the economic downturn, and drug and alcohol use. The relationship of offender to victim is one distinguishing factor that helps QPS identify DFV-related offences.

⁶⁹ Torrens University Public Information Development Unit. 2017.

The QGSO's report on victims of reported offences against the person in Queensland⁷⁰ based on QPS data for the twelve months to 30 June 2015 indicates that:

- three in five (58.9%) of victims of offences against the person knew the offender⁷¹;
- young people aged 10-19 years and 20–29 years represented the largest age cohorts of victims of offences against the person (24.4% and 24.7% respectively);
- 86.0% of Aboriginal and Torres Strait Islander female victims of assault knew the offender, with the majority (59.4%) in a family or domestic relationship with the offender; and
- nearly two in three (65.1%) non-Indigenous female assault victims knew their offender, with one in three victims (33.0%) in a family or domestic relationship with the offender.

Figure 4-14: Offence rates, Isaac, MIW and Queensland – Five-year trend



Source: QGSO. 2017e.

⁷⁰ QGSO. 2015c.

⁷¹ Offences against the person include the offence categories of assault, sexual offences, homicide, robbery, and other offences against the person.

However, this information is not always reported with the offence and as such, DFV-related offence data may be substantially under-represented in offence reports in Queensland. QPS reports offences against the person (which exclude sexual offences), where the most recently available data is presented in Table 4-25. Data from the twelve-month periods to June 2015 and June 2016 generally show low reported offences against the person. Moranbah had the highest number of reported offences, which would average 2-3 reports per month over a twelve-month period.

Table 4-25: Reported Offences Against the Person by local area, 2014-15 and 2015-16

Area ⁷²	2014-15	2015-16
Moranbah	21 Assault 5 Other Offences Against the Person 1 Homicide	25 Assault 10 Other Offences Against the Person
Dysart	6 Assault	7 Assault 2 Other Offences Against the Person
Nebo	2 Assault	3 Assault
Middlemount	4 Assault 1 Homicide	1 Assault 1 Other Offence Against the Person
Coppabella	NA	NA

Source: QPS 2017. CrimeStats

4.7 Employment and labour

The following sections describe the labour force and employment profile of the Isaac LGA and MIW region. Data in this section are provided for the Isaac LGA and the Mackay LGA, for comparison and because the Mackay LGA is a likely source of labour for the Project, with trend data provided (as available) for the Mackay SA4, which equates to the MIW region.

4.7.1 Labour force

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 Table 4-26).

Mackay LGA had 4,611 less usual residents employed over the five-year period, with the largest decreases experienced in the manufacturing industry and the construction industry (approximately 2,000 employed people each), also influenced by mining industry contraction. Other industries which lost more than 500 employees included wholesale trade, retail trade, professional, scientific and technical services, transport, postal and warehousing, health care and social assistance and education and training, reflecting decreased employment across the board.

⁷² Crimes are mapped on or near the location where they occurred.

Table 4-26: Changes in employment numbers by industry 2011-2016

Industry	Isaac 2011	Isaac 2016	Change 2011-16	Mackay 2011	Mackay 2016	Change 2011-16
Agriculture, Forestry and Fishing	1,032	1,041	9	1,829	1,844	15
Mining	4,763	3,757	-1,006	6,372	6,516	144
Manufacturing	335	297	-38	5,426	3,425	-2,001
Electricity, Gas, Water and Waste	100	109	9	502	516	14
Construction	757	346	-411	5,910	3,922	-1,988
Wholesale Trade	223	130	-93	2,559	1,969	-590
Retail Trade	702	510	-192	5,810	5,252	-558
Accommodation and Food Services	769	650	-119	3,389	3,297	-92
Transport, Postal and Warehousing	440	401	-39	3,881	3,343	-538
Information Media and Telecommunications	35	19	-16	364	289	-75
Financial and Insurance Services	75	30	-45	792	701	-91
Rental, Hiring and Real Estate	175	102	-73	1,038	863	-175
Professional, Scientific and Technical	191	143	-48	2,690	2,161	-529
Administrative and Support Services	362	355	-7	1,424	1,532	108
Public Administration and Safety	382	406	24	2,311	2,318	7
Education and Training	632	657	25	3,316	3,933	617
Health Care and Social Assistance	435	386	-49	4,980	5,647	667
Arts and Recreation Services	35	55	20	285	406	121
Other Services	344	308	-36	3,060	2,604	-456
Inadequately described/Not stated	274	262	-12	1,418	2,202	784
Total	12,069	9,972	-2,097	57,343	52,732	-4,611

Source: ABS Census of Population and Housing, 2016a General Community Profiles (Working Persons Profile) and 2011a Basic Community Profile (Working Persons Profile). Isaac and Mackay LGAs. Based on count of usual residents

4.7.2 Labour force diversity

Census 2016 data for labour force participation are provided in Table 4-27. Features in the Isaac LGA included:

- of the 15,641 Isaac residents aged 15 or over, 10,490 people (67%) were in the labour force;
- 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 at 2.2%;
- approximately 9.7% of males and 25.8% of females of 15 years and over were not in the labour force, reflecting the availability of jobs and the youth of the population;
- approximately 517 people were unemployed, including 230 unemployed men and 288 unemployed women; and
- the workforce included 337 Indigenous people, of whom 28 (8.3%) were unemployed.

Table 4-27: Labour force participation and diversity, 2016

	Cultural diversity			Gender diversity				
	Indigenous	Non Indig.	Not stated	Males		Females		Total
Isaac LGA	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	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
Mackay LGA	No.	No.	No.	No.	%	No.	%	No.
Persons 15 years+	3,654	79,996	7,555	46,089	50.5	45,114	49.5	91,204
In labour force (male/female % of total workforce)	2,334	54,958	400	31,149	54.0	26,546	46.0	57,697 (63.3%)#
Employed (male/female % of employed people)	1,831	50,545	357	28,518	54.1	24,213	45.9	52,732
Unemployed	502 (21.5%)	4,414	46	2,630	8.4	2,338	8.8	4,966
Not in the labour force	1,256	24,248	353	10,378	22.5	15,480	34.3	25,859
Labour force status not stated	64	793	6,797	4,565	5.0	3,091	3.4	7,652

Source: ABS Census of Population and Housing, 2016a. General Community Profiles. ABS sampling and rounding procedures result in minor variations in totals # Labour force participation rate

In the Mackay LGA:

- the labour force totalled 57,697 people (a participation rate of 63.3%);
- women represented a higher proportion of the labour force (45.9%) than in Isaac, and female unemployment was again slightly higher at 8.8% compared to 8.4% for males.

4.7.3 Jobs by industry

Table 4-28 shows the number and percentage of people employed by industry in the Isaac and Mackay LGAs (based on employed persons aged 15 years and over by place of work, noting this is a higher number than the number of people in the workforce).

In the Isaac LGA, 6,024 people working in the LGA (42% of employed persons) worked in the mining industry, with health care and social assistance the second highest employment industry (at 6.7%), followed by agriculture forestry and fishing (6.1%). The percentage of people employed in mining in Queensland was 2.3%. Mining's specialisation ratio was very high at 7.66. Construction accounted for 659 employees (4.6%). By contrast, the largest employing industry in Queensland was health care and social assistance at 13%, indicating that the Isaac LGA in particular has low provision of health and care workers compared to the State average. In the Mackay LGA, health care and social assistance was the highest employing industry at 12.3% followed by retail trade at 11%, 5.5% of people worked in the mining industry, with health care and social assistance.

Table 4-28: Industry of employment and specialisation 2016

Industry	Isaac LGA			Mackay (R) LGA			Qld.
	No.	%	Specialisation ratio	No.	%	Specialisation ratio	
Agriculture, forestry & fishing	872	6.1	1.61	1,728	3.8	1.34	2.8
Mining	6,024	42.0	7.66	2,503	5.5	2.42	2.3
Manufacturing	452	3.2	0.44	3,303	7.2	1.20	6.0
Electricity, gas, water & waste	132	0.9	0.88	479	1.1	0.94	1.1
Construction	659	4.6	0.69	3,050	6.7	0.75	8.9
Wholesale trade	162	1.1	0.27	1,921	4.2	1.60	2.6
Retail trade	746	5.2	0.47	5,036	11.0	1.11	9.9
Accommodation & food services	703	4.9	0.73	3,055	6.7	0.91	7.4
Transport, postal & warehousing	608	4.2	0.63	3,091	6.8	1.34	5.1
Information media & telecomms	36	0.3	0.41	281	0.6	0.52	1.2
Financial & insurance services	109	0.8	0.49	714	1.6	0.62	2.5
Rental hiring & real estate	143	1.0	0.55	825	1.8	0.91	2.0
Professional, scientific & technical	303	2.1	0.47	2,054	4.5	0.72	6.2
Administrative and support services	439	3.1	1.14	1,231	2.7	0.76	3.5
Public admin & safety	410	2.9	0.58	2,263	5.0	0.76	6.5
Education and training	770	5.4	0.66	3,693	8.1	0.90	9.0
Health care & social assistance	958	6.7	0.54	5,609	12.3	0.94	13.0
Arts & recreation	53	0.4	0.42	401	0.9	0.55	1.6
Other services	336	2.3	0.44	2,428	5.3	1.36	3.9
Total(a)	14,328	100.0	1.0	45,605	100.0	1.0	100.0

Source: QGSO. 2017a. Based on ABS Census 2016 Working Population Profile. Based on place of employment.

4.7.4 Construction and mining jobs

Comparison of ABS Census 2016 and 2011 based on place of work indicates that the number of construction sector jobs located in the Isaac LGA had contracted. Heavy, Civil Engineering and Construction Services sectors (which are of most relevance to the Project) lost a combined total of 728 jobs in the LGA (see Table 4-29). In the Mackay LGA, losses were also experienced across the board, with 686 Heavy, Civil Engineering and Construction Services sector jobs lost.

Between the two LGAs, the construction industry lost more than 2,200 jobs between 2011 and 2016.

Table 4-29: Construction jobs 2011-2016

Construction Sectors	Isaac LGA			Mackay LGA		
	2016	2011	Change	2016	2011	Change
Heavy and Civil Engineering Construction	144	516	-372	476	716	-240
Construction Services	375	731	-356	1,850	2,296	-446
Total heavy, civil and services	519	1,247	-728	2,326	3,012	-686
Building Construction and not defined	131	538	-407	728	1,114	-386
Total	659	1,785	-1,126	3,050	4,126	-1,076

Source: QGSO. 2017a. Based on ABS Census 2016 second release data. The total includes inadequately described and not stated responses

The number of coal mining jobs located in the Isaac LGA also contracted considerably between 2011 and 2016, with a loss of 3,772 jobs (equivalent to 40% of the total). Whilst 2011 and 2012 had high employment rates, the decrease since is significant and has driven outmigration. The number of jobs in other mining, oil and gas sectors in the LGA was also down by 985 people (see Table 4-30), or a factor of 68.4%

Conversely, the data indicate that coal mining jobs located in the Mackay LGA almost tripled between 2011 and 2016, however the number of jobs in other mining, oil and gas sectors decreased by 37%.

Table 4-30: Mining jobs, 2011-2016

Mining sectors	Isaac LGA			Mackay LGA		
	2016	2011	Change	2016	2011	Change
Coal Mining	5,565	9,337	-3,772	1,813	605	1,208
Other Mining, Oil and Gas [#]	456	1441	-985	691	1096	-405
Total	6,024	10,778	-4,754	2,503	1,701	802

Source: ABS Census of Population and Housing. 2016a General Community Profile (Working Population Profile) and 2011a Basic Community Profile (Working Population Profile) for Isaac LGA and Mackay LGA

[#] 'Other Mining, Oil and Gas' includes oil and gas extraction, metal ore mining, non-metallic mineral mining and quarrying exploration and other mining support services and mining, not defined.

4.7.5 Occupations

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%, compared to 11.3% at the State level (see Table 4-31).

In the Mackay LGA, technicians and trades workers also represented the largest group at 20%, followed by professionals at 14.3% and machinery drivers at 12.9%.

Table 4-31: Occupational groups, Isaac and Mackay LGA 2016

Occupation	Isaac LGA		Mackay LGA		Queensland
	No.	%	No.	%	%
Managers	1,291	12.9	5,523	10.5	12.1
Professionals	1,063	10.7	7,538	14.3	19.8
Technicians and trades workers	2,067	20.7	10,525	20	14.3
Community and personal service workers	606	6.1	4,659	8.8	11.3
Clerical and administrative workers	869	8.7	6,338	12	13.6
Sales workers	467	4.7	4,875	9.2	9.7
Machinery operators and drivers	2,364	23.7	6,802	12.9	6.9
Labourers	1,112	11.2	5,563	10.5	10.5
Total	9,972	100	52,732	100	100

Source: QGSO. 2017a. Based on ABS Census 2016 second release data. The total includes inadequately described and not stated responses.

4.7.6 Skills shortages

The Australian Industry Group Construction Outlook survey (conducted in March-April 2017)⁷³ found that, with respect to construction:

- skilled labour shortages are a concern for many Australian construction businesses with 39.1% of respondents reporting either major or moderate difficulty in recruiting skilled labour in the six months to March 2017;
- with major infrastructure works coming on stream, a higher number of businesses expected difficulty with recruiting skilled labour over the six months to September 2017 (47.8% expected major or moderate difficulty);
- the average level of industrial and construction capacity in use was 81.0% in March 2017, a fall of 3.3 percentage points from 84.3% a year earlier; and
- an improvement in activity levels is expected over the second half of 2017 and during 2018 with 62.5% of respondents expecting 'very busy' or 'busy' levels of activity.

⁷³ The Australian Industry Group and Australian Constructors Association. 2017.

The most recent Australian Industry Group Construction Outlook survey (November 2017) indicates that ‘the worst of the decline in mining-related construction is now behind us’ however some softening of demand for construction labour was expected in relation to the completion of LNG projects. The November 2017 report also notes that labour costs pressures are increasing, with heightened pressures expected to in 2018⁷⁴.

The Isaac and Mackay LGAs have significant strengths in construction for the mining industry upon which the Project will draw. The Resource Industry Network (RIN) (a not-for-profit group representing the resource sector and allied industries within the Mackay region) reported in August 2017 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 recruiting⁷⁵.

Consultation with IRC in June 2018 confirmed that a resurgence in mining industry activity during the past 12 – 24 months had seen increased competition for skilled construction and mining labour, including operators and tradespeople, which was expected to flow on to shortages in skilled labour for other local businesses.

With respect to operations, the Department of Employment's 'Occupational skill shortages reports at December 2016⁷⁶ found key areas of shortage include metal fitters, machinists and sheet metal trades workers (where there are shortages in Queensland regions) and plumbing and gas fitting trades which were classified as ‘recruitment difficulty’ (see Table 4-32, as available for Queensland and Australia). 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.

Table 4-32: Mining industry skill shortages

Occupational group	Labour market rating	
	Queensland	Australia
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		No Shortage
Mining Engineers (excluding petroleum)		No Shortage
Geologists and Geophysicists		No Shortage

Source: Australian Department of Employment. 2017.

⁷⁴ The Australian Industry Group and Australian Constructors Association. 2017

⁷⁵

Resource Industry Network. 2017.

⁷⁶ Australian Department of Employment - Labour Market Research and Analysis Branch. 2016.

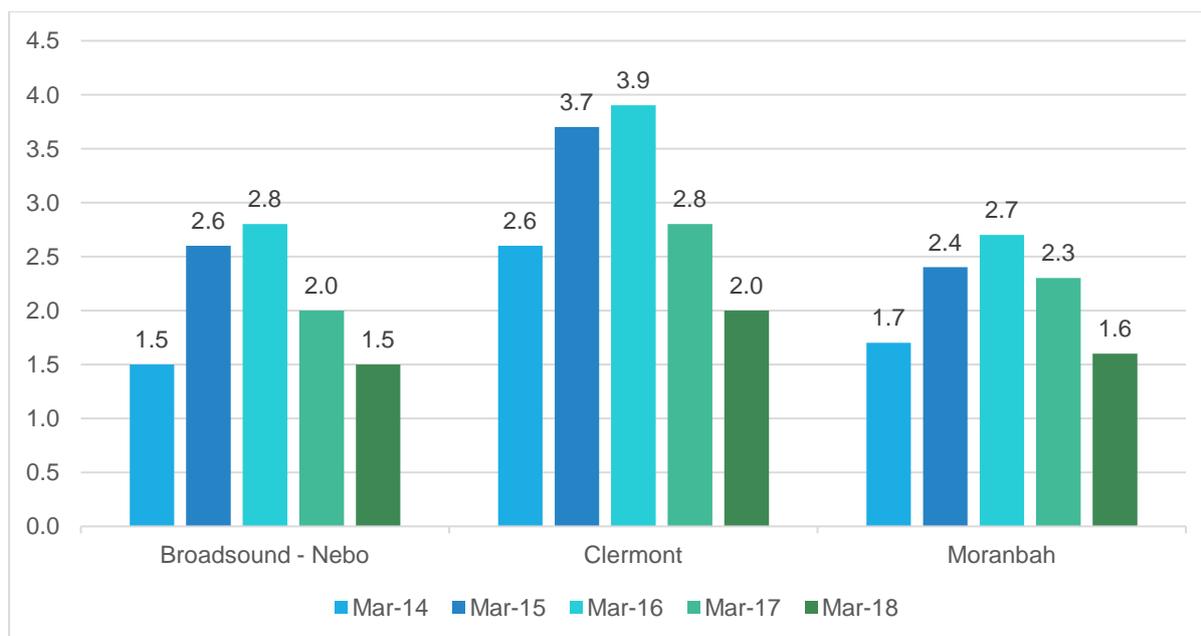
Research on skill shortages, conducted by the Australian Industry Group in 2016, was based on employers' inputs. It indicates that the top three occupations where they expected to experience the most skills shortages in 2017 included technicians and trades workers as the largest area of concern, with 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.⁷⁷ Both groups are relevant to the Project's operational requirements.

Verification of availability and the match of available workers' skills to employment opportunities is not possible until labour market testing prior to commencement of operations. However, it is likely, with such a strong pool of potential employees, that a large number of operational workers could be drawn from the Isaac LGA. Workers in the Isaac LGA will be targeted through the Project's recruitment and local content strategies as described in Section 6.4 and 6.7, in order to maximise opportunities for local and regional employment.

4.7.7 Unemployment trends

Figure 4-15 presents unemployment trends across the study area for the five years to March 2018 for the three SA2s within the Isaac LGA. Data are derived from the Australian Department of Employment's Small Area Labour Market research⁷⁸.

Figure 4-15: Unemployment percentage, SA2s within Isaac LGA



Source: Australian Department of Employment. 2017.

⁷⁷ The Australian Industry Group. 2016.

⁷⁸ Australian Department of Employment - Labour Market Research and Analysis Branch. 2017.

Rates of unemployment in the Moranbah SA2 and Broadsound-Nebo SA2 have been consistently lower than those in the Clermont LGA. In Moranbah SA2, unemployment rates were at their lowest in March 2018 (at 1.6%) returning to a rate that was consistent with the March quarter 2014. Unemployment rates in the Broadsound SA2 were similar to rates in Moranbah SA2 and followed a similar pattern. At March 2018, the rate of unemployment in Broadsound-Nebo SA2 was 1.5%, also consistent with the March quarter 2014. Queensland’s unemployment rate in March 2018 was 6%.

4.7.8 Broader regions’ labour force

QGSO’s analysis of labour force trends for the Mackay SA4 (MIW region) and Central Queensland SA4 for 2012-2016-17 is presented in Table 4-33. In the Mackay SA4:

- the labour force increased by 2,100 people over the five years to June 2017, but the number of employed people rose by only 300, so the number of unemployed people rose by 1,700;
- unemployment increased from 3.9% in 2012-13 to peak at 7.4% in 2014-15, but has declined over the past two to 5.4%, lower than the Queensland average of 6.3%;
- labour force participation decreased from 75.1% to 72.3% over the five-year period, but was higher than the State average for the whole period; and

Overall, data for the Mackay SA4 indicate that employment availability relative to labour availability declined over the past five years, with unemployment increasing and labour force participation decreasing at higher rates than the State average (see Table 4.33). the decrease in labour force participation reflects out-migration of workers during the mining industry’s contraction, as well as population ageing and discouraged job seekers.

The Central Queensland SA4 (which includes Emerald, Rockhampton and Gladstone) is another potential source of labour.

At 2016, the Census indicates that the Central Queensland SA4 had an estimated population of 226,314 people. Key features include:

- the SA4’s labour force increased by 6,800 people over the five years to June 2017;
- the number of employed people rose by 5,500 people, so the number of unemployed people was lower than in the Mackay SA4 at 1,300 people;
- fluctuations in unemployment have been less dramatic than in the Mackay SA4, changing by less than 0.6% over the five years; and
- labour force participation increased over the five years by 0.6%.

Whilst unemployment is higher in the Central Queensland region, the data indicate a less volatile labour market than in the Mackay SA4.

Table 4-33 Labour force trends, Mackay and Central Queensland Regions

Region	2012–13	2013–14	2014–15	2015–16	2016–17	5 Year variance
Mackay SA4						
Employed Persons	100,800	101,900	95,900	93,800	101,100	300
Unemployed persons	4,100	4,400	7,600	6,900	5,800	1,700
Labour force	104,800	106,300	103,600	100,600	106,900	2,100

Region	2012–13	2013–14	2014–15	2015–16	2016–17	5 Year variance
Not in the labour force	34,700	35,500	40,100	44,900	40,900	6,200
Unemployment rate (%)	3.9	4.2	7.4	6.8	5.4	1.5
Participation rate (%)	75.1	75	72.1	69.2	72.3	-2.8
Central Queensland SA4						
Employed Persons	109,000	115,600	115,900	116,100	114,500	5,500
Unemployed persons	7,400	6,700	7,800	8,200	8,700	1,300
Labour force	116,400	122,300	123,700	124,300	123,200	6,800
Not in the labour force	57,300	53,900	54,300	55,600	59,000	1,700
Unemployment rate (%)	6.4	5.4	6.3	6.6	7	0.6
Participation rate (%)	67	69.4	69.5	69.1	67.6	0.6
Queensland						
Unemployment rate (%)	5.9%	6%	6.5%	6.2%	6.2%	0.3%
Participation rate (%)	66%	65.9%	65.5%	65.4%	64.4%	-1.6%

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.

QGSO's unemployment data for June 2017⁷⁹ indicate that the youth unemployment rate in the Mackay SA4 was 10.2%, down from 10.9% in June 2016, and lower than Queensland's youth unemployment rate of 13.6%. The recent decrease follows the decrease in the general unemployment rate, but youth unemployment is still substantially higher.

Regions with very high youth unemployment rates in June 2017 included:

- the Queensland Outback (56.2% which had experienced an annual change of 19.8 percentage points since June 2016);
- Townsville SA4 (21.8% up 5.3 points);
- Wide Bay (23.5%, up by 2.5 points); and
- Brisbane East (20.5%, which was up by 6.1 points).

These regions should also be considered as a potential source of labour for the Project.

4.7.9 Training, and Employment Policies

Government strategies and programs are summarised below. A number of the training programs offer as part of these programs are market driven, with needs identified and addressed as they emerge.

⁷⁹ QGSO. 2017e.

Jobs Queensland

Jobs Queensland is an independent statutory entity established by the Queensland Government to provide strategic advice to the Government on future skills requirements, workforce planning and development issues and the apprenticeship and traineeship system.

Jobs Queensland's 'Positive Futures: Apprenticeships and Traineeships in Queensland' Discussion Paper⁸⁰ notes that after trending upwards for over a decade during the mining boom, apprenticeship commencements in Queensland began to fall in 2007. The discussion paper noted that commencements have recovered, however in the Isaac LGA engagement participants said that mining companies had drastically decreased or ceased their apprenticeship programs in the region, which was discouraging for young people hoping to enter the industry.

Queensland Government programs that support apprentices and trainees include:

- Registered Trades Skill Pathway and Trade Skills Assessment and Gap Training which help existing workers to gain trade qualifications;
- User Choice which funds the training of eligible apprentices and trainees;
- Industry Pre-Apprenticeship Programs which work in partnership with industry to develop tradespeople in priority trade occupations; and
- 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.

Skilling Queenslanders for Work

Skilling Queenslanders for Work⁸¹ is an initiative providing training to people who are under-utilised or under-employed in the labour market, and building the skills of young people, Aboriginal and Torres Strait Islander people, people with a disability, mature-age job seekers and people from culturally and linguistically diverse backgrounds. Local community ownership of projects is a cornerstone of the initiative.

Back to Work Regional Employment Package

The Back to Work package⁸² is aimed at increasing business confidence and employment prospects for regional jobseekers affected by the declining commodities boom. Employers, jobseekers, and the Back to Work Teams will work together to build regional networks, build regional capacity, and create local opportunities. This initiative includes

- support payments of \$10,000-\$20,000 for employers to take on jobseekers in regional Queensland;
- training for eligible jobseekers to gain the skills including Certificate 3 qualifications; and
- Back to Work Teams working with local employers and jobseekers.

⁸⁰ Jobs Queensland. 2016.

⁸¹ Queensland Government. 2016a.

⁸² Queensland Government. 2016b.

Advancing skills for the future

The Queensland Government is currently consulting on a draft strategy⁸³ for vocational education and training in Queensland, 'Advancing skills for the future'. The strategy will respond 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'. The draft Strategy encompasses:

- strategic collaboration between industry, employers, and government to support new industries and business practices and advance the growth of priority industries;
- improvements to achieve a World-class Vocational Education and Training system; and
- access to skilling pathways that enhance employability and social wellbeing.

Workforce diversity

The Queensland Women's Strategy 2016-21⁸⁴ provides a framework for government, the private sector and the wider Queensland community to take significant action to achieve gender equality in Queensland. The Strategy's four priority areas include participation and leadership; economic security; Safety; and Health and wellbeing. The plan provides a list of initiatives that government, business and the community have committed to delivering, working together to achieve gender equality in Queensland.

Women in Mining and Resources Queensland (WIMARQ) is a group of volunteers who provide 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 funding from the Queensland Government's Women in Resources Strategy 2013-16.

Youth training

QMEA is an industry-schools partnership between the Queensland resources sector (represented by QRC) and the Queensland Government through the Gateway Industry Schools Program, which offers a range of programs to broaden students' and teachers' knowledge of the sector and provides a talent pipeline of employees into the resources sector and related science, technology, engineering and maths (STEM) industries.

The Community Aspirations Program in Education (CAP-ED) is a partnership between the Central Queensland University's Office of Indigenous Engagement and six Central Queensland communities to increase Aboriginal and Torres Strait Islander student participation in higher education. The program offers flexible delivery to accommodate the needs and practices of each community, and face-to-face engagement between community members and university staff.

⁸³ Queensland Department of Education and Training. 2016a.

⁸⁴ Queensland Department of Communities, Child Safety and Disability Services. 2016

Advancing Aboriginal and Torres Strait Islander education and training

The Department of Education and Training has released a consultation draft of the *Advancing Aboriginal and Torres Strait Islander education and training: An action plan for Queensland*⁸⁵ aimed at driving higher expectations and achieving better outcomes for Queensland's Aboriginal and Torres Strait Islander communities across early childhood education, school education, vocational education and training, and higher education.

Highlights from the draft action plan with relevance to the SIA include:

- 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; and
- funding for Aboriginal and Torres Strait Islander-specific projects under Skilling Queenslanders for Work to provide skills development, nationally-recognised training, and job opportunities.

Building our regions

Building our Regions is a \$375 million regional infrastructure funding program, replacing the Royalties for the Regions program which ended in 2016. The primary purpose of the Building our Regions program⁸⁶ is to provide funding for critical infrastructure in regional areas, whilst also supporting jobs, fostering economic development, and improving the livability of regional communities. The program includes the:

- Regional Capital Fund;
- Royalties for Resource Producing Communities Fund;
- Remote Communities Infrastructure Fund; and
- Transport and Infrastructure Development Scheme.

In 2017, IRC received funding from the Royalties for Resource Producing Communities Fund⁸⁷ for the Moranbah Reservoir (to increase water storage and address critical pressure issues that limit firefighting capacity), and for the Moranbah Resource Recovery Centre Improvement and Expansion Project which will deliver a new landfill cell and refuse transfer station.

Industry capacity building projects

Queensland Resources Council is 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. Queensland Resources Council has also partnered with the Queensland Government to deliver the 'Traditional Owner Governance and Prosperity' program which supports traditional owners to develop visions and plans.

⁸⁵ Queensland Department of Education and Training. 2016b.

⁸⁶ Queensland Department of State Development. 2016.

⁸⁷ Isaac Regional Council. 2017b.

4.8 Businesses

4.8.1 Key sectors and strengths

The Isaac LGA's economic strengths⁸⁸ 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 \$192m;
- high levels of trade qualified residents, and significant human and physical capital in mining-related businesses;
- areas of significance to the tourism industry; and
- Moranbah's role as a district centre.

Isaac Council'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 continue to explore ways to strengthen and diversify its economy. The profile notes that the Isaac region 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 an example, and opportunities for biofuel production. The Isaac coast is also identified as an emerging tourism precinct for development in the Mackay Destination Tourism Plan 2014.⁸⁹

4.8.2 Business profile

Approximately 1,700 registered businesses were operating in the Isaac LGA in June 2016, representing 11% of registered businesses in the broader Mackay SA4. Of these, 1,055 (62.1%) were non-employing businesses (e.g. sole traders and small family farms). A further 454 businesses (26.7%) were small businesses with 1-4 employees and 159 businesses (9.3%) employed 5-19 people. Just 32 businesses (1.8%) in the Isaac LGA employed 20-199 people and there was no business with more than 200 employees (see Table 4-34).

At the broader regional level in the Mackay SA4 in June 2016, there were 8,954 non-employing businesses (59.7%), 3,983 businesses (26.5%) with 1-4 employees, 1,628 businesses (10.9%) with 5-19 employees, 412 businesses with 20-199 employees (2.7%) and 18 businesses (0.12%) employing more than 200 people.

In all, small businesses employing less than five people represented approximately 88.8% of Isaac's businesses, slightly higher than the Mackay SA2's 86.2%, due to the location of the region's biggest businesses in either the Mackay or Whitsunday LGAs.

⁸⁸ REPLAN. 2017a.

⁸⁹ REPLAN 2017a.

Table 4-34: Counts of registered businesses (staff), Isaac LGA and Mackay SA4 2014-2016

Business Counts (Staff)	Isaac			Mackay SA4		
	Jun-14	Jun-15	Jun-16	Jun-14	Jun-15	Jun-16
Non-employing	1,099	1,100	1,055	9,342	9,124	8,954
1-4 employees	446	449	454	4,174	4,011	3,983
5-19 employees	187	175	159	1,837	1,699	1,628
20-199 employees	58	50	32	535	470	412
200+ employees	0	0	0	12	9	18
Total	1,790	1,774	1,700	15,900	15,313	14,995

Source: REMPLAN. 2017c.

Figure 4-16 demonstrates the percentage change in business numbers (by number of employees) as an indicator of the change in business viability in the two regions. Between June 2014 and June 2016:

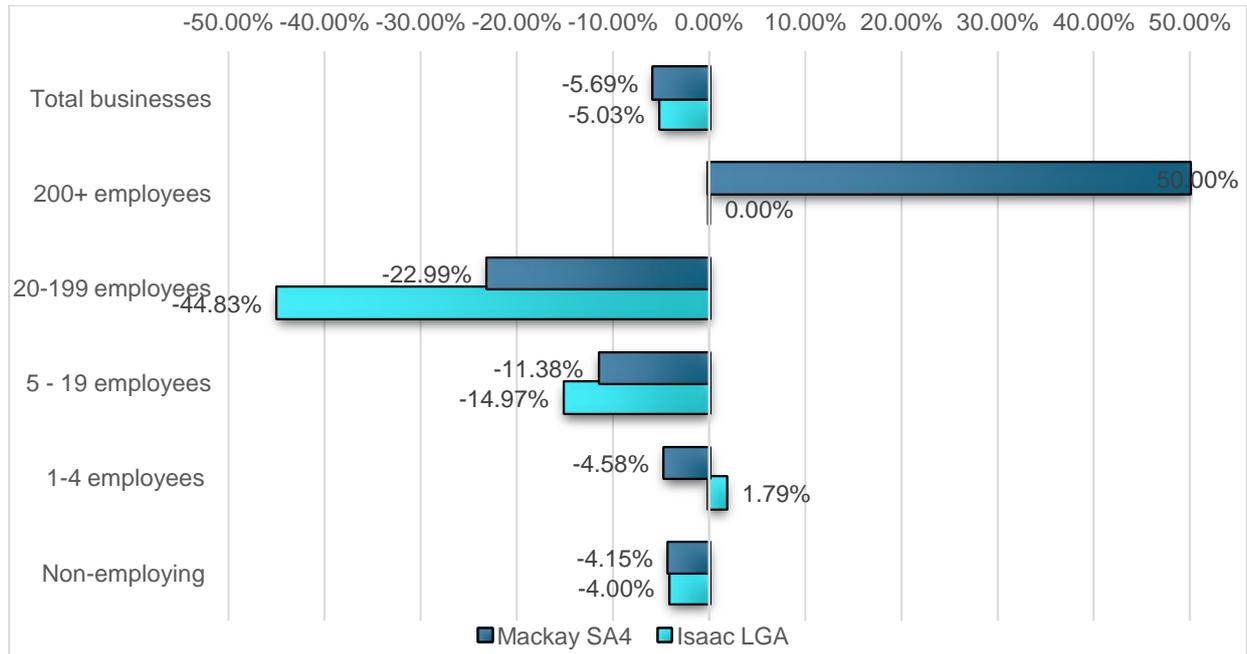
- the number of business decreased by 5.03% in the Isaac LGA and 5.69% in the Mackay SA4;
- there was a very small (1.79%) increase in the number of Isaac LGA businesses employing 1-4 people, however the number of non-employing businesses decreased by 4%;
- in the Mackay SA4 region, the number of businesses employing 1-4 people decreased by 4.58%, similar to its decrease in non-employing business (4.15%);
- medium size businesses with 20-199 employees suffered the largest drop in numbers, at 44.83% in Isaac LGA and 22.99% in the Mackay SA4; and
- the number of businesses in the Mackay SA4 employing more than 200 people increased by six businesses or 50%, which REMPLAN data suggest is attributable to increases in health, transport and manufacturing businesses.

Table 4-35 shows the number of business by annual turnover in the Isaac LGA and the Mackay SA4, and indicates that most categories experienced year-on-year negative changes between 2014/15 and 2015/16.

The exceptions were a small increase in the number of businesses in the Isaac region with turnovers of more than \$500,000. There were also small increases in the number of businesses in the Mackay region with turnover of \$100,000-500,000 in 2015/2016, but of insignificant magnitude to correct the decrease experienced in the 2014/15 year.

Together, the change in business counts and declines in turnover point to a recent decrease in business employment opportunities, and a lack of confidence in business growth.

Figure 4-16: Isaac LGA and Mackay SA4 business counts – percentage change 2014-16



Source: REMPLAN. 2017a.

Table 4-35: Counts of registered businesses, Isaac LGA and Mackay SA4 2014-2016

Business Counts (Turnover)	Isaac LGA			Mackay SA4		
		Change 2014/15	Change 2015/16		Change 2014/15	Change 2015/16
	Jun-14	Jun-15	Jun-16	Jun-14	Jun-15	Jun-16
Zero to less than \$50k	483	439	362	3872	3,643	3308
		-9.1%	-17.5%		-5.9%	-9.2%
\$50k to less than \$100k	224	254	226	2,173	2,245	2176
		13.4%	-11.0%		3.3%	-3.1%
\$100k to less than \$200K	312	251	244	2,779	2,664	2,715
		-19.6%	-2.8%		-4.1%	1.9%
\$200k to less than \$500k	313	336	331	3,405	3,191	3240
		7.3%	-1.5%		-6.3%	1.5%
\$500k to less than \$2m	357	355	365	2,670	2,630	2,546
		-0.6%	2.8%		-1.5%	-3.2%
\$2m or more	137	134	155	1,114	1016	982
		-2.2%	15.7%		-8.8%	-3.3%
Total	1,826	1,769	1,683	16,013	15,389	14,967

Source: REMPLAN. 2017c.

4.8.3 Wages and salaries by industry

The wages and salaries⁹⁰ paid by businesses and organisations in Isaac LGA were estimated at \$2.111 billion for 2015-2016, including \$1,414.610 million from mining (representing 67% of the total) and \$194.519 million from construction (9.2% of the total) (see Table 4-36).

Table 4-36: Wages and salaries, June 2016

Industry	Isaac LGA	Mackay SA4	Queensland
Mining	\$1,414.610 M	\$1,725.282 M	\$6,630.146 M
Construction	\$194.519 M	\$653.420 M	\$14,049.204 M
Manufacturing	\$68.119 M	\$596.958 M	\$15,212.855 M
Administrative & Support Services	\$59.010 M	\$282.295 M	\$8,197.885 M
Education & Training	\$48.199 M	\$354.214 M	\$13,574.084 M
Accommodation & Food Services	\$44.891 M	\$254.068 M	\$5,332.946 M
Public Administration & Safety	\$40.171 M	\$288.667 M	\$14,332.163 M
Transport, Postal & Warehousing	\$36.666 M	\$392.227 M	\$7,975.632 M
Health Care & Social Assistance	\$31.106 M	\$434.052 M	\$17,171.666 M
Retail Trade	\$29.126 M	\$326.479 M	\$9,411.426 M
Wholesale Trade	\$28.046 M	\$328.176 M	\$8,203.629 M
Professional, Scientific & Technical Services	\$27.606 M	\$284.361 M	\$11,749.177 M
Other Services	\$21.336 M	\$165.794 M	\$4,058.973 M
Rental, Hiring & Real Estate Services	\$20.716 M	\$146.118 M	\$3,403.621 M
Agriculture, Forestry & Fishing	\$17.955 M	\$109.095 M	\$1,579.930 M
Electricity, Gas, Water & Waste Services	\$13.486 M	\$85.170 M	\$2,895.758 M
Financial & Insurance Services	\$10.688 M	\$142.613 M	\$7,539.970 M
Information Media & Telecommunications	\$3.440 M	\$39.010 M	\$2,211.633 M
Arts & Recreation Services	\$1.157 M	\$16.306 M	\$1,259.455 M
Total	\$2,110.846 M	\$6,624.304 M	\$154,790.154 M

Source: REMPLAN 2017b.

4.8.4 Local and regional supply chain considerations

From a social perspective, the Project's primary supply chain considerations include:

- the location of construction labour and operation personnel, and implications in relation to local cohesion, commuting and workforce housing and accommodation;

⁹⁰ *Ibid.*

- access to equipment, consumables, professional services, maintenance providers and technical and trades sectors within the Isaac LGA, MIW region and other Queensland regions; and
- identifying Indigenous businesses who can be part of supply arrangements during construction and operation.

Registered businesses

The Australian Bureau of Statistics Counts of Australian Businesses for the three SA2s within the Isaac LGA indicate that at June 2016 (see Figure 4-17), there was a total of 20 mining businesses, including:

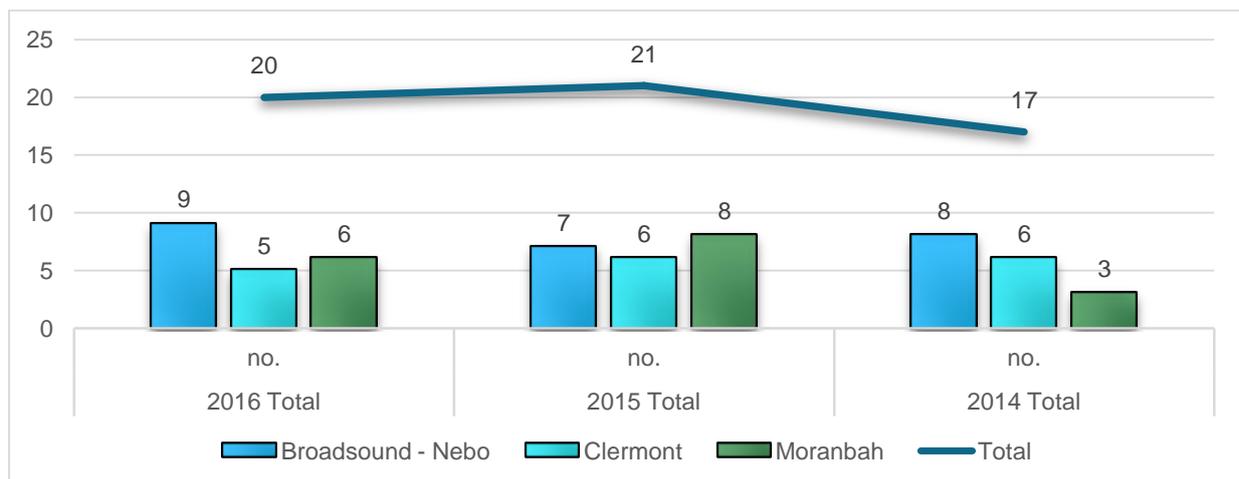
- six mining industry businesses registered in Moranbah SA2 (two fewer than in 2015, but three more than in June 2014);
- nine businesses registered in the Broadsound- Nebo SA2 (two more than in June 2015, and one more than 2014); and
- five businesses registered in Clermont (one fewer than the 2015 and 2014 counts).

Most of the mining industry businesses in Moranbah and the Broadsound-Nebo SA2 in 2016 were non-employing and maintained a turnover under \$50,000, indicating that there are small businesses that may have capacity to supply the Project and potentially grow.

Three businesses in the Broadsound-Nebo SA2 and three in Clermont SA2 had a turnover between \$500,000 and \$2 million and may have significant capacity to supply the Project.

Mining operations often have their business registrations in a different jurisdiction and are therefore not accurately represented in the statistics.

Figure 4-17: Mining business counts Isaac LGA 2014-2016



Source: ABS. 2017a. 8165.0 - Counts of Australian Businesses, by SA2 and Turnover Size Ranges

As shown in Figure 4-18, at June 2016, there was a total of 183 businesses registered in the construction industry within the Isaac LGA, including:

- 60 construction businesses registered in the Moranbah SA2 (down by 3 since 2014);
- 57 construction businesses registered in the Broadsound – Nebo SA2 (down by 11 since 2014); and
- 66 construction businesses registered in Clermont SA2 (down by 1 since 2014).

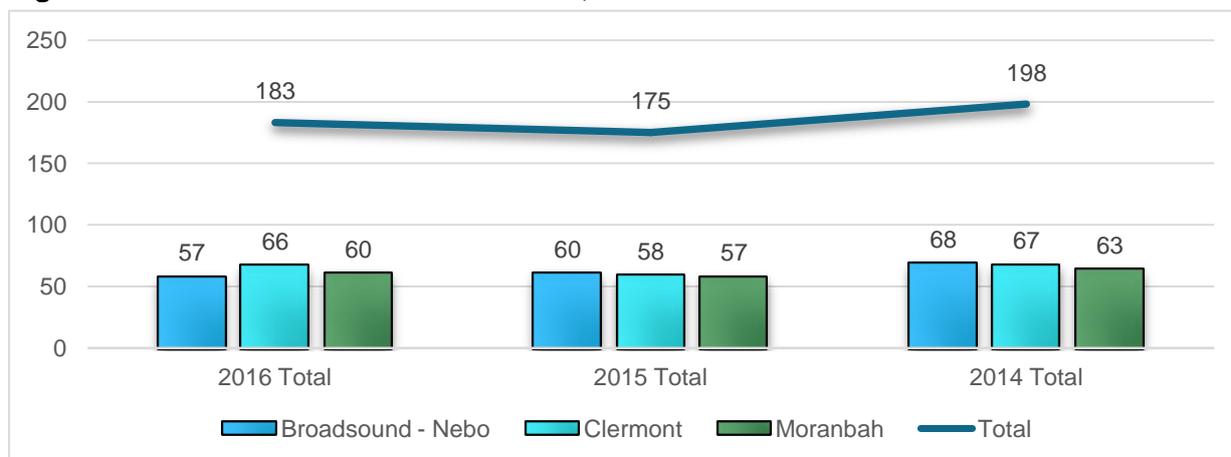
Construction businesses in Moranbah and Clermont SA2 had similar employment profiles, with 48% registered as non-employing businesses, 33% registered as employing 1-4 staff, and 15% employing 5-19 staff.

Almost two thirds (or 65%) of the registered construction businesses in Broadsound-Nebo SA2 were non-employing in 2016, while 21% of businesses employed less than five staff, and just 7% of businesses employed between five and 19 staff.

More than half of the construction businesses in Moranbah (55%) had a turnover between \$200,000 and \$2 million, with another 8% earning more than \$2 million in the year.

Nearly half of the registered businesses in Broadsound-Nebo SA2, and also in Clermont SA2 (49% of each SA2 business profile) had a turnover of more than \$200,000, including 5% (of each SA2 business profile) that earned more than \$2 million in the year.

Figure 4-18: Construction business counts, SA2 and LGA 2014-2016



Source: ABS. 2017a. 8165.0 - Counts of Australian Businesses, by SA2 and Turnover Size Ranges

Regional capacity

A search of suppliers on the ICN Gateway⁹¹ that have registered as servicing the Central Queensland region identified 35 businesses registered under the construction category and 48 businesses registered under the mining category.

Of the 35 businesses registered under the construction category for the region, only one business listed a local address (Moranbah), while 13 listed a regional business address (Emerald, Mackay, Rockhampton, Gladstone).

⁹¹ ICN Gateway. 2017.

The remainder of registered businesses were national or international operations with office locations elsewhere in Queensland or NSW, and with some office addresses registered in Victoria, Northern Territory and Western Australia.

The types of businesses registered under the construction category included building and construction services, building and asset maintenance, education and training, inspection services, quality assurance, manufacturing and fabrication services, engineering, surveying, scheduling and project management, transport infrastructure and services, water supply and water infrastructure services, and workforce accommodation villages and services.

Of the 48 Central Queensland suppliers registered under the mining category:

- five listed a local office address (Moranbah, Clermont); and
- ten listed a regional office address (Emerald, Mackay, Rockhampton, Gladstone).

The remainder of registered businesses were national or international operations with office locations elsewhere in Australia.

The types of businesses registered under the mining category included crane hire and heavy haulage, engineering services and supplies, maintenance supplies, motor mechanics, mining equipment specialists, security, PPE suppliers, water infrastructure services, on-site medical and safety services and associated training, environmental services, education, training and labour hire.

A search of construction business listings on 'True Local' identified approximately 21 businesses registered in the local study area of Moranbah (12), Coppabella (2), Nebo (3), Dysart (1), Middlemount (1). The type of businesses listed under the construction category included general building and construction services, crane hire, equipment hire and fencing.

A search of mining businesses using the same business search engine identified a total of 12 businesses across Moranbah (4), Dysart (4), Nebo (3) and Coppabella (1). These businesses ranged from hire equipment suppliers to providers of mineral processing infrastructure, safety services, plant maintenance services and other general mining services (further definition unavailable).

There is potential for some of the True Local listings to no longer be active. There is also a possibility that some local businesses do not currently meet the capability standards required to register as an ICN supplier, or more local businesses have registered with the C-Res and are not yet utilising the ICN Gateway to its full potential.

However, the clear variance between local directory and ICN supplier listings suggests that there is an opportunity for further local business engagement in Project supply opportunities.

Indigenous businesses

A review of listings on the Black Business Finder⁹² in August 2017 identified six Indigenous-owned businesses in the Isaac LGA, including training, civil infrastructure, transport, management and workforce management businesses.

⁹² ICN Queensland. 2017.

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 Rockhampton LGA including employment and training services, contract and workforce services, security and cultural services.

CSR's *'Benchmarking Leading Practice in Aboriginal Business Procurement in the Extractive Resource Sector' Report*⁹³ focuses on Aboriginal business engagement in the mining and gas industries, based on the experience of Aboriginal business and skilled industry practitioners.

The report acknowledges that the resource industry has a tough business environment with high cost and risk sensitivity. Access to the supply chain is difficult for Aboriginal business because of (among other factors) difficulty in qualifying, the small size of most businesses, not being aware of opportunities in time, and a lack of visibility to procurement systems. The report includes practical guidance on addressing the four components, which has been considered in the Project's Local Content Strategy.

Indigenous Business Australia (IBA) assists Aboriginal and Torres Strait Islander peoples to access the skills, knowledge and resources required to start and grow businesses, and commissions research that supports and improves its approach to Indigenous economic development⁹⁴. IBA could be a resource to assist in increasing Indigenous participation in the mining and other industries in the study area.

4.9 Social Infrastructure

Major projects may affect both demand for and supply of social infrastructure (services, facilities and networks) in the communities of interest.

Issues of inadequate social infrastructure provision identified in Isaac LGA by the ULDA in 2009⁹⁵ include:

- unmet demand for childcare, kindergarten, health and medical services;
- unmet demand for affordable housing, and inadequate supply of land for housing development (since eased);
- limited employment diversity, so that partners of infrastructure service staff are unable to get work; and
- need for more police services, and an improved emergency response capacity for multiple casualties.

Since 2009, easing of housing costs and investment in housing by the ULDA, IRC and mining companies have reduced unmet need for affordable housing.

⁹³ Barnes, R., Harvey, B. and Kemp, D. 2015.

⁹⁴ Indigenous Business Australia. 2017

⁹⁵ Isaac Regional Council. 2009.

Consultation indicated that general practitioners' clinics in Moranbah have successfully recruited new staff (and in the case of the largest centre, new ownership), however health services in Nebo and Dysart have had challenges attracting and retaining doctors, and GP services are shared between towns, leading to only part time access. Affordability was also a concern with limited bulk billing available.

Health infrastructure is commonly stretched by the cumulative demands of non-residential workforces as the lack of other after-hours health services means evening presentations tax hospital resources. The hospital has had difficulty attracting and retaining staff, which during the mining industry peak, was largely attributed to a local accommodation shortage and competition with mining industry wages. Since the peak, health stakeholders have indicated a challenge retaining nursing and health service staff who have moved to the local area with their partners who work in the mining industry, who are now relocating or returning to Brisbane to pursue new opportunities. Some difficulty was also identified in engaging staff returning from maternity leave, and securing childcare options.

The following sections detail provision of social infrastructure facilities, services and networks in the local communities and others provided at LGA or broader regional levels.

4.9.1 Early childhood

The IRC LGA has a total of 13 early childhood education and care services, including five long day care services and three school aged care services, as shown in Table 4-37. Highest levels of childcare provision are in Moranbah. 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 4-37, Moranbah has three early childhood facilities which includes two child care centres and one kindergarten, plus an additional local childcare service, and playgroup.

Dysart has one day care centre 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 offering a combination of child care and kindergarten services, and one playgroup network. In 2011, Middlemount was home to 210 children aged under 5 years (representing 11.4% of the population, which is also higher than Queensland's average).

With the exception of a Playgroup Queensland network listed for Nebo, there are no early childhood facilities or services in Nebo (which was identified as a key concern by consultation participants there) or Coppabella. In 2016, Nebo was home to approximately 68 children aged under 5 years (representing 8.9% of the population) and Coppabella was home to around 8 children under 5 (representing 1.7% of the population). Consultation with Nebo residents indicated that many local families rely on the Valkyrie C&K child care centre, located approximately 45 km south (a 30 minute drive). Families in Coppabella are also likely to rely on local networks to access childcare, with Moranbah services a 35 minute drive west of Coppabella and Valkyrie just under a 30 minute drive south-east.

Table 4-37: Early childhood facilities, services and networks

Location	Early Childhood Facilities, Services, Networks	Facility	Service	Network
Moranbah	Simply Sunshine Childcare Centre	3	3	3
	Moranbah Early Learning Centre			
	Bright Beginnings Family Day Care			
	Bright Kids After School Care			
	Moranbah Neighbourhood Child Care Support			
	Moranbah Kindergarten			
	Playgroup Queensland (three groups)			
Dysart	Lady Gowrie Day Care Centre	2	0	2
	Dysart Kindergarten			
	Playgroup Queensland (two groups)			
Nebo	Playgroup Queensland (one group)	0	0	2
Middlemount	C&K Middlemount Community Childcare Centre Playgroup Queensland (one group)	1	0	1

Source: My Community Directory, 2017; Yellow Pages 2017

4.9.2 Primary and secondary education

There are 19 schools in the Isaac region as shown in Table 4-38, including five public primary schools, two secondary schools, (Moranbah and Dysart) and one amalgamated primary and secondary school in Middlemount.

In 2016, children aged 5-15 years made up 18.9% of the LGA population, including 1,518 children in Moranbah (17.4% of the Moranbah population), 511 in Dysart (17.1% of the Dysart population), 301 children in Middlemount (16.3%), 89 children in Nebo (11.8% of the SSC population) and 24 in Coppabella (5.2% of the SSC population).

Table 4-38: Primary and secondary education facilities

Location	Childcare	Primary	Secondary
Moranbah	Moranbah East State School	2	1
	Moranbah State High School		
	Moranbah State School		
Dysart	Dysart State School	1	1
	Dysart State High School		
Nebo	Nebo State School (high school students bussed to Mirani)	1	
Coppabella	Coppabella State School	1	
Middlemount	Middlemount Community School		1 (merged)

Source: My Community Directory, 2017; Yellow Pages 2017

4.9.3 School enrolments

The number of school enrolments is a proxy indicator of changes in the population profile such as the number of children and relative proportions of family households. Day 8 enrolment figures for the five-year period from 2013-2018 (see Table 4-39) indicate that state (primary) student enrolments overall had declined in Moranbah (an annual average change of 2.1%) and Dysart (an annual average change of -3.2%) over the five years. However, high school student enrolments had increased, in Moranbah by 3.2% and in Dysart by 4.1%

Enrolments had increased by six students in Nebo over the five years, and had decreased by five students in Coppabella (which currently has just 20 students). Middlesmount saw a significant decrease in enrolments, with an annual average decrease of 7.8%.

Table 4-39: School enrolments, day 8 2013-18

School Name	2014	2015	2016	2017	2018	5 yr change	Annual Av. Change
Moranbah East State School	723	642	687	606	566	-21.7%	-4.3%
Moranbah State School	554	548	563	559	575	3.8%	0.8%
Moranbah State Schools Total	1,277	1,190	1,250	1,165	1141	-10.6%	-2.1%
Moranbah State High School	564	625	607	622	653	15.8%	3.2%
Moranbah Schools - All	1,841	1,815	1,857	1,787	1794	-2.6%	-0.5%
Dysart State School	414	355	356	361	348	-15.9%	-3.2%
Dysart State High School	143	151	167	178	172	20.3%	4.1%
Dysart Schools - All	557	506	523	539	520	-6.6%	-1.3%
Nebo State School	61	59	73	73	67	9.8%	2.0%
Coppabella State School	25	21	14	17	20	-20.0%	-4.0%
Middlesmount Community School	399	391	363	308	244	-38.8%	-7.8%

Source: Queensland Department of Education and Training. 2017. Day 8 Enrolment Figures

4.9.4 Further education and training

The Isaac LGA has several local training services and facilities with a focus on training for employment in the mining industry, including:

- Allmyne Consulting and Training Services, Moranbah;
- B and J Hutt Training, Moranbah;
- Civil Safety Training, Moranbah;
- Coalfields Training Excellence Centre (CTEC), Moranbah;
- Queensland Minerals and Energy Academy (via Moranbah SHS);
- Sharp Training, Moranbah;
- TM3 Training Services;
- Dysart Youth Training Centre, Dysart;

- NCS Mining, Nebo; and
- Power Learning Pty Ltd, Clermont.

Consultation participants described the high local value placed on the CTEC (Big Blue Shed) in terms of training and employment outcomes, however CTEC is currently only available to Moranbah High School Students. Additional Mackay-based training services also service the study area.

Central Queensland Institute of TAFE has campus hubs at Emerald and Mackay, offering training in skills and competencies required for employment in the mining industry, as well as in areas such as hospitality. James Cook University has a small campus based at the Mackay Hospital's Education and Research Centre (MERC). 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 region⁹⁶.

4.9.5 Primary health

Primary health services in the study area are presented in Table 4-40. Additional primary and allied health services are provided by the Mackay Hospital and Health Service, with hospitals in the study area based at Moranbah and Dysart, and a nurse-led Community Health Centre at Middlemount.

Table 4-40: Primary health services, SIA study area

Town	Facility / Service	Practice /Service No.	Practitioners*
Moranbah	Oaktree Medical Centre	3	3-4
	Sonic HealthPlus Moranbah		4
Dysart	Dysart Medical Centre	1	1
Middlemount	Middlemount Medical Centre	1	1
Nebo	Nebo Medical Centre	1	0.2

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

Figure 4-19 presents the GP rate per 100,000 for the study area, calculated on FTE-adjusted GP counts for 2017⁹⁷ and 2016 Census results. While GP rates remain below the State and National benchmarks, these calculations show a high rate of service provision in Moranbah relative to the study area and LGA average. Rates of GP provision can often be lower in rural and regional areas due to challenges attracting and retaining workers from larger population centres.

⁹⁶ Queensland Department of Local Government and Planning. 2012.

⁹⁷ Adjusted to reflect FTE estimates from local service providers.

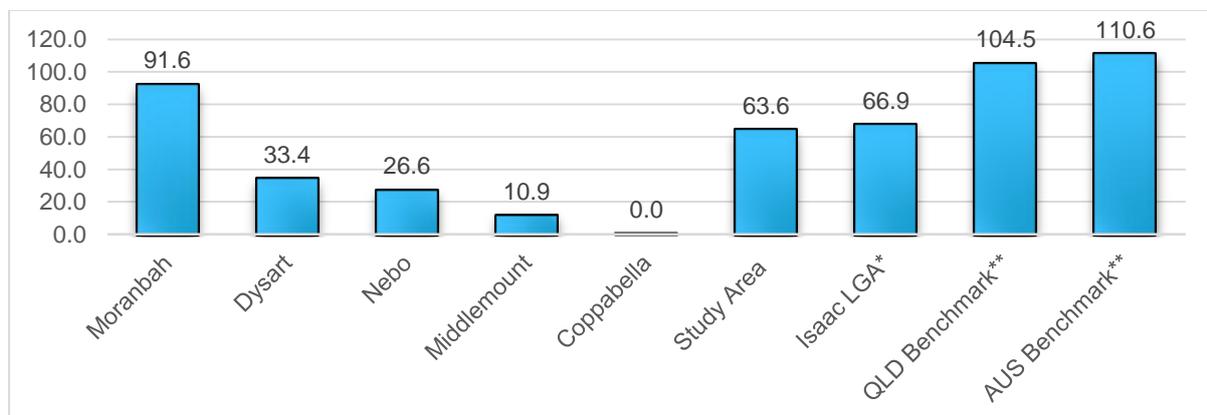
The Australian Department of Health has previously considered the ratio of 0.71: 1,000 as the standard doctor-to-patient ratio⁹⁸ and with approximately eight (8) GPs currently listed in Moranbah, indicates the supply is at an adequate level for the residential population. However, the non-residential population also use local services, which locals note has resulted in longer waiting times on occasion in the past few years. Consultation participants also noted that non-resident workers present a heavy load on mental health services and clinical nursing staff, with one service provider estimating that they represent 40% of the current service load.

Nebo has a modern medical centre (developed by IRC) but no resident doctor. The CQ Rural Health Partnership provides a doctor fortnightly from a Sarina practice, as well as a visiting dentist.

In Dysart, there were 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 of 33.4 per 100,000 – is insufficient. 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 Hospital and Dysart Medical Centre.

Middlemount currently has one doctor at the medical centre, and 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.

Figure 4-19: GP rate per 100,000 compared to National and State benchmarks



Source: GP counts sourced from North Queensland PHN, August 2017 and adjusted to reflect FTE estimates for Moranbah (12 listed, 7-8 FTE), Middlemount (5 listed, 1 FTE), Nebo (1 listed, 0.2 FTE) and Dysart (1 FTE).

*Note: Isaac LGA count updated based on study area FTE estimates.

**Benchmarks used in 2016 Health Needs Assessment for North Queensland region, including Isaac LGA.

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.

⁹⁸ Health workforce definition by the Australian Department of Health and Ageing. 2005. Cited by Kamalakanthan, A. & Jackson, J. 2006.

Mental health services are provided through the Moranbah District Mental Health Service, which also provides limited outreach services to other local towns.

Many non-resident workers, as well as residents, from Dysart, Coppabella and Nebo rely on Moranbah’s health infrastructure, including the GPs, Hospital, and allied health, and/or travel to Mackay for health services.

4.9.6 Hospital and health services

The Isaac LGA is serviced by hospitals at Moranbah, Dysart and Clermont, and a nurse-led Community Health Centre at Middlemount.

As shown in Table 4-41, 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 through Moranbah Community Health Centre, including 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 has funding for a school-based youth health nurse, and is currently recruiting for a full-time community 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 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. Trials are underway in Moranbah for specialist service consultation via videoconference, improving access to services and enabling local staff to provide pre- and post-operation support.

Table 4-41: Hospital and Health Service Profile, SIA study area

Characteristic	Moranbah Hospital	Dysart Hospital	Middlemount Community Health	Mackay Base Hospital
Number of beds (2017)	Approximately 12 beds)	Approximately 9 beds	NA	100-199 beds
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	Aged Care, Anaesthetics, Chronic Diseases, Coronary Care, Day Surgery, Emergency Medicine, Intensive Care, Medical Specialists,
Allied health	Speech pathology, physiotherapy and social work.	NA	NA	Dietician, Occupational Therapist, Physiotherapy, Psychologist, Social Work Speech Pathology

Characteristic	Moranbah Hospital	Dysart Hospital	Middlemount Community Health	Mackay Base Hospital
Visiting services	Psychiatrist, a paediatrician, and the Royal Flying Doctor Service's Women's Health Clinic	Visiting speech pathology, palliative care, mental health, and Royal Flying Doctor Service's Women's Health Clinic	Visiting women's health nurse	Haematology, Neurosurgery, Radiation Oncology, Telehealth, Vascular Surgery
	Telehealth services are available to link patients with specialists in other areas.			
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	Outreach in Asthma Care, Cardiac, Rehabilitation, Generalist Nurses, Midwifery, Pain Management, Palliative Care

Source: Queensland Health. 2017. Hospital and Health service profiles.

4.9.7 Police, Emergency Services and Justice

Table 4-42 profiles Queensland Police, Emergency Services and Justice services available in the study area. The results of consultation with local emergency service providers indicated stable resource numbers and adequate capacity for the Fire and Rescue Service and Queensland Ambulance Service, but constrained resourcing for Queensland Police. Ambulance services noted that mine site emergency demands represent a load on ambulance services and take them out of local communities for five to six hours.

Table 4-42: Police, emergency service and justice profile

Location	Police	Ambulance	Fire	Other	Justice
Moranbah	Moranbah Police Station	QAS (24 Hr – 1 Officer in Charge, 3 Paramedics)	QFRS	SES Moranbah	Moranbah Court House
Dysart	Dysart Police Station	QAS (2 Officers)	QFRS		
Nebo	Nebo Police Station	QAS (1 Officer)	RFB (1 Officer)	Nebo SES	
Coppabella		Honorary Station			
Middlemount	Middlemount Police Station	QAS Station (1 officer)			

Source: Queensland Police Service. 2013; Queensland Ambulance Service. 2017; Moranbah & District Support Services 2017; Nebo Community Development Group Inc. 2017

Moranbah

As shown in Table 4-42, police, emergency service, and justice services in Moranbah include:

- Moranbah Police Station;
- Moranbah Ambulance Station;
- Moranbah Fire and Rescue Service; and
- Moranbah Court House, a Queensland Government Agents Service.

Moranbah Police Station covers the area to Coppabella, halfway to Nebo and halfway to Glenden. Coppabella has no locally-based police or emergency service offices except for an honorary ambulance station.

The Moranbah Ambulance Station⁹⁹ provides a base for four paramedics and an officer-in-charge, as well as a fleet of three ambulance vehicles. Ambulance officers noted that the service catchments will be split across the Project area with the Moranbah based service is more likely to service the Olive Downs South Domain and Dysart serving the Willunga Domain.

Moranbah is also serviced by an auxiliary fire brigade made up of 20 volunteer members. In addition, the SES Moranbah provide support for statutory services (Police, Fire, and Ambulance) where an emergency or disaster is beyond the resources of those services.

Moranbah has a Magistrates Court House, which also provides a Queensland Government Agents Service.

Dysart

Dysart is serviced by local police and emergency services including:

- Dysart Police Station;
- Dysart Ambulance Station; and
- Dysart Fire and Rescue Service.

Dysart Police Station covers an area of approximately 80 km of arterial road including two mines in the division and two mines outside the division (Peak Downs Mine at Moranbah and German Creek Mine at Middlemount). However, the main work is within the town of Dysart.

Nebo

Nebo is serviced by local police and emergency services including:

- Nebo Police Station; and
- Nebo Community Emergency Services Complex which provides a local base for the Nebo Ambulance Service, Queensland Fire and Emergency Services and the Nebo SES;

One Officer staffs the Nebo Police Station, with an operational focus on traffic and community policing.

Middlemount

Police and emergency services in Middlemount include:

- Middlemount Police Station, manned by two officers;
- Middlemount Ambulance Station; and
- Middlemount Queensland Fire and Rescue Service.

In March 2017, Middlemount Fire and Rescue Service renewed its call for more community members to become auxiliary firefighters, which suggests a gap in local resourcing levels¹⁰⁰.

⁹⁹ Queensland Cabinet & Ministerial Directory. 2011.

¹⁰⁰ Middlemount Fire Station Facebook Page. 2017.

4.9.8 Community and civic services

Community and civic services and facilities in local towns are provided through a combination of IRC provision (e.g. community centre and hall provision and management), Government funding for community and health services, and community management.

Moranbah offers the widest range of community and civic services and community and family support services in the study area, as summarised in Table 4-43.

The Moranbah and District Support Service runs targeted programs including a rural family support program, a Neighbourhood Centre program, and a settlement program. Moranbah's Emergency and Long Term Accommodation (ELAM) Support Service 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.

The key social housing provider in the Moranbah/Dysart area is ELAM, as discussed in Section 4.4.6. ELAM is reviewing their housing stock as there are approximately 30 vacant public housing dwellings. There have been inappropriate referrals made from South-East Queensland (SEQ), where applicants have high needs and 'the region is bereft of the support and resources that they need'. The inappropriate referrals are partly due to Department of Housing criteria, with applicants from Queensland regions advised that they have to take a house in Moranbah or be returned to the bottom of the application list, in addition to a lack of support resources. ELAM and related services are also tasked with helping meet the immediate needs of inappropriate referrals, plus the costs of returning them to a place where they can access the help they need.

With construction planned for 2018-19, Moranbah's new Youth and Community Centre will provide an important meeting place and a wide range of services for community members, especially young people.¹⁰¹

There are no aged care residential services in the local towns. 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. HCC 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 Mackay.

¹⁰¹ Queensland Department of State Development. 2017a.

Table 4-43: Community and civic services

Location	Facilities & Services	Community and Family Support
Moranbah	Moranbah Community Centre Moranbah Youth and Community Centre (construction expected 2018)	Moranbah and District Support Services ELAM Centacare Community Solutions Salvation Army Moneycare Program Hinterland Community Care Inc. BMA Settlement Program
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)
Nebo	Nebo Memorial Hall	NA
Coppabella	Queensland Railway Institute – Coppabella	NA
Middlemount	Middlemount Community Hall	Capella Tieri Middlemount Community Support Network

Source: My Community Directory. 2017. Yellow Pages 2017

4.9.9 Recreation and cultural facilities

The study area towns 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. Table 4-44 summarises the facilities available, with further discussion below.

Sport and recreation

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.

The Isaac region 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.

Nebo's Showgrounds and Sporting Oval is the town's central sport and recreation facility, co-located with the town's pony club grounds and gymnasium. Nebo also features a public swimming pool open seven days. 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 4-44: Recreation and cultural facilities

Location	Sport and Recreation	Arts, Culture, Amenity
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
Dysart	Dysart Recreation Centre and Swimming Pool Dysart Golf Club Dysart Bowling Club Centenary Park, Lions Park, Fox Park Leichardt Oval and Recreation Park Lucy Daly (Soccer) Oval, Warren Oval, Hickey Oval Netball / Basketball Courts and Tennis Courts	Dysart Library and Art Space Dysart Civic Centre
Nebo	Nebo Swimming Pool Nebo Showgrounds and Sporting Oval Nebo Pony Club Nebo Gymnasium Nebo Tennis Courts	Nebo Memorial Hall Nebo Historical Museum
Coppabella	Coppabella Pool Sports Oval Basketball Court	NA
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

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 hobbyists¹⁰². 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.

¹⁰² Isaac Regional Council. 2011.

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). Nebo's relocated history museum, from the Nebo Police Station complex to its own site in 1998, is described as a tribute to the local area's pioneering history. It features the Mount Britton Collection of paintings which depict the way of life of early European settlers¹⁰³.

4.10 Summary of baseline indicators

A preliminary summary of the social values, conditions and key socio-economic indicators as identified through research and analysis is presented in Table 4-45.

¹⁰³ Mackay Region Visitors Information Centre. 2016.

Table 4-45: Summary of key indicators

Baseline Indicators		Findings	SIA Study Area	Moranbah	Dysart	Middlemount	Nebo	Coppabella
Demography and housing	Population	The Isaac LGA experienced a decrease in population during 2011-2016, in line with cyclical trends.	20,940 in Isaac LGA	8,735	2,991	1,841	753	466
	Indigenous Community	There were 744 Indigenous people in the Isaac LGA.	3.6%	3.9	4.5	3.5	4	4.7
	Non-resident population	In 2017 the FTE population of the Isaac LGA was estimated at 31,835 people, of whom 33.2% were non-resident workers.	N/A	2,190	1,605	1,250	440	NA
	Age	Median ages were lower than the Queensland average.	32 for Isaac LGA	30	31	30	35	38
	Families	There were higher than average proportions of couple families with children in the study area.	73.9% for Isaac LGA	76.2	72	80.7	68.9	64.9
	Unoccupied dwellings	Between the five towns, there were more than 2,210 unoccupied dwellings.	34.5%	29.2%	41.0%	43.9%	39.7%	41.6%
	Housing rental	The study area had very high percentages of rental tenure, in part due to mining companies' ownership of housing.	63.5%	76.6%	69.2%	94.9%	44.2%	77.8%
	Asking rents Houses July 2018	Median weekly rents were lowest in Dysart and highest in Moranbah.	NA	\$290/wk	\$170/wk	\$250/wk	\$2,600/wk	NA
	Rental vacancy rate	Rental vacancy rates have declined in the past three years.		0.8%	5.76%	1.8%	8.2%	NA
	Building approvals	Building approvals values peaked in both Isaac LGA and Mackay LGAs during 2012-2013, and have declined sharply since.						
	WAV Beds	There are several WAVs in the LGA, with an average occupancy rate of 57.1% and a spare capacity in 2017 of around 7,930 beds.						

	Baseline Indicators	Findings	SIA Study Area	Moranbah	Dysart	Middlemount	Nebo	Coppabella
Social advantage and disadvantage	Advantage	SEIFA scores declined for all towns except Coppabella during 2011-2016.	987 (Isaac LGA)	1,011	956	988	964	1,018
	Incomes (Household)	Average weekly incomes in the study area were above the QLD average, but generally dropped over the five years 2011-2016.	N/A	2,421	2,152	2,405	1,710	2,328
	Cost of living	Moranbah and Mackay had higher scores than the Brisbane comparator for the 'all items less housing' cost of living index. Moranbah's housing costs were lower than for the Brisbane region, due the recent normalisation of housing prices.						
Community health and safety	Health indicators	Risks to population health in the Isaac LGA include behaviours (including smoking, drinking and injury), an increasing rate of mental health service presentations and lack of access to specialist practitioners and birthing services in the LGA.						
	Community safety	Isaac'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. Isaac's offence rates were substantially lower than the Regional and State averages. Consultation participants (including community service providers and police) provided anecdotal evidence of an increase in domestic and family violence, influenced by the economic downturn, and drug and alcohol use.						
	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.						
	Unemployment	There were very low rates of unemployment in the Isaac LGA, Moranbah and Broadsound-Nebo SA2 compared to the Queensland average. Indigenous unemployment as measured by the Census was higher than the non-Indigenous rate (2.3% compared to 2.0% in the Isaac LGA), but more than three times higher in the MIW region, and particularly high among Indigenous women.						
	Mining Employment	Comparison of ABS Census 2016 and 2011 based on place of work indicates that the number of coal mining jobs located in the Isaac LGA contracted considerably between 2011 and 2016, with a loss of 3,772 jobs (equivalent to 40% of the total).						
	Occupations	The Isaac LGA's largest occupational group at the 2016 Census was machinery operators and drivers at 23.7%, followed by technicians and trades workers at 20.7%.						
Business and Industry	Economic strengths	Isaac LGA's economic strengths include significant thermal and metallurgical coal deposits; a long standing agricultural industry; strong international export market focus for coal, agriculture, aquaculture, sugar cane and beef.						
	Business profile	98% of Isaac LGA's registered businesses were small businesses with fewer than 20 employees in June 2016. Both Isaac LGA and the Mackay SA4 experienced a decline in the number of businesses between 2014/15 and 2015/16. There are at least six Indigenous businesses in the Isaac LGA and 16 in the Mackay LGA.						

5 Social impacts and opportunities

This section assesses the likely social impacts and benefits of the Project proceeding, including:

- employment;
- population;
- housing;
- social infrastructure
- local business participation;
- community values;
- community wellbeing;
- cumulative impacts; and
- the potential impacts of Project closure.

5.1 Stakeholder inputs

As discussed in Section 3, the SIA engagement process enabled a range of stakeholders to provide inputs to the impact assessment and mitigation strategies. Potential impacts and benefits identified by workshop participants included:

- the Project could assist to increase and stabilise local populations (discussed in Section 5.3);
- local employees contribute to community cohesion (discussed in Section 5.7.4);
- concern about traffic safety due to increased traffic volumes (discussed in Section 5.6.5);
- the importance of clear forward planning and communication to ensure emergency service resources are available to meet needs (discussed in Section 6.6.5);
- competing demands for health services between non-resident mining workers and locals (discussed in Section 5.5); and
- potential impacts are positive for the area's development but need to be managed particularly in context of cumulative impacts (discussed in Section 5.9).

Survey participants' views are summarised below. Sample sizes from Nebo and Middlemount were insufficient to draw conclusions, but their residents' scores for perceptions of impacts and benefits were similar to those of Moranbah and Dysart. The Project was viewed as likely to contribute:

- positively to employment and training options across all local areas, with ratings between 4 and 4.53, with highest ratings in Dysart;
- positively to local business and trade across all local areas (from 4 to 4.74), again with highest ratings in Dysart;
- positively (at varying degrees), to community values in Moranbah (3.48) and Dysart (4.23);
- positively to community and health services in Dysart (4.18), however responses from Moranbah and Middlemount indicated some negative impact on services is anticipated;

- positively to community wellbeing in Dysart (4.09) with a less positive response in Moranbah (2.92); and
- less strongly to housing affordability and availability in Dysart (3.62) and Moranbah (2.92).

Moranbah respondents anticipated a positive contribution to local business and trade (4.04) and employment and training (4), community values (3.48), community wellbeing (2.92) and housing (2.92). Comments included:

[a benefit to local business and trade] *'... provided workers are allowed to live locally and the company endeavours to use local procurement.'*

'Hopefully respect the importance of health, safety and wellbeing for the community.'

'If the employer doesn't have 'zero tolerance', anti-social behaviour will impact on the community.'

'If [the Project's] personnel have to use our health services, without a permanent population to count in the census, we are adversely affected especially if there is an emergency.'

'Growth in population is good for the current depressed housing market. Plenty of land availability so supply and demand won't drive the market too high.'

Dysart respondents mostly anticipated a strong positive contribution to local business and trade (4.74) and employment and training (4.65), followed by a positive contribution to community values (4.23) and community and health services (4.23) wellbeing (4.14) and housing (3.72). Comments includes:

'Give some locals permanent work and bring people back to our town and fill up the empty house and give new business incentives.'

'Will give our young people the opportunity to start a career in the mining sector.'

'Increase in population should increase business in town. This will be a fantastic result for Dysart!'

'It comes down to people. Happy less stressed people give more to their community. Giving choice to employment gives a sense of stability back to a community.'

Conversely, one participant said "[the Project will have] *no benefits, isn't there enough mines in the area. What about the great farming ground that will be destroyed for corporate gain?*"

Comments from Middlemount respondents regarding potential social impacts and benefits largely related to local employment, local business and housing, such as and included: *'Offer employment to local residents, and encouraging contractors to house residents locally.'* Among Nebo respondents, the Project was generally viewed as making a having a positive effect on the community, with comments such as: *'as long as the Project promotes local employment, business, housing, infrastructure, etc, it will be good.'* Encapsulating the key messages was this quote from a community survey participant: *'Employ locally, live locally, fund locally, buy locally and communicate regularly.'*

The following sections discuss the Project's potential impacts and benefits.

5.2 Employment

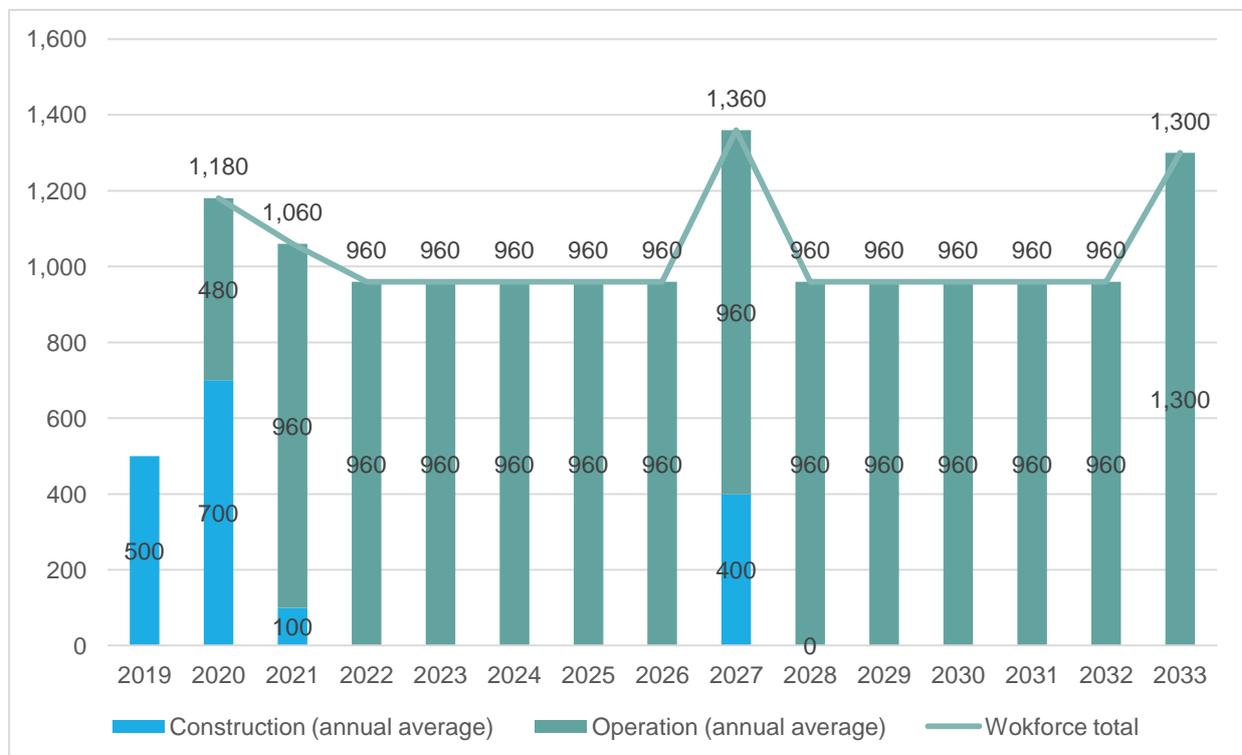
If approved, construction of the Project infrastructure would begin in 2019, with operations to produce first coal in 2020. In summary, Project employment would include:

- between 500 and 700 jobs to develop and construct the Olive Downs South domain over an initial 18 months to two years of construction during 2019-2020, falling to 100 construction jobs for completion works in 2021;
- approximately 480 operational jobs commencing during 2020, ramping up to 960 jobs in 2021; and
- between 300 and 500 jobs for expansion the Olive Downs South mining infrastructure and construction of the Willunga domain from 2027, which for the purpose of assessment has been assumed as an average of 400 jobs for one year.

The combined number of jobs for construction and operation would total approximately 1,180 people in 2020, decreasing after Olive Downs South domain’s construction is complete to maintain 960 operational jobs until 2032.

The second construction period for expansion of Olive Downs South infrastructure and then development of the Willunga domain would see a total of approximately 1,360 jobs during 2027. From 2033, production would reach 20 Mtpa, requiring approximately 1,300 personnel. Figure 5-1 shows the average annual number of jobs that the Project would create to 2033. An ongoing requirement for 1,300 personnel is anticipated to approximately 2050, after which the production rate would reduce to approximately 8 Mtpa with a corresponding reduction in the workforce.

Figure 5-1: Project Employment Numbers



5.2.1 Workforce arrangements

It is expected that Pembroke would contract a construction company to manage Project construction. Work packages are still to be determined in detail, however Principal and major contractors are likely to be appointed to develop:

- the mine site (pits and waste emplacement areas, haul roads and accompanying facilities for workers);
- mine infrastructure areas and the CHPP;
- access roads and infrastructure corridors for electricity, water and rail; and
- ancillary infrastructure (workshops, offices and personnel facilities).

Some construction activities would occur 24 hours a day seven days a week. Shifts of 12 hours are expected, with rosters likely to be 21 days on and seven days off or as agreed by the construction companies in consultation with Pembroke and the relevant workers' unions. Non-local construction personnel would stay in WAVs in Coppabella, Dysart or Moranbah, or in rental accommodation in Moranbah and/or Dysart, subject to availability as discussed in Section 5.4.

It is expected that Pembroke would contract a company to establish Project operations and manage the operation for a period of approximately five years, after which either Pembroke would assume management, or the contract for mine management would be extended. Commitments to workforce management and development made in the EIS will be extended to any operational contractors.

Shift times and rosters for the operational phase of the Project will be the same for non-local and local workers, and are expected to include:

- operational hours would be 24 hours a day, seven days a week;
- mining operations would be on a 12.5 hour shift cycle roster, working seven days on, seven days off; and
- senior management and staff would work a five days on (Monday to Friday), two days off roster.

All local employees within a one hour drive would be able to travel between home and the project daily. Non-local employees (those with a drive time of more than one hour) would stay in WAVs in Coppabella, Dysart or Moranbah, or in rental accommodation in Moranbah and/or Dysart as discussed in Section 5.4, travelling home at the end of their seven day 'swing'. This is likely to include Drive-in Drive out personnel based in other towns within the Isaac LGA. Options for bus transport and car pooling to the Project would be made available.

Pembroke's recruitment strategy for locally-based and Drive-in Drive out employees is provided in Section 6.4.3.

5.2.2 Potential labour availability

Construction

Construction industry categories include building construction, heavy and civil engineering construction and construction services. Building construction workers are primarily employed in the residential and commercial sectors, so the occupational groups which represent the prime labour pool for Project construction are:

- heavy and civil engineering construction including:
 - mine site construction;
 - heavy machinery installation; and
 - railway and pipeline construction;
- construction services including:
 - site preparation (e.g. earthmoving, excavation and blasting);
 - building structure services (e.g. concreting and structural steel work); and
 - installation services (e.g. plumbing, electrical and fire safety services).

As discussed in Section 4.7, 346 Isaac LGA residents were employed in the construction industry in 2016 (approximately 400 fewer people than in 2011), and in the Mackay LGA there were almost 4,000 people employed in construction (approximately 2,000 fewer people than in 2011).

As 79% of construction jobs located in the LGA were heavy and civil engineering construction and construction services, it could be assumed that approximately 270 of the LGA's construction workers were in this category. The number of construction jobs located in the Isaac LGA decreased by more than 1,100 during 2011-2016, including 728 heavy, civil engineering and construction services jobs. In the Mackay LGA, 686 heavy, civil engineering and construction services jobs were lost.

Construction workers are highly mobile, and the short term nature of contracts means that labour availability fluctuates so it is difficult to estimate availability, however many of the people in the two LGAs who were previously employed in construction may still be living locally and available to the Project. The Isaac and Mackay LGAs have significant strengths in construction for the mining industry and as such it is expected that a proportion of the construction workforce could be drawn from the two LGAs, particularly if advance notice is provided to local construction business. This may lead to greater competition for construction labour (see Section 5.8.2) but is unlikely to disadvantage businesses in the local study area.

Operations

As a result of mining industry contraction and population loss between 2011 and 2016, the number of employed usual residents in the Isaac LGA contracted by 2,097 people. This was led by decreases in employment in mining (of more than 1,000 people) and the construction industry (of more than 400 people). Despite the losses, the LGA's mining workforce comprised 3,757 people in 2016, and there were a further 6,516 mining industry employees in the Mackay LGA. This is a total pool of 10,273 mining employees.

Whilst unemployment figures indicate that the vast majority of mining workers in the Isaac LGA are employed, registered rates of unemployment do not account for underemployment, i.e. people working part time rather than full time, contractors who are in sporadic employment, and those who have become discouraged from looking for work. Consultation confirmed that whilst unemployment rates are low in the study area, there is potential for latent capacity due to contracting and underemployment. Participants also noted that people who have taken redundancies and unemployed young people whose parents' income prevents them from registering for unemployment benefits are likely to be under-represented in the Centrelink data. As such, there may be more labour availability in the region than is indicated by these data.

The Project is likely to attract both currently employed workers as well as unemployed workers, particularly people who were previously employed in mining but had their employment terminated or converted to a contract, and people who would prefer residential positions to their current FIFO positions.

Indigenous labour availability

In 2016, there were 337 Indigenous people in the Isaac LGA's labour force (of whom 28 people or 8.3% were unemployed).

There were also 114 Indigenous young people of 15-24 years in 2016, and at least 177 children who will reach working age during the Project's operational term. In total this is a potential future pool of 291 Indigenous young people in the Isaac LGA over the next ten to fifteen years. Barada Barna people living to other regions could also be attracted to work in the Project, so the BBAC's information networks should also be considered as a recruitment channel. Given higher rates of youth unemployment and Indigenous unemployment, the Isaac LGA's Indigenous young people in particular present a prime talent pool for the mining industry.

The Mackay LGA's workforce included 2,334 Indigenous young people in 2016, of whom 502 people (21.5%) were unemployed. Mackay residents are more likely than others to have family ties to the Isaac LGA and/or in the local mining industry, which increases the attractiveness of employment options in Isaac LGA. As such the Mackay region should also be considered as a primary recruitment target with respect to Indigenous workers.

Assuming 10% of unemployed Indigenous people were interested in careers in the mining industry, with a total of 530 unemployed Indigenous people (as counted in June 2016) between the two LGAs, this would see at least 50 Indigenous people potentially available for work. The potential labour supply includes people who work part-time but need more hours, and others who want to work but are discouraged job seekers or not available to start due to health or family reasons, so this may be an under-estimate.

5.2.3 Construction workforce requirements and origin

The Olive Downs South domain including the CHPP would be constructed from approximately June 2019 – June 2021, requiring approximately 500 personnel in the first year and 700 in the second, with 100 personnel remaining for CHPP completion and installation works in the 2021. Around Year 9 (2027), a construction workforce in the order of 300 to 500 people (an average of approximately 400 personnel) would be required to expand the Olive Downs South domain mine infrastructure area and construct the Willunga domain mine infrastructure area.

Occupations represented in the construction workforce would include:

- earthmoving plant operators;
- structural steel and welding trades workers;
- professionals including geologists, managers, safety officers, engineers and environmental scientists;
- painting, plumbing and electrical trades workers;
- concreters; and
- construction and mining labourers.

Averaged at 600 people over two years, the construction labour requirement for the Olive Downs South domain would exceed the Isaac LGA’s heavy, civil and construction services capacity (particularly as many will already be employed). Cumulative labour force demands are also expected as a result of projects including new mines or extensions in the Bowen and Galilee Basins and major rail projects (see Section 5.9).

Local and regional labour availability will need to be tested as part of the recruitment process, but for the purposes of assessment it has been assumed that approximately 20% of the construction workforce could be drawn from towns in the Isaac LGA, which would represent approximately 140 people during the first construction period and 80 people during the second construction period. The remainder would be drawn from other regions including Mackay and Rockhampton.

Some construction workers may be contracted for up to two years and a proportion may choose to move to the Isaac LGA with their families for the period of construction or beyond. For the purpose of assessment, this has been estimated at 5% of the total, or an average of 30 personnel over the first two years of construction and approximately 20 personnel during the second construction phase.

Table 5-1 provides estimates of the number of local (existing and new) and non-resident construction workers based on these assumptions.

Table 5-1: Construction Labour Requirements

Construction	2019	2020	2021	2022-2026	2027
Construction (annual average)	500	700	100	0	400
Existing local workers at 20%	100	140	20		80
New local workers at 5%	25	35	5		20
Commuting workers	375	525	75		300

The availability of an average of 600 jobs during Years 1 and 2 and 400 jobs in 2027 will be a strong positive benefit for local and regional construction workers and companies. To maximise local employment in the construction stage, the Project will ensure that local and regional businesses have adequate advance notice of the construction schedule, and that a program of engagement with construction businesses is implemented before tendering for work packages and support services commences. This is discussed in Section 6.7.

5.2.4 Operational workforce requirements and origin

Olive Downs South operations are proposed to commence in 2020 with a workforce of approximately 480 people, building to 960 people in 2021. With further development from 2033, the workforce could increase to approximately 1,300 personnel, which would be maintained until around 2050 before decreasing in line with decreasing production rates.

Mines in the Isaac LGA employed an estimated 17,226 people in March 2017 (see Appendix A Table A-2). Assuming these numbers remained constant to 2020, the Project would increase the availability of mining jobs in the LGA by 2.8% in 2020 and 5.6% in 2021.

Inclusive of these percentages, the total workforce of 1,300 people in 2031 would represent an increase of 2016 numbers of approximately 7.5%.

Occupations required by the Project will include:

- machinery operators;
- truck drivers;
- tradespeople including diesel fitters, boiler makers, electricians, plumbers, gasfitters and painters;
- engineers, surveyors and geologists;
- health, safety, human resources and mine management professionals; and
- administrative staff.

Pembroke's first priority for recruitment will include personnel from within the Isaac LGA, initially focussing on Moranbah, Dysart, Middlemount and Nebo. This will not preclude people in other Isaac towns applying for jobs, however fatigue management requirements will constrain the ability of people from other towns to commute daily.

The number of local workers who may be available to the Project is unknown. Unemployment was low at 2.1% in June 2017, however, the LGA's labour pool also includes:

- under-employed (e.g. part time or casual) workers in the mining industry;
- short-term contractors who would prefer long term jobs;
- people (including young people) who are new to the mining industry;
- people who could be attracted from other mining operations in the Isaac and other LGAs; and
- recruitment of employees from other Isaac towns and Queensland regions with labour availability (as advised by the Coordinator-General) for other towns and regions is the second key strategy.

Employees from outside the local towns would be encouraged to move to local towns, however some non-local employees will choose to commute to work via car, bus or plane, staying locally during their shifts.

In order to estimate the range of potential impacts on employment availability, population, housing and social infrastructure, this assessment has considered scenarios with varying proportions of existing local, new local and non-resident workers (see Table 5-2). Actual proportions are likely to vary, with increasing proportions of local workers possible over time, particularly as housing supplies respond to demand, but the scenarios provide the basis for assessing likely lower and upper limits of impacts.

5.2.5 Local /non local workforce scenarios

Three scenarios for the origin of Project employees (existing local, new local and commuting) have been modelled for the Project's operational start-up during 2020 and 2021 as follows:

- Scenario 1: the workforce will comprise 25% existing Isaac LGA residents, 25% new local workers (moving to the Isaac LGA from other regions), and 50% commuting workers (who will return home to other regions when they are off shift);
- Scenario 2: the workforce will comprise 50% existing local workers, 25% new local workers and 25% commuting workers; and
- Scenario 3: the workforce will comprise 25% existing local workers, 50% new local workers and 25% commuting workers.

These estimates have been used to forecast impacts on population, housing and social infrastructure. Actual proportions will vary and will be monitored to ensure that potential impacts are within the range assessed.

The Project anticipates that an increase to production in 2033 could require a workforce of 1,300 people. As this is 16 years in the future, a detailed assessment of the potential impacts of expansion impacts would need to be undertaken two to three years prior to the intended ramp-up. This SIA has considered the potential future peak in general terms.

Labour draw from each town and the proportion of new residents who may settle in each town has been based on the following proportions:

- Moranbah: 50% of existing local labour and attraction of 50% of new local workers;
- Dysart: 25% of existing local labour and attraction of 25% of new local workers;
- Middlemount: 15% of existing local labour and attraction of 15% of new local workers; and
- Nebo: 10% of existing local labour and attraction of 10% of new local workers.

The basis of this apportionment is:

- in 2011, Moranbah's labour force of 5,049 people was comparable to the Broadsound-Nebo SA2's labour force of 5,242 people. (These data were not available for 2016, but the proportions are expected to be similar). As such Moranbah is likely to have a greater capacity to supply labour, approximately equal to the combined contribution of Dysart, Middlemount and Nebo; and

'new local' employees will choose which town they move to, considering factors such as amenity, access to social infrastructure, housing choice, distance to the Project site, and distance to regional centres. Due to its role as the LGA's centre, housing choice and proximity to the Olive Downs South domain, Moranbah is likely to attract a greater proportion of new workers to settle.

Table 5-2: Operational workforce - basis for scenario assessment

Operations	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Operation (annual average)	480	960	960	960	960	960	960	960	960	960	960	960	960	1,300
Existing local workers at 25%	120	240	240	240	240	240	240	240	240	240	240	240	240	325
Existing local workers at 50%	240	480	480	480	480	480	480	480	480	480	480	480	480	650
New local workers at 25%	120	240	240	240	240	240	240	240	240	240	240	240	240	325
New local workers at 50%	240	480	480	480	480	480	480	480	480	480	480	480	480	650
Commuting workforce at 50%	240	480	480	480	480	480	480	480	480	480	480	480	480	650
Commuting workforce at 25%	120	240	240	240	240	240	240	240	240	240	240	240	240	325

Non-local workers are likely to be accommodated in WAVs in Moranbah or Coppabella (assumed at 50% in each location), as also shown in the figures below.

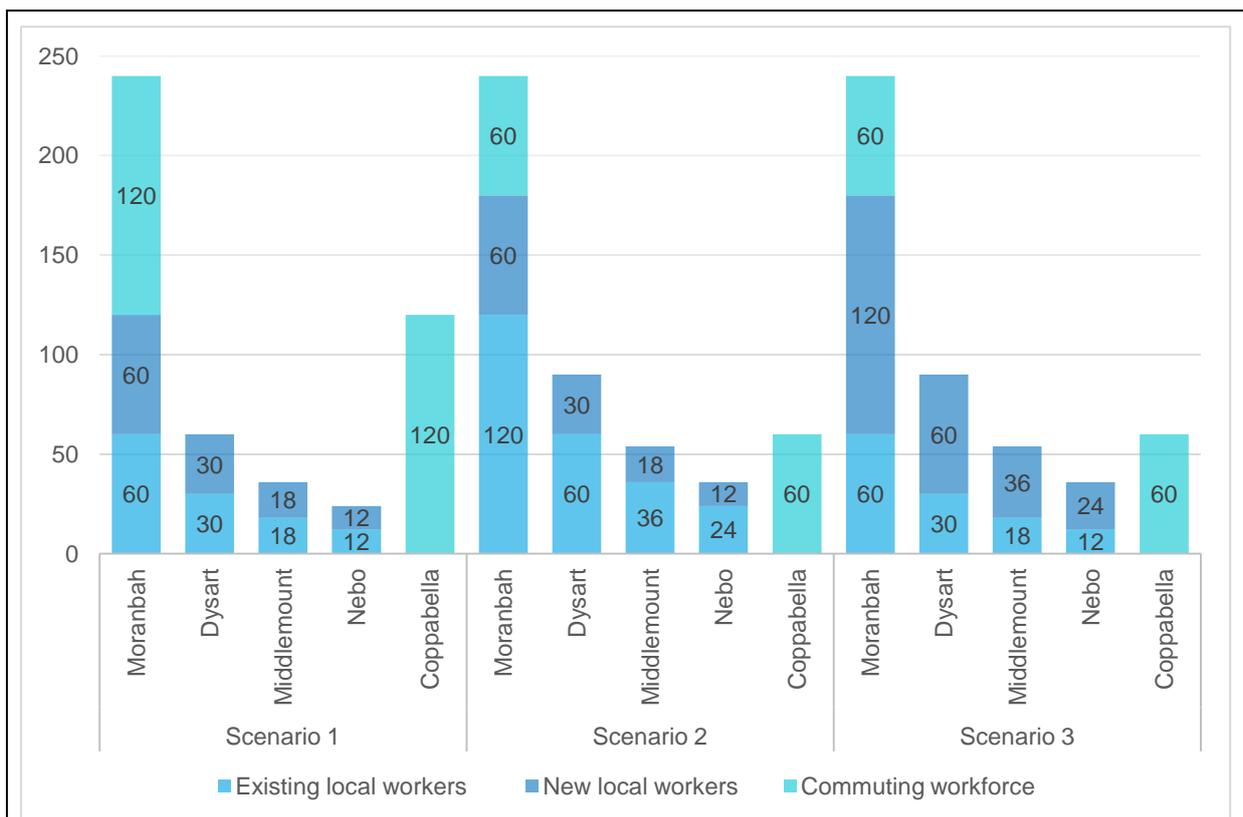
The implications of each scenario for population, housing and social infrastructure are outlined from Section 5.3.

Potential local, new local and commuting workers - 2020

Figure 5-2 shows the potential numbers of existing local personnel, new locals and commuting workers based on the three scenarios during 2020. With 25% local employment, 120 Isaac LGA residents would be employed, which is likely to be well within the capacity of the current labour force. Achievement of employment of 240 local people is also within range given the estimated labour capacity which includes existing mining workers, unemployed workers and latent capacity.

The availability of a large number of long term jobs is likely to be highly valued by existing residents, and will underpin a range of community benefits as discussed in following sections. In particular, people who have been under-employed, are on tenuous contracts or are new to the mining industry will benefit from training and long term employment options.

Figure 5-2 Local/Non Local Personnel Scenarios - 2020



Scenario 1: 120 Isaac LGA residents would be employed (approximately 60 from Moranbah, 30 from Dysart, 18 from Middlemount and 12 from Nebo), with 120 moving to the LGA from other regions, and 240 commuting.

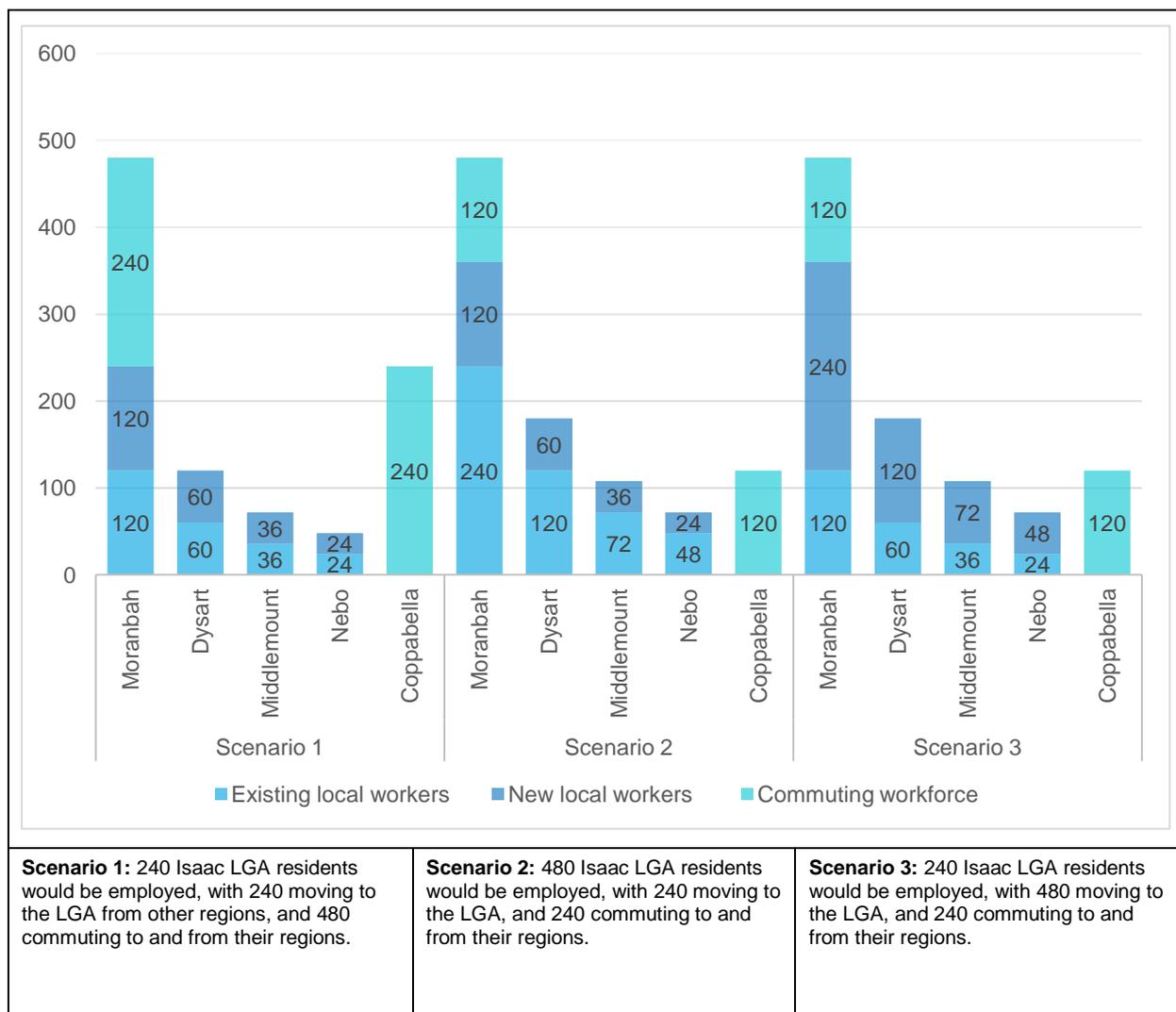
Scenario 2: 240 Isaac LGA residents would be employed (approximately 120 from Moranbah, 60 from Dysart, 36 from Middlemount and 24 from Nebo), with 120 moving into the LGA, and 120 commuting.

Scenario 3: 120 Isaac LGA residents would be employed as per Scenario 1, with approximately 240 moving to the LGA from other regions, and 120 commuting.

Potential local, new local and commuting workers - 2021

Figure 5-3 shows the potential number of existing, new local and commuting personnel in each town based on the three scenarios during 2021. As the number of Project jobs would double in 2021, the availability of employment across a range of occupations would increase the LGA’s number of mining jobs by up to 8.8% and lead to much greater choice for local workers.

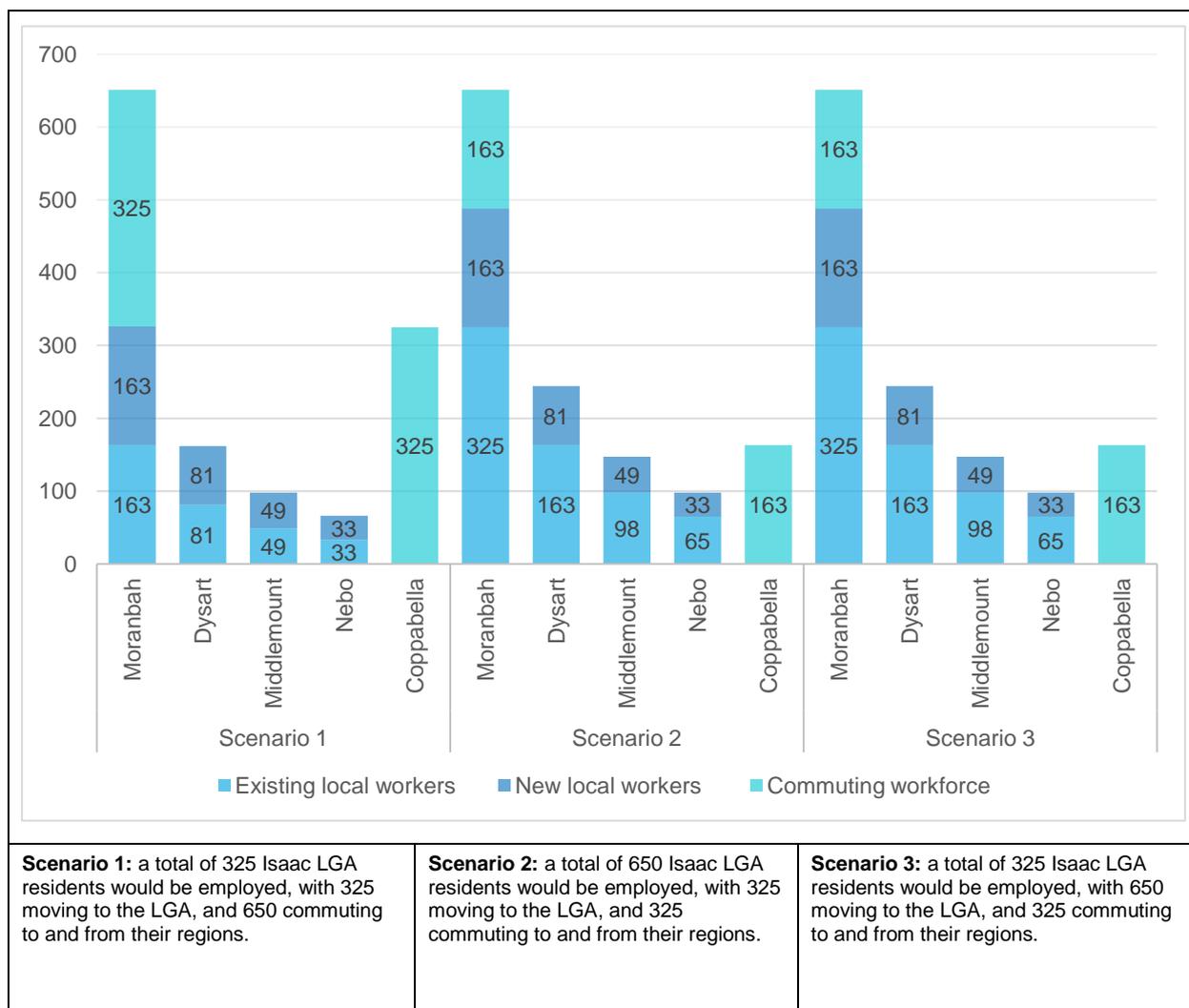
Figure 5-3: Local/Non Local Personnel Scenarios – 2021



At full capacity, potentially by 2033, 1,300 personnel would be required as shown in Figure 5-4. The feasibility of accessing up to 650 employees from the Isaac LGA is not yet known, as it depends on population growth (natural and Project-induced, as influenced by housing availability) and cumulative demands on Queensland’s labour force at the time. These factors will need to be monitored to ensure that impacts remain within the range of scenarios assessed.

The Project at full capacity would represent a very significant employment opportunity at local and regional levels.

Figure 5-4: Local/Non Local Personnel Scenarios - 2033



5.2.6 Employment availability

The Isaac and Mackay LGAs have experienced significant job losses and population outflows over the past five years. The modelled estimates in Table 5-2 show that if the Project is able to attract 25% of its personnel from the Isaac LGA during 2020, there would initially be 120 local people employed, and if this proportion was maintained 240 people local people (inclusive of the 2020 total) would be employed in 2021, with potential for 325 people in 2033.

If the Project is able to attract 50% of its personnel from the Isaac LGA, there would initially be 240 local people employed, rising to 480 people in 2021, and 650 people by 2033. This would be a significant positive benefit for Isaac LGA residents, offering ample jobs across diverse occupations, and a choice of local employment.

Assuming 25% of the workforce could be attracted from other areas to live locally, this would see an initial 120 'new local' employees, increasing to 240 in 2021, and 325 new local employees in 2033. With 50% new locals, these numbers would double to 240 new local workers in 2020 and 480 in 2021.

Outmigration of workers could be stemmed by the Project's employment opportunities and new workers attracted, so the Project is likely to have a positive effect on workforce participation rates, and population size in the Isaac LGA. This is discussed further in Section 5.3.

5.2.7 Income and employment security

Residents in the local area have significantly higher average incomes than the Queensland average due to the high percentages of mining employees and the high incomes they earn (see Section 4.5.1). In May 2017, the average weekly ordinary time earnings for Australian construction employees was \$1,555 per week, and for mining industry employees was \$2,551 per week, compared to the 'all industries' figure of \$1,544 per week, and \$1,098 per week for accommodation and food industry employees (the industry with the lowest average incomes)¹⁰⁴.

The Project would provide good incomes for an average of 600 construction industry employees for up to two years. At an average of \$1,555 per week (and assuming slow to no wage growth), this would be equivalent to average wages of more than \$80,000, and total wages of approximately \$48,519,000 per year.

For operational personnel, an average of \$2,551/week equates to wages of \$132,652 per year, or an approximate total of \$63,672,960 for the first year, and in accordance with growth and indexation thereafter.

The ability to earn above-average incomes over an extended period would be a significant benefit for contractors and employees, and particularly for young people, women and Indigenous people who experience inequity in employment access and income compared to white male workers.

5.2.8 Employment equity

Indigenous people

Pembroke's Indigenous Land Use Agreement (ILUA) with the BBAC includes a guarantee of intergenerational jobs for Barada Barna people, providing the foundation for their ongoing relationship with the Project for up to 75 years. A range of strategies to support sustainable employment options for Indigenous employees is being considered in cooperation with BBAC.

During the pre-construction phase, Pembroke will continue to engage with Barada Barna people as outlined in Section 6.4.5.

During the construction phase, Pembroke will focus on identifying Indigenous businesses in the Isaac, Mackay and adjacent LGAs, engaging Indigenous businesses in the construction supply chain, and ensuring that the Principal Contractor addresses Pembroke's commitments to Indigenous employment.

During the first two years of the operational phase the Project workforce is likely to reach approximately 960 people. The Project has agreed goals for employment of Indigenous people with the BBAC as follows:

- nine Indigenous employees during Years 1-10 of operations;

¹⁰⁴ ABS. 2017b.

- 14 Indigenous employees in Years 11-15; and
- 28 to 30 Indigenous employees from Year 16.

Subject to availability of Indigenous workers, these goals could be exceeded.

Almost one third of the LGA's Indigenous people had a post-school qualification in 2016, so both skilled and unskilled labour would be available, and there is potential to improve training outcomes and pathways through existing industry-government partnerships. However, only a proportion of people are interested in or available for direct employment in the mining industry. In particular long shifts and mining rosters can be difficult for workers with family responsibilities.

Building an appropriately skilled Indigenous workforce will be critical to increased equity for Indigenous people in the LGA. Achieving this goal will require cooperation with Barada Barna people, Indigenous employment agencies and other stakeholders who can assist in workforce development, along with specific training and support programs as outlined in Section 6.4.

In addition to increasing the incomes and financial security of Indigenous employees, families will benefit from access to greater disposable income, and Indigenous role models will create a greater culture of employment.

Women

Women are traditionally under-represented in the mining industry, as evidenced locally where despite very strong mining employment opportunities, they represent small proportions of the workforce. In 2016 there were 740 women working in coal mining jobs located in the Isaac LGA (13.3% of coal mining jobs). However, female participation in mining is increasing. QRC estimates that women currently represent 15.2% of Queensland's resources sector workforce and 12.5 % of 'non-traditional' roles¹⁰⁵, whilst BHP reported in 2015 that it had achieved 25% female employment at its Caval Ridge and Daunia Mines.¹⁰⁶

The Project anticipates that 20% female employment can be achieved upon commencement of operations, and will work towards this goal, which would see 96 women employed in 2020. By 2021, approximately 192 women would be employed in 2021, and by 2033, approximately 260 women would be employed.

Young people

Local young people (16-24 years) experience higher rates of unemployment than the general population. In the MIW region, youth unemployment in June 2017 was almost twice the general rate (see Section 4.7.9).

At June 2016, there were 62 young people in the Isaac LGA and 787 young people in the Mackay LGA who were receiving an unemployment benefit¹⁰⁷. This equated to 2.5% of the Isaac LGA's young people and 5.5% of Mackay's young people. These numbers do not equate to unemployment rates (as young people's eligibility for benefits is affected by family circumstances including income), but indicate a combined potential pool of unemployed young people of at least 849 people.

¹⁰⁵ QRC. 2017.

¹⁰⁶ BHP Billiton. 2015.

¹⁰⁷ Torrens University Public Health Information Development Unit. 2017.

Apprenticeships and traineeships are vital to ensuring local young people have opportunities to enter the mining workforce, building a skilled local labour force for the future, and keeping young people (and their families) in the Isaac region. As discussed in Section 6.4, Pembroke intends to offer apprenticeships, traineeships and mentoring to attract local young people to Project employment.

People with disability

Rates of disability in the Isaac LGA are low due the younger population and the lack of services for people with higher support needs. At the 2016 Census, there were 159 people aged 15 to 64 years in the Isaac LGA with a disability as defined by 'need for core assistance', and in June 2016, there were 205 disability support pensioners aged 15 - 64 years. Residents also include people with a level of disability which does not qualify them as needing core assistance or disability income support.

Employment agencies based in Mackay and Rockhampton, including those focussed on employment for people with disability, will be contacted during planning for operational recruitment to discuss employment opportunities and the availability of job seekers within the Isaac LGA who may be interested in Project employment.

5.3 Population

The following sections discuss potential population growth or demographic change as a result of the Project. The Project would draw labour and business supplies from the Isaac, Mackay and other regions, however a discernible change in population characteristics is only expected in the Isaac LGA.

5.3.1 Population increases

Construction

As described in Section 5.2, the nature of mine construction, labour availability and cumulative demands for heavy and civil construction labour mean that the majority of construction workers would be drawn from outside the Isaac LGA. On the assumption that 20% of construction workers could be drawn from within the LGA and 5% may move into the LGA from other regions during the first construction phase (2019-2020), 75% of construction personnel would commute to and from the area at roster changes. This would see:

- in towns (primarily Moranbah), potential for approximately 30 new local workers and family members, equivalent to up to 100 people; and
- an average of 450 non-resident workers over the two years, of whom approximately 75% (an approximate FTE of 340 workers) would be on shift at any one time.

This would be an additional average FTE population of approximately 440 people (100 temporary residents and 340 non-resident workers on shift at any one time). If the Isaac LGA population increases at the average annual rate of 1.09% between 2016 and 2021, the population in 2019 would be approximately 23,300 people. On this basis, the Olive Down South domain's construction would see a temporary population increase in the LGA of up to 2% during 2019-2020. For the second construction phase, the population increase - at approximately 225 FTE non resident workers, 20 new local workers and family members - would be in the order of 1.0 – 1.5% during 2027.

The number of non-local workers (i.e. an average of 340 non-resident workers on shift over the two years) will require consideration in planning for Council services such as water supply and waste management. The potential for Project demand which would exceed current and planned capacity of water and/or waste services and the need for mitigation measures to address any shortfalls in capacity will be discussed in engagement with IRC during the pre-construction phase.

Construction workforce demand for housing and health services is discussed in Sections 5.4 and 5.5. Potential for social change as a result of non-residential workers is discussed in Section 5.3.3.

Operations

The Project's intention is to recruit locally first, but in anticipation that not all employees will be found in local towns, Pembroke or its contractor will simultaneously recruit people from other regions who would like to live in local towns.

Table 5-3 uses the QGSO's low series projections to predict percentage increases. QGSO's 2015 forecast average annual growth rate for the Isaac LGA (1.09%) has been used to estimate population growth (without the Project) between 2020 and 2021. If the population does not attain the low series projection by 2021, the percentage increases attributable to the Project would be slightly higher.

Two scenarios have been considered in relation to population growth: (1) 25% of employees would move from other LGAs into local towns, and (2) 50% of employees would move into local towns. The percentages may be higher or lower depending on how many existing locals can be attracted from existing operations, employee preferences and housing availability, but the scenarios provide a guide for assessing and monitoring population change. Forecasts are provided for 2020 (when operations are expected to commence), 2021 (when the workforce is expected to double) and 2033 (when full production of 20 Mtpa could be reached).

In-migration of 'new local' workers and families would take some time, and is more likely to occur over a period of years, so the 50% scenario represents the likely upper limits of direct population increases.

The number of accompanying family members has been estimated at 1.7 people per new worker, reflecting the average household size (2.7) in the Isaac LGA in 2016.

The scenarios shown in Table 5-3 indicate that if 25% of the workforce moved to the Isaac LGA in 2020, the direct population increase attributable to the Project would be approximately 324 people, which would be equivalent to approximately 1.3% of the LGA's projected population in 2020. If 50% of personnel moved to the Isaac LGA by 2020, the population increase would be approximately 587 people or an increase of approximately 2.3% of the LGA's projected population. As noted above, in-migration of 'new local' workers and families would take time and is more likely to occur over a period of years, so this would represent an upper limit for 2020.

With the operational ramp-up in 2021, if 25% of all personnel had moved to the LGA, a population increase of almost 650 people could result (inclusive of the increase during 2021) representing a percentage increase of approximately 2.5%. As an upper limit, with 50% 'new local' workers by the end of 2021, there would be almost 1,296 new residents, equivalent to a percentage increase of around 5 %.

Table 5-3: Population increase scenarios for key Project phases

	Pop increase – Project scenarios	Estimated LGA Pop.	Increase on LGA	Indicative distribution of new residents			
2020	480	25,587		Moranbah	Dysart	Middlemount	Nebo
New local workers at 25%	120			60	30	18	12
Family members at 1.7/worker at 25%	204			102	51	31	20
Total pop increase at 25% new local	324		1.27%	162	81	49	32
New local workers at 50%	240			120	60	36	24
Family members at 1.7/worker at 50%	347			173	87	52	35
Total pop increase at 50% new local	587		2.29%	293	147	88	59
2021	960	25,785					
New local workers at 25%	240			120	60	36	24
Family members at 1.7/worker at 25%	408			204	102	61	41
Total pop increase at 25% new local	648		2.51%	324	162	97	65
New local workers at 50%	480			240	120	72	48
Family members at 1.7/worker at 50%	816			408	204	122	82
Total pop increase at 50% new local	1,296		5.03%	648	324	194	130
2033	1,300	29,285					
New local workers at 25%	325			163	81	49	33
Family members at 1.7/worker at 25%	553			276	138	83	55
Total pop increase at 25% new local	878		3.00%	439	219	132	88
New local workers at 50%	650			325	163	98	65
Family members at 1.7/worker at 50%	1,105			618	309	185	124
Total pop increase at 50% new locals	1,755		6.20%	878	439	263	176

In summary:

- the Project's first year of operations is likely to result in a direct population increase of up to 324 people in the LGA, however an increase of up to 587 people is possible; and
- the second year of operations is likely to see further population increases, so a population increase of up to 648 people (an increase of 2.5%) may occur by the end of 2021, but may be constrained by housing availability (see Section 5.4) so a population increase of approximately 5% should be considered as an upper limit for 2021.

The Project will also generate indirect employment and therefore population growth, in step with Project expenditure, percentages of new local workers, and housing availability, as discussed in the Olive Downs Project Economic Assessment (Gillespie Economics, 2018).

As noted in Section 5.2.5, Moranbah is assumed to attract around 50% of the new residents, with 25% settling in Dysart, 15% in Middlemount and 10% in Nebo. Indicative numbers of new residents in each town are shown in Table 5-3 based on these proportions.

In 2033, with a workforce of 1,300 people, 25% new local workers would see a population increase of approximately 878 people or 3.1% (based on apportionment of the 2031 low series population projections). With 50% local employment, the population increase would approach 1,755 people, equivalent to an increase in the Isaac LGA's population of 6.2%. A lack of certainty in population growth rates, housing availability and labour force capacity means that predictions as to population increases from 2033 are not possible. A monitoring framework to identify and manage potential population increases is provided in Section 6.8

5.3.2 Effects on demographic characteristics

In 2016, approximately 54.5% of Isaac LGA's 22,588 ERP were male. The small number of construction workers who would settle in towns either temporarily or permanently would not make a perceptible difference to the gender balance, particularly as some would be accompanied by female partners. However, anticipating that the Isaac LGA population may reach approximately 22,000 people in 2020, and 54.5% of the projected population will be male (approximately 12,000 people), a FTE of 340 non-local workers on shift (assumed as 90% male) would see an increase of 306 men in the LGA, equivalent to an increase in the male population of around 2.5%. A smaller increase in the male population would be expected during the second construction phase.

Operations may see a very small increase in the percentage of males as a result of non-local workers staying locally, however the Project aims to employ a 20% female workforce (as a minimum), and most 'new local' employees would bring families with them.

In 2016, 48.6% usually resided in a different address five years ago (compared to 44.1% in Queensland).¹⁰⁸ The Project is likely to have a positive impact on population stability, by:

- increasing local job opportunities which will keep people in the LGA;
- attracting new workers and their families who will become long term residents; and
- offering employment opportunities over a thirty-year period.

¹⁰⁸ ABS. 2016c. Census of Population and Housing. Time Series Profile.

Greater population stability generally leads to higher social capital, as long term bonds and investment in communities encourages people to work together.

5.3.3 Potential for social change due to non-local workers

As noted in Section 5.3.1, there could be approximately 340 FTE non-local workers in the LGA during the first construction period, accommodated in Moranbah, Coppabella or both, and approximately 225 FTE non-local workers in the LGA during the second construction period.

Non-local operational workers will be accommodated in WAVs in Moranbah and/or Coppabella. With 25% of personnel commuting, 2020 would see 120 personnel staying in WAVs and at 50%, 240 people, with these numbers potentially doubling in 2021.

At 120 non-resident personnel, this would be an increase in the LGA's projected non-resident worker population in 2020 (approximately 10,820 people based on QGSO's Series B projections) of 1.1%, and at 480 non-resident personnel, an increase of 4.4%. In the context of a population of some 23,000 people, and given they would spend most of their time at work or in the WAVs, this is not likely to 'disrupt the balance' between local and non-local people, or effect any specific changes in local dynamics.

The four Moranbah WAVs are located in or on the edge of town within easy walking distance of all amenities. This will enable personnel to visit the town centre and its entertainment venues. Discussion of workforce conduct and local values is provided in Section 5.6.5.

For non-local operations personnel who may stay locally for long term, it will be important to identify local opportunities to participate in sports, social activities and community events. This is discussed in Section 6.4 and 6.6. WAVs are largely self-contained with respect to basic daily needs, however non-resident workers contribute to the Isaac LGA's total population and to demands on services, as discussed in Section 5.5.

The Civeo WAV at Coppabella is located directly across Peak Downs Highway from the township, however there is negligible interaction between the township and the WAV residents, so the primary impact on Coppabella relates to the high volumes of traffic flowing in and out of the WAV at shift change times. The Terowie WAV is located between Coppabella and the Moorvale Coal Mine, and accessed via an unnamed road from the Peak Downs Highway. This WAV is more remote from Coppabella, but also contributes traffic to the Peak Downs Highway between Moranbah and Coppabella. Traffic volumes and traffic safety on the Peak Downs Highway are ongoing challenges, however WAV resident numbers fluctuate. Potential impacts on traffic safety on the Peak Downs Highway are described in the Road Transport Assessment prepared for the Project EIS (GTA Consultants, 2018).

5.4 Housing and accommodation

A range of negative social impacts result when housing demand outstrips supply, including financial stress, overcrowding, housing insecurity, displacement from housing and loss of key workers.

Housing supply in the four towns (excluding Coppabella) was described in Section 4.4. Recent listings for rental dwellings indicate that there were 158 rental dwellings and 142 dwellings for purchase available in October 2017, as summarised in Table 5-4. There is however significant unlisted capacity as discussed below.

A summary of more recent changes in housing availability was provided in Section 4.4.4. These data and the analyses of workforce demand will be updated as part of the Project’s housing analysis and strategy development in the pre-construction phase.

5.4.1 Impacts during construction

During construction of the Olive Downs South domain, non-resident workers would be accommodated in WAVs in Moranbah or Coppabella. On the assumptions that 5% of the construction workforce average (30 people) may move to local towns for the first construction period, with some bringing families and some as single workers share dwellings, this would see demand for 20 to 30 rental dwellings during 2019-2020.

Table 5-4: Listed dwellings October 2017

Community	Rental			Purchase		
	Houses	Units	Total	Houses	Units	Total
Moranbah	82	11	93	69	9	78
Dysart	37	2	39	26	4	30
Middlemount	10	4	14	6	5	11
Nebo	12	0	12	21	2	23
Total	141	17	158	122	20	142

Construction workers are most likely to settle in Moranbah given the range of housing choices and proximity to the Olive Downs South domain. Compared to the 93 rental dwellings available in Moranbah in July 2018, this would represent 25 - 30% of available stock. As Moranbah’s rental vacancy rate is currently less than 3%, if there had been no increase in rental stock, this level of demand could cause a small increase in rental prices.

Offsetting this, with 1,069 unoccupied private dwellings in of Moranbah and 574 in Dysart in 2016, it is likely that houses which are currently vacant for lack of adequate rental returns will come back to the market and mitigate the potential impact on rental costs as further discussed below.

By 2027 during the second construction period, up to 20 dwellings may be required. Previous stimulation from the Olive Downs and other projects is likely to have increased rental housing capacity, so that any demands for local housing will be easily met, however cumulative demands can’t be predicted. The Project will monitor the availability of housing in all local towns, and discourage non-local construction workers from using local rental housing.

5.4.2 Impacts of operations

The following analysis of housing impacts is based on the same assumptions as for population growth, that is:

- new local workers would comprise 25-50% of Project personnel; and
- 50% of new locals would settle in Moranbah, with 25% settling in Dysart, 15% in Middlemount and 10% in Nebo.

In reality, people's choice of town will be influenced by housing availability, housing cost, distance to work and suitability to their needs, but the scenarios outlined in Table 5-5 provide an indication of the range of potential impacts. As noted in Section 5.3.1, population increases (and therefore housing demands) are likely to be highest during the first two years with further gradual increases in subsequent years.

People intending to live in local towns for the long term are more likely to purchase dwellings, whilst others who are moving in for a set term or want to 'try before they buy' will rent houses or units. Based on current conditions, with local housing prices at a ten-year low, housing purchase is expected to be attractive as well as affordable to people on mining wages.

It has been assumed that 50% of new local workers will purchase homes and 50% will rent, however some variation around these percentages is likely.

Table 5-5 provides estimates of the range of potential housing demands which could result in 2020-2021 (rounded to the nearest whole number) in comparison to stock as available at October 2017. The results indicate that if 25% of the Project personnel settle locally from outside the LGA in 2020:

- housing purchase requirements may be equivalent to approximately 35% of Moranbah listed dwellings for sale (at October 2017), 45% of Dysart's stock, 74% of Middlemount's stock and 23.5% of Nebo's stock; and
- rental housing requirements may be equivalent to approximately 29% of Moranbah's currently listed rental dwellings, 35% of Dysart's rental dwellings, and 58% of Middlemount's and 49% of Nebo's stock.

This level of demand is likely to increase rental prices. Against a background of current low rental prices (for houses, median rents of \$160/week in Dysart, \$245/week in Middlemount, \$250/week in Nebo and \$270/week in Moranbah), rental costs would still be affordable for most households, however low income households' housing choices and security reduce as prices rise. It's unlikely that 50% of personnel would migrate to local towns by 2021, but if this occurred, significant price inflation and displacement of low income households would result.

In 2021, personnel numbers would double, and if 25% of new locals were maintained, this would require more than 58% of currently available rental stock in Moranbah and more than 69% in Dysart, whilst allocating 15% of the total demand to Middlemount and 10% of demand to Nebo would exceed their current rental availability. This level of demand would lead to substantial rent increases and impacts on affordability, with the potential for displacement of low income households (typically key workers, unemployed or under-employed people and older people).

The number of people moving into town would be constrained by housing availability. There is by no means a glut of dwellings currently listed as available for rental or sale in the local towns.

However, Census data suggest there were 2,173 unoccupied private dwellings between the four towns in 2016, which was equivalent to 35% of their combined housing stock. Overall, the percentage of unoccupied dwellings in the Isaac LGA increased from 24% in 2011 to 34.5% in 2016. The proportions of 'other landlords' recorded in the Census indicate that the majority of unoccupied dwellings are owned by mining companies, however private investors bought up stock during the 2011-2012 boom which is yet to return to the market. Locals in all towns confirm that there are vacant dwellings 'in most streets' owned by mining companies and investors.

Table 5-5: Potential housing demand scenarios

Personnel/Housing demand	2020				2021			
	Moranbah	Dysart	M'mount	Nebo	Moranbah	Dysart	M'mount	Nebo
New locals at 25% of workforce (2020 = n=120, 2012 =n= 240)	60	30	18	12	120	60	36	24
Dwellings required for families (80% of new locals)	48	24	14	10	96	48	29	19
Dwellings required for singles (20% of new locals, 2 / dwelling)	6	3	2	1.2	12	6	4	2
Dwellings required at 25% new locals	54	27	16	11	108	54	32	22
Purchase demand at 50% of dwellings required	27	13	8	5	54	27	16	11
Dwellings listed for purchase at Oct 2017	78	30	11	23	78	30	11	23
Purchase demand / listed stock at 25% new locals	34.6%	45.0%	73.6%	23.5%	69.2%	90.0%	147.3%	47.0%
Rental demand at 50% of dwellings required	27	13.	8	5	54	27	16	11
Dwellings listed for rent at Oct 2017	93	39	14	11	93	39	14	11
Rental demand / listed stock at 25% new locals	29.0%	34.6%	57.9%	49.1%	58.1%	69.2%	115.7%	98.2%
New locals at 50% of workforce (2020 =n= 240, 2021 n= 480)	120	60	36	24	240	120	72	48
Dwellings required for families (80% of new locals)	96	48	28	19	192	96	58	38
Dwellings required for singles (20% of new locals, 2 / dwelling)	12	6	3.6	2.4	24	12	7.2	5
Dwellings required at 50% new locals	108	54	32	22	216	108	65	43
Dwellings listed for purchase at Oct 2017*	78	30	11	23	78	30.0	11.0	23.0
Purchase demand at 50% of dwellings required	54	27	16	11	108	54	32	22
Purchase demand / listed stock at 50% new locals	69.2%	90.0%	147.3%	47.0%	138.5%	180.0%	294.5%	93.9%
Dwellings listed for rent at Oct 2017	93.0	39.0	14.0	11.0	93.0	39.0	14.0	11.0
Rental demand at 50% of dwellings required	54.0	27.0	16.2	10.8	108.0	54.0	32.4	21.6
Rental demand / listed stock at 50% new locals	58.1%	69.2%	115.7%	98.2%	116.1%	138.5%	231.4%	196.4%

Pembroke has committed to developing a housing strategy for its personnel, in consultation with IRC. This will include an updated assessment of housing availability in Moranbah, Dysart, Middlemount and Nebo, and consideration of strategies which would support increased housing availability in each of the four towns.

Increases in demand (and financial returns) will bring some of these unoccupied properties to the market, replenishing the rental housing pool as well as the stock for purchase. If just 10% of the vacant dwellings were made available to the rental market, an additional 217 dwellings would be available, more than doubling the current (October 2017) listed rental pool in the four towns. This would offset the Project's potential housing impacts and mitigate increases in rents, but will require provision of accurate information about workforce ramp-up, the labour force profile and housing preferences to dwelling owners, to provide confidence in the Project's labour force as potential tenants and purchasers. This is discussed in Section 6.5.

A further option to expand the housing pool exists in Bushlark Grove, Economic Development Queensland 's (EDQ) residential estate in Moranbah. At October 2017, there were 57 lots (either house and land or land only) of the original 75 lots in Stage 1 listed as available¹⁰⁹. When developed, Stage 2 will have a similar yield, and with both at full development (and sale), up to 100 lots (some with housing already constructed) could be available.

Whilst little to no other residential land is currently advertised for sale in the local towns, there are scattered vacant blocks (and others where the dwellings could be removed) which represent additional stocks which would become available as prices rise. Again, liaison with EDQ and IRC will be required ahead of time to ensure housing is available for in-migrating workers and families.

Housing purchase in the four towns is currently very affordable for local young people and others on lower incomes, which has led to an increase in their housing security over the past four years. Project personnel's potential demand for housing purchase may increase housing purchase prices over time This would be experienced as a negative impact for local people who wish to enter the housing market.

Consultation participants noted that there were local couples (mostly older) and families who wished to leave for a variety of reasons, but were held back by large mortgages on houses bought around the 2010-2012 boom. An increase in housing values and rental returns may have the positive impact of releasing these residents and adding their dwellings to the housing pool, however there are no estimates of how many dwellings this would entail. There are also multiple investors (local and far afield) for whom an increase in housing prices will relieve some of the financial pain which resulted when housing prices fell.

¹⁰⁹ Economic Development Queensland. 2017.

When the Project develops to its full potential of 20 Mtpa (anticipated in 2033), the workforce is expected to increase from 960 people to 1,300 people (an increase of 35%). Labour force and housing capacity for 2033 cannot be determined with any certainty at this point, so an estimate of the potential housing impacts of operation at 20 Mtpa has not been attempted. The capacity of the local labour force and housing stocks to accommodate an increase in locally-based Project workers will need to be assessed prior to further development (i.e. in 2031-2), and will influence the revision of SIMP (as outlined in Section 6) as well the recruitment strategy for new personnel. Actions for monitoring labour force and housing capacity are provided in Section 6.8.

5.4.3 Housing for existing local workers

As a first priority, the Project will recruit from within the local towns and the remainder of the Isaac LGA, however large percentages of existing workers are accommodated in housing owned by mining companies. Whilst some prospective Project personnel would be the partners or children of lead tenants in mining-owned housing stock, some families would lose their housing entitlement in transferring to the Project and require other housing.

This underscores the need for an increase in local housing stocks (including use of existing unoccupied stocks) to ensure existing local workers are not constrained from applying for Project employment.

Project assistance to employees seeking new local housing arrangements is outlined in Section 6.5.

5.4.4 Workforce accommodation

WAV capacity is not fixed: capacity in the Bowen Basin tripled from 10,790 beds in 2006 to 32,495 beds in 2013, but fell to approximately 18,510 beds in 2017¹¹⁰.

As discussed in Section 4.4.8, the number of potentially available WAV beds in the Coppabella, Moranbah and Dysart areas includes:

- in Coppabella, 3,048 existing beds and a potential total capacity of 4,616 beds;
- in Dysart, 2,028 existing beds and a potential total capacity of 2,342 beds;
- in Moranbah, 3,960 existing beds and a potential total capacity of 11,450 beds.

On this basis, the project anticipates it will have access to sufficient WAV capacity to meet the needs of the construction and operations phases.

The Queensland Government's non-resident worker accommodation guideline¹¹¹ has two key principles:

- non-resident worker accommodation is located and designed to be integrated within or on the edge of the town; and
- non-resident worker accommodation adequately provides for occupants and has a high level of on-site amenity.

¹¹⁰ QGSO. 2018c.

¹¹¹ Queensland Department of Infrastructure, Local Government and Planning. 2015b

Larger, more remote WAVs in the Bowen Basin (such as at Coppabella) tend to have a higher level of amenity (e.g. more menu choices, gyms, wet messes, barbecue areas and walking tracks), whereas personnel staying in WAVs in Moranbah will have access to the range of sporting, health, entertainment, and retail facilities available there.

Pembroke will select WAVs based on criteria designed to ensure that non-local personnel have access to quality accommodation and services which support their health and wellbeing, as outlined in Section 6.6.

5.5 Social infrastructure

5.5.1 Construction

On the basis of the assumptions outlined in Section 5.3.1, Project construction would see a temporary population increase in the Isaac LGA of up to 2% during 2019-2020. This includes approximately 30 temporary residents, some of whom would bring families for a total temporary resident population of approximately 80 people, and an average FTE of 340 non-resident workers staying in WAVs. During the second construction period, approximately 20 temporary workers and their families (for a total of approximately 50 people) may be staying in the LGA, as well as approximately 225 FTE non-resident workers staying in WAVs.

As the closest town to the WAVs and an attractive town for temporary residency, Moranbah is expected to experience the majority of construction personnel's needs for social infrastructure. The primary demands would be for health services and emergency services, with a small incremental demand for settlement services and schools, as discussed below.

Health services

As outlined in Section 5.3.1, if 5% of construction personnel settle locally during the first construction period, an estimated 100 new temporary residents may result. Most of these are assumed to settle in Moranbah, which has an adequate level of health service provision to absorb this level of demand and is closer to the Olive Downs South domain (which will proceed first).

Whilst they will access their primary health care at home, non-residential workers will make regular demands on local GPs and the Moranbah Hospital, most commonly for minor illnesses, injuries and prescription renewals. At an average of approximately 440 FTE people over the two years, this may be experienced as an appreciable (if temporary) increase in demand for services.

Local health services are accustomed to fluctuating patient numbers due to mining industry cycles, but are challenged by unexpected spikes in demand. In particular, non-resident workers who are not well prepared (e.g. attending to health issues before shifts and bringing prescriptions with them) tax the Hospital's services. The Hospital does however have sufficient bed capacity to care for non-resident workers if the need arises.

Strategies of reducing the impact of non-residential workers on local health services are outlined in Section 6.6.

Emergency services

The increase in traffic and FTE population due to Project construction will increase demands on local Police, Fire, SES and Ambulance services, commensurate with the temporary population increase, i.e. an average of approximately 440 FTE residents during 2019-2020. Increased demand is likely to primarily affect services based in Moranbah, given non-resident workers would be accommodated there or near Coppabella, but traffic accidents and patient transport from the Project site to health facilities may also involve Police and emergency services officers from other local towns. Patient transport in particular is time-consuming for Ambulance and Hospital staff. Dependent on the quality of radio network coverage at and near the Project site, QAS may also need to add a repeater to existing radio towers.

As noted by IRC during SIA consultation, there is a responsibility to provide an adequate level of health and emergency service provision for all community members, whether temporary or permanent, however Government service planning does not seem to account for non-resident numbers. Pembroke will ensure that local and district police and emergency services officers are aware of the Project's workforce ramp-up, and will support advocacy by IRC to the Queensland Government with respect to adequate police and emergency services capacity in local towns.

Demands on Police services will also result from the Project's need for over-sized vehicle escorts, however QPS manages this by allocating escort duties to off-duty police officers. Again, local Police and emergency services are accustomed to fluctuating demands due to mining industry cycles, but are challenged by spikes in demand. Proposed strategies to mitigate impacts on emergency services such as the QFRS, QPS and QAS will be founded on relationships and regular communication, as outlined in Section 6.6.

School enrolments

Moranbah schools had a total of 1,697 enrolments in February 2017, but have had up to 1,857 students during the past five years. The maximum demand for school enrolments resulting from construction workers settling in Moranbah would be in the order of 30 students, which would be well within the capacity of Moranbah's two state schools and one high school. Schools in Dysart, Middlemount and Nebo also have capacity to accommodate a share of new enrolments.

Children from transient families typically represent a higher workload for schools, due to the need for time and support to help them adjust and integrate into the school community. Advance notice of the number and age of children seeking enrolments, if possible, assists schools to plan their resources, and this is addressed in Section 6.6.

5.5.2 Operations

On the basis of the scenarios outlined in Section 5.3.1, the Project is likely to result in a direct population increase in the Isaac LGA of approximately 324 people (or 1.3% increase) in 2020 but this could range up to 587 people (2.3%).

Non-residential workers would also make demands on some social infrastructure. As previously described, if 50% of personnel in the first year of operations were non-residential, this would see 240 people (at 0.75, a FTE of 168 people) in the Isaac LGA during 2021. Combined, the new local and non-resident workers FTE (492 people, assuming at 25% new locals) local would represent an increase in population of approximately 1.9 % in 2020.

An increase between 648 and 1,296 people (as an upper limit) could result during 2021 (a maximum increase of approximately 5%). With 25% non-residential personnel, there would be an additional 168 FTE non-resident or a total FTE population increase of 1,464 people (maximum increase of 5.7%).

These upper limits have been used to forecast the potential for impacts on social infrastructure as outlined below.

Further population increases are likely as a result of the Project proceeding to full production around 2033, and a monitoring framework has been provided in respect to this potential (see Section 6.8).

Education

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.

This indicates, as shown in Table 5-6, that a population increase of 324 people (e.g. with 25% new local employees in 2020) could include approximately 98 children, of whom 31 would be less than 5 years, 51 would be aged 5 – 14 years, and 16 would be aged 15 – 19 years. Proportionate increases in the number of children and young people would result with higher Project-induced population increases, and a population increase of up to 1,300 people could include almost 400 children and young people.

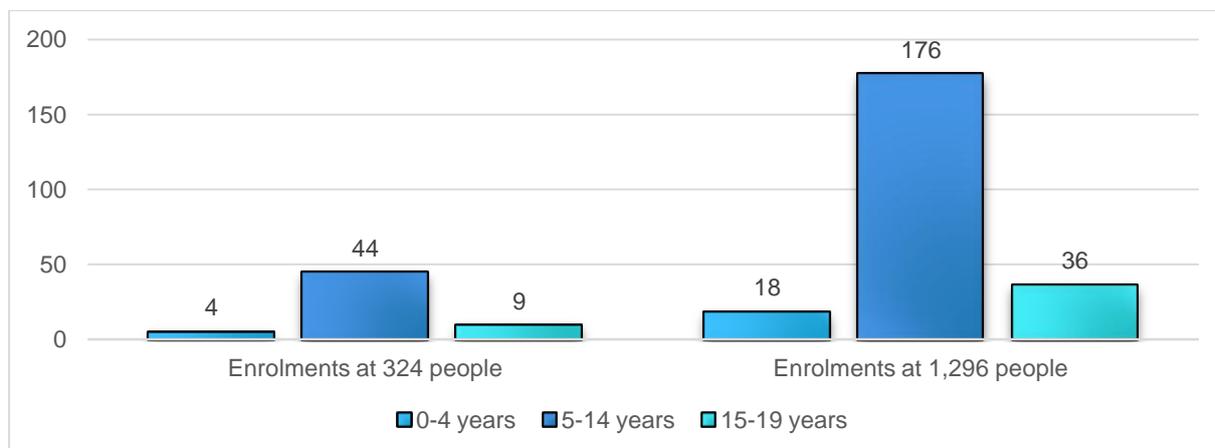
Table 5-6: Project induced increase in no. of children and young people

Age group	Isaac LGA ERP 2016	Age group % of ERP	% of group in education	Project increase – 0 – 19 years and enrolments			
				@ 324 people	Enrolments	@ 1,296 people	Enrolments
0-4 years	2,034	9.71%	14.2%	31	4	126	18
5-14 years	3,270	15.62%	87.0%	51	44	202	176
15-19 years	1,020	4.87%	56.7%	16	9	63	36
Total	6,324	30.20%		98	57	391	230

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 Figure 5-5, and indicate that with a population increase of 324 people, there would be a demand for approximately four prep enrolments, 44 Year 1-10 enrolments, and a maximum of nine 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.

Figure 5-5: Estimated enrolments – project induced population increases



As discussed in previous sections, approximately half of the population increase is expected to accrue in Moranbah, which may see a requirement for up to two prep students, 22 students aged 5-14 years and a maximum of five seniors (15-19 years) enrolments. During 2013-2017, Moranbah schools experienced an average annual increase of 1% in enrolments, but there were 70 less total enrolments in Moranbah in 2017 than in the peak year 2016, indicating that there is some current capacity to accommodate extra enrolments.

Dysart, if it received 25% of the population increase, would see demand for approximately 15 enrolments, Middlemount at 15% would see the need for approximately eight enrolments, and Nebo six enrolments.

With currently 18 less enrolments in Dysart than the peak year (2014) and 114 less enrolments in Middlemount than the peak year (2013), both schools are likely to have the capacity to absorb Project demands. There were 73 enrolments in Nebo in 2017, which was the highest number for five years, however a demand in the order of six enrolments is unlikely to exceed capacity.

With a population increase of up to 1,296 people, a total of 230 enrolments could be required, which at 50% would see up to 115 additional enrolments, again not all in Isaac LGA schools, but with a large proportion of students in the 5- 15 years cohort expected. This number is likely to take some years to build, but if sudden and unexpected, could challenge current capacity.

The Department of Education’s school planning process ensures that public school enrolments are available for all who need them. However, advance notice of a potential population influx is the key to ensuring less stress on schools.

Council 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. For example, in-migration of 1,000 Project-related personnel and family members distributed across the four towns would be an increase of approximately 5% on the current LGA population 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 non-resident workers, but of a lesser order of magnitude given they will access most services from their home communities and/or in the WAVs.

Waste management facilities in the Isaac region have limited capacity, and are a high priority for IRC. The Project's waste management strategies are provided in Section 4.14 of the Main Text of the EIS. Waste management will also be a regular topic for Pembroke's discussion with IRC as the Project is developed, commencing in the pre-approval phase.

Pembroke has commenced consultation with IRC regarding the predicted extent of pavement impacts and traffic network performance on Council roads. This will include discussion on any need for upgrades to Council roads, and refinement of the Project's transport management measures.

Doctors and Dentists

Moranbah currently has an adequate supply of GPs to population in comparison to benchmarks (see Section 4.9.5) and locals report that they can generally get an appointment when they need one. The level of GP provision in other centres is low in comparison to the population (Nebo has a modern clinic with a doctor one day/week, Dysart has one FTE GP and Middlemount has a visiting GP service), so Moranbah doctors also service a wider regional population.

New residents would increase demand for GPs and a range of community health services. Queensland Health's Mackay Hospital and Health Service Rural Services advise that a benchmark of one GP to 600 people is appropriate in the local context. If the maximum anticipated population increase occurred in 2020 (587 people) this would be equivalent to demand for an additional GP in the Isaac LGA. A large proportion of new households are likely to be young families who typically have more frequent needs for these services, so the demand increase may be higher than the population increase.

Non-resident workers would make a small additional demand on GPs services, with less equivalence to their numbers as most routine health services would be accessed at home, but appointments may be required for illnesses and injuries.

As businesses, GP clinics can expand with 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. Locals have identified a decline in visiting specialist services as the population decreased during 2012-2015. Increased demand for specialist services is also likely, and could impact on appointment times until demand thresholds are reached for more frequent or longer specialist visits to local towns.

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.

Hospitals and health services

Moranbah Hospital (with 12 beds) and Dysart (nine beds) provide in-patient, out-patient and community health services in the Isaac LGA, along with the Clermont Hospital (which has 16 beds, some of whom are used by seniors with high care needs). Hospitals are nurse-led, with medical services provided by local doctors on call or as arranged. Both local hospitals generally have low bed occupancy and are likely to have the capacity to meet the need for in-patient beds that would be required for Project-induced population increases, however births are not accommodated at either hospital, and higher order health issues and serious injuries are referred to major regional hospitals.

A range of community health services are provided by Queensland Health and community organisations (see Section 4.9.6), who noted increasing demands for primary health care in recent years. Mental health is a common priority with local services identifying increasing demand for services and support.

Both Queensland Health services and community organisations (such as outreach services promoting youth mental health) are likely to experience incremental increases in demand for services due to population increases resulting from the Project.

As the population grows a commensurate increase in health service provision will be required. Supply often lags behind demand for health services, so some stress on services could result if population increases occur without commensurate increases in services. On the Mackay Health and Hospital Service's advice, population-based funding allocations for Queensland Health are not informed by non-resident worker numbers (as calculated annually by QGSO) and as a result, influxes of non-local personnel strain the capacity of health and hospital services.

Pembroke will ensure that the Mackay Health and Hospital Service is made aware of the likely workforce ramp up including numbers of residential and non-residential personal, and maintain regular communication with the Moranbah and Dysart Hospitals to monitor demands by Project personnel on health and hospital services.

Non-resident workers typically make significant demands on hospital out-patient services and administrative services, anticipating a doctor will be available. Whilst some need for hospital services is inevitable, non-resident workers demands on health services can be reduced through appropriate management as detailed in Section 6.6.

Child care

Moranbah, Dysart and Middlemount each have child care centres with a limited number of current vacancies, however there is no formal childcare service in Nebo, and residents resort to a service in Valkyrie (30 minutes' drive away).

With a population increase of 324 people, new residents may include approximately 31 children 0-4 years, 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 care¹¹². 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. This is likely to be within the current capacity of local childcare centres and the family day care scheme.

At the upper limit with approximately 1,298 new residents (and approximately 126 people 0-4 years), up to 21 long day care places would be required. This may strain current capacity in Moranbah, Dysart and Middlemount, and may lead to increased unsatisfied demand in Nebo. Through consultation with the IRC, Pembroke will monitor the availability of childcare places in each of the four towns during the first five years of operation. If consultation with IRC and childcare providers indicates that Project demand exceeds capacity, Pembroke would liaise with local childcare providers, the Department of Communities Child Safety and Disability and IRC to identify potential responses.

With respect to out of school hours care, 326 new residents could see 44 new children between 5 and 14 years and if 7.8% of them required care, three to four extra places would be required across the LGA, which is likely to be within current capacity. At 1,298 new residents, demand for up to 14 out of school hours care places could result, however an increase of this order would take time to build and service capacity is likely to expand with incremental demand over time.

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. In the event that the cumulative demands overwhelm childcare capacity, collaborative consideration of options to meet demands will be required, involving employers, IRC and DCCSDS.

Key issues which constrain workforce participation, especially for women, is that there is no overnight child care available in the LGA, 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 such as overnight family day care arrangements. The Project's employment policy will also allow parents to take 'sick days' to care for children when they are sick and unable to attend childcare.

Community services and facilities

Project-induced population increases will result in increased demand for community and support services, roughly proportionate to the relevant percentage increases. Settlement and neighbourhood programs run by Moranbah District Support Services (MDSS) and the Dysart Community Support Group (DCSG) are likely to experience increased demand as new local families move in for Project employment. These particular services are important to supporting new residents and ensuring that employees and families are happy in their new communities. The Project intends to support these two services to ensure settlement and neighbourhood programs are available to Project employees and families (see Section 6.6.6).

A range of other programs and services are likely to experience increased demand as a result of the project, including:

- youth support and participation programs;
- family and domestic violence services;
- disability support and integration programs;
- playgroups; and
- youth, community and sporting organisations.

Of their own, Project-induced demands on community services are unlikely to significantly stress their capacity, however if in the context of cumulative population growth, service capacity may fall behind demand. The Project will consult with the MDSS and DCSG or the current provider(s) of services identified above to identify how it might contribute to development of enhanced community service capacity.

Maintenance of sufficient volunteer resources for management committees and community events is a key challenge for local organisations. The increase in population attributable to the Project will introduce additional resources who could contribute through volunteerism. The Project will also ensure that staff are encouraged to volunteer their services to community projects and organisations.

Police and emergency services

As noted for the construction phase, the increase in traffic and population due to the Project will increase demands on Police for traffic policing, occasional demands for over-sized vehicle escorts and administrative issues. A small increase in demand for community policing to respond to residential population increases is also likely. Police consulted as part of the SIA said that demands for their services to attend on WAVs were very low, given behavioural protocols in place for mining workforces.

Fire and emergency services and ambulance services are also likely to experience incremental increases in demand commensurate with the population increases in local towns. Demands on ambulance (and often fire services) would also be experienced in relation to traffic accidents, work place accidents and non-resident personnel emergencies.

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. The Project will develop emergency response arrangements with providers for onsite and offsite incidents relating to its workforce.

Prior advice on the Project's workforce ramp up will also be provided to Police and emergency services to assist them in planning for adequate service capacity, as outlined in Section 6.6. Local fire services have experienced decreasing volunteer resources in recent years, and the Project's support for volunteer services is also considered in Section 6.6.

Access to physical infrastructure and utilities

The Project will require access to water supplies for construction and operation. Pembroke is in the process of negotiating an agreement with SunWater for provision of water supply from the existing Eungella pipeline to the Project area. Relevant approvals associated with these works are being sought through this EIS process. As previously noted, mining companies hold water allocations for Moranbah, Dysart and Middlemount, and IRC relies on agreements with industry for town water allocations. Pembroke will discuss the towns water security with IRC during the pre-construction phase.

Pembroke is also negotiating with Energy Queensland for the supply of electricity to the Project via an ETL which would connect to the existing Broadlea Substation.

A detailed assessment of road infrastructure use is provided in the EIS Traffic Assessment.

5.6 Community health and safety

This section discusses the potential for impacts and benefits in relation to community well being and safety.

5.6.1 Air quality and noise

As noted in Section 3.3.3, community members in Moranbah indicated that dust (attributed to a nearby mine) is affecting amenity and causing concerns about health.

There is a general consensus among researchers that particulate matter with a diameter $<2.5\mu\text{m}$ (PM_{2.5}) is likely to be more hazardous to human health because whilst most particles with a diameter $>10\mu\text{m}$ are generally filtered by the nose and throat, finer particles are able to penetrate further into the lungs¹¹³. The CSIRO's submission to the Senate Inquiry into the impacts on health of air quality in Australia stated that: "epidemiological studies have concluded that there is a statistically significant relationship between fine particles and human health effects, such as decreased lung function, increased respiratory symptoms, increased cardiovascular and cardiopulmonary disease, and increased mortality. Recent research has identified a strong link between PM_{2.5} and life expectancy"¹¹⁴. The Senate Inquiry report notes that on-road motor vehicles and off-road engines such as generators, mining and coal combustion, earthmoving equipment and ships have been identified as the major sources of particulate pollution in Australia.

¹¹³ Commonwealth of Australia. 2013. The Senate Community Affairs Committee Secretariat Inquiry into the Impacts on health of air quality in Australia.

¹¹⁴ CSIRO 2013.

Research findings on the effects of coal dust on health in Australia are scant, and have had mixed results. For example, a NSW Health report published in 2010 found that regions most affected by open cut coal mining and coal-fired power generation had higher rates of emergency visits and hospital admissions for asthma and respiratory disease and cardiovascular disease compared with the rest of the state¹¹⁵. However, a research report published in 2013 based on analysis of general practice data (1998-2010) for rural communities located near coal mining and coal-fired power generation plants in the Hunter Valley Region found “no significantly higher rates of problems managed or medications prescribed for Hunter Valley region residents compared with the rest of rural NSW”, and no evidence of significantly elevated health issues for residents in the Hunter Valley region. In comparing respiratory problem management rates over the period 1998-2010, however, there was no significant change for the Hunter Valley region despite a significant decrease for the remainder of rural NSW over the same period.

An investigation undertaken by the Department of Science, Information, Technology, Innovation and the Arts (DSITIA)¹¹⁶ to obtain information on ambient particle levels along the Western and Metropolitan coal rail corridor noted conclusions from Queensland Health, in response to the available evidence, that the dust concentrations resulting from all particle sources measured during the investigation were unlikely to result in any additional adverse health effects. However, Queensland Health also noted that even where air quality standards are met, potential adverse health effects may be experienced by highly susceptible individuals such as the elderly or others with significant pre-existing cardio-pulmonary diseases.

The Senate Inquiry committee received anecdotal evidence from the Moranbah Cumulative Impacts Group who indicated that there is a heightened rate of asthma in the town, but that this was difficult to directly attribute to coal dust rather than other sources of pollution such as smoking and airborne pollens.

Under the National Environment Protection Measure for Ambient Air Quality, the Australian Government has set a national ambient air quality standard for PM10, and an advisory standard for PM2.5 which allows for more data to be collected in relation to PM2.5 to revise the standard as appropriate¹¹⁷.

The Project's location – approximately 40 km from the towns and at least 30 km from the nearest WAVs - means that the potential for direct impacts such as noise or dust to affect community health is reduced, except for the potential for dust to affect sensitive receptors. An air quality assessment was conducted to investigate the potential for the Project to affect air quality in the region¹¹⁸ and found that that predicted concentrations of total suspended particles, PM10 (large particles), PM2.5 (small particles) and predicted dust deposition rates comply with the relevant air quality objective at all sensitive receptors, in all modelled Project scenarios, in isolation and cumulatively. As such, no effect on human health and wellbeing is anticipated.

¹¹⁵ NSW Health. 2010.

¹¹⁶ Queensland Department of Science, Information Technology, Innovation and the Arts. 2013. Bofinger, N. 2013; Queensland Resources Council. 2013. Submission 57.

¹¹⁷ Australian Department of Environment. 2013.

¹¹⁸ Katestone Environmental Pty. Ltd. 2018.

The Project's key dust control measures include:

- progressive rehabilitation of mining landforms to minimise dust generation;
- watering of haul roads and stockpiles to minimise dust generation; and
- dust suppression measures at the train load out facility and veneering of loaded coal wagons.

As described in the Project's Noise and Vibration Assessment¹¹⁹ the Project site is located within a sparsely populated area where the main land uses are large acreage grazing properties and mining activities, with the nearest neighbours located approximately 12.2 km from the CHPP (a key potential noise source). This assessment indicated that:

- low frequency noise (<200 Hz) is expected to comply with the noise limits at all receptors;
- predicted ground vibration and airblast overpressure show that typical explosive charge sizes and practices are expected to be below relevant objectives; and
- with the implementation of mitigation and management measures, operational noise levels are predicted to comply with the relevant noise objectives at all receptors under both neutral and adverse weather conditions.

To reduce noise emissions at the nearest sensitive receptors, Pembroke would implement noise controls on fixed plant and mobile equipment, including the overland conveyor, as described in the Noise and Vibration Assessment at Sections 7.1 and 7.2 and Appendix D.

Pembroke would also implement proactive and reactive noise control measures. including the use of weather forecasting and real-time measurement of meteorological conditions and noise levels to modify mining operations as required in order to achieve compliance with applicable noise limits at the nearest sensitive receptors. Real-time meteorological and noise monitoring would be undertaken at locations representative of the nearest sensitive receptors to assist in implementing operational controls.

5.6.2 Access to health services

As described in Section 5.5, there is potential for the Project to increase demand for health services and competition for access to general practitioners may be experienced until supply increases. In addition to promoting a healthy and safe workplace, the Project will employ qualified staff to treat and manage minor health issues on site and implement a range of measures to reduce the impacts on non-resident workers on health services, as described in Section 6.6.

¹¹⁹ Renzo Tonin Ron Rumble. 2018

5.6.3 Mental health

Mental health is affected by a complex range of individual, social and environmental factors. Impacts on mental health as a result of mining projects have been reported as part of SIAs in areas where a proposed mine is close to a village, where a large number of property acquisitions resulted in family or community family upheaval, and/or where uncertainty persists over along period of time in relation to whether the Project will proceed. As an example, the Rio Tinto Mount Thorley Warkworth SIA¹²⁰ identified perceived health impacts related to stress as a result of uncertainty for the future and concerns about the health impacts of poor air/water quality

There appears to be no potential for the Project's construction or operation to negatively affect community members' mental health.

Conversely, there is potential for Project personnel to experience a positive increase in their circumstances, including stable employment, income security, workplace camaraderie and the sense of achievement associated with work, all of which would be positive for mental health. Financial security will also extend positive mental health benefits to workers' partners.

5.6.4 Workers' health

Physical health

Safety standards are primary drivers for mining industry work practices. DNRM's Mine Safety and Health report for 2015-16¹²¹ found recent positive movement in mining safety indicators in Queensland, including a large decrease in the number of disabling injuries, a small decrease in the reported number of high potential incidents, a downward trend in lost time injury frequency over the past five years, and whilst deaths are still occurring, a declining trend in the number of mine fatalities. However, time away from work due to injury had generally remained consistent for the past five years.

As a result of recent coal workers' pneumoconiosis cases, there are also concerns about mine dust contributing to lung diseases. The Department of Natural Resources and Mines (DNRM) reports that as at 23 October 2017, there were 54 confirmed cases of mine dust lung diseases among current and former Queensland mine workers, capturing all confirmed cases of mine dust lung diseases since 1984. Following a Monash University review for the Queensland Government, changes to the respiratory component of the Coal Mine Workers' Health Scheme are being considered¹²². Pembroke will commit to best practice management of any risks to workforce health which are identified as part of the Health Scheme's revision.

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.

¹²⁰ Rio Tinto. 2014.

¹²¹ DNRM. 2017.

¹²² Business Queensland. 2017.

Mental health

A number of submissions to the Queensland Government's recent inquiries into Fly-in, Fly-out work practices described mental health issues relating to mining industry work practices.

MCA's Blueprint for Mental Health and Wellbeing¹²³ 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".

A recent report found that psychological distress is significantly more prevalent in the remote mining and construction workforce than in the overall Australian population, with 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.¹²⁴

The Project will develop a mentally healthy workplace, addressing key factors such as:

- developing an understanding of workplace risk and protective factors;
- developing the knowledge and skills to identify and respond to mental ill-health in the workplace;
- creating a culture that supports wellbeing, including programs to improve knowledge and understanding of mental health and peer support; and
- promoting recovery through return to work.

This is detailed in Section 6.4.

5.6.5 Community safety

Public safety

Whilst the crime statistics (presented in Section 4.6.9) and consultation inputs (as shown in Section 3.3.4) indicate that local towns are very safe communities, influxes of non-local people cause concerns about changes to community safety. In particular, non-local construction workers may not observe local values such as family-friendly public places, and offend through swearing, 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.

¹²³ Minerals Council of Australia. 2015.

¹²⁴ Bowers, J., Miller, P., Mawren D and Jones. B. 2018

The Project will develop and implement an Olive Downs Code of Conduct which will describe positive behavioural outcomes and prohibit negative behaviours. The Code will apply to all personnel (construction and operation) when they are at work, travelling to and from work, in public places or within WAVS, and include:

- expected standards of behaviour in public places (e.g. town centres, parks, clubs and hotels);
- prohibition of all forms of sexual harassment and assault;
- prohibition of all forms of racism and discrimination; and
- safe and courteous driving.

Compliance with the Code of Conduct will be required for all Project personnel. Non-compliance with the Code would risk termination of employment. Workers staying in WAVs will also be bound by the facilities' Codes of Conduct, with withdrawal of accommodation the result of non-compliance.

Venues such as hotels and clubs are well-versed in managing patrons' behaviour, and relationships will be established between Pembroke, key venues and the Moranbah 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 the Code of Conduct; and
- establishing contacts between local stakeholders and Pembroke with regard to workforce behaviour.

Contaminated land

The DES's Environmental Management Register (EMR) and Contaminated Land Register (CLR) were searched for any records of contaminated or potentially contaminated lands occurring on or near the Project site, however no records were identified¹²⁵.

Based on the site inspection, fifteen points of interest were identified including a cattle dip, a cattle yard with potential spray race unit, gas extraction wells, retention ponds, unlabelled and labelled drums, generators and above ground storage tanks (see EIS Figure 3.10-2).

Inappropriate storage, handling and management of chemicals, explosives and wastes could result in land at the Project becoming contaminated and listed on the EMR or CLR. Pembroke would implement appropriate mitigation measures and management (See EIS Section 3.10.4) to prevent or reduce the potential for contamination as a result of the Project.

¹²⁵ GTE, 2018.

A risk assessment was conducted for points of interest within or nearby to proposed disturbance areas, which classified three of the points of interest as greater than low risk. Prior to disturbance of these three points of interest, additional investigations would be conducted to determine the type and extent of contamination, and if required, the sites would be adequately remediated by appropriately qualified specialists. The remaining points of interest within or nearby to proposed disturbance areas were assessed as low risk, requiring field observation during disturbance works only¹²⁶.

In addition, if evidence of unexpected contamination is identified during the life of the Project, work would cease in that area and action taken to appropriately delineate the contaminated soil or fill material. Please refer to Section 3.10 and Appendix M of the EIS for more detailed information.

Road safety

With long straight stretches, areas in poor condition, abundant wildlife and often heavy traffic, safety on the Peak Downs Highway is an area of community concern, particularly at shift change times. A detailed assessment of traffic issues is provided in the Road Transport Assessment (GTA Consultants, 2018) prepared for the Project EIS. Key findings of relevance to traffic safety include:

- the site inspection conducted by GTA Consultants on 10 January 2018 did not indicate any existing road safety issues on Peak Downs Highway or Fitzroy Developmental Road;
- the impact of Project-generated traffic is expected to increase turn movement volumes along various intersections on Peak Downs Highway and Fitzroy Developmental Road, which is expected to be offset by ensuring affected intersections are adequately designed to accommodate the increase in turn volumes; and
- the majority of crashes that have occurred along Peak Downs Highway and Fitzroy Developmental Road (proximate to the site) have likely been caused as a result of driver error or driver behaviour, and the Project is not expected to exacerbate any current road safety issues.

Pembroke has committed to the following measures to support management of road safety:

- use of buses to transport non-resident workers from WAVS between Moranbah, Dysart and the Project site;
- encouragement of car-pooling arrangements for personnel;
- confining the movement of wide loads to low-traffic periods (such as overnight), with the possible exception of 'emergency' deliveries required to maintain production; and
- provision of flights from agreed airports for non-local workers; and
- discussion with Department of Transport and Main Roads regarding intersection construction works on the Fitzroy Developmental Road.

¹²⁶ Ibid.

5.6.6 Utilisation of natural resources

The Project has little potential to impact on access to natural resources with the exception of the potential for impacts on landholders' groundwater access. The Olive Downs Groundwater Assessment¹²⁷ found that there are 200 registered bores in the study area. A field bore census of groundwater bores and wells within 20 km of the Project found that of the 120 bores accessed by the study team, 40 bores were found to be existing and in use, 35 bores are existing but not in use, seven bores were of unknown status and 38 bores were abandoned and destroyed. Of the existing and unknown bores with water use information available, 49 are used for stock water supply, 17 are used for groundwater monitoring and 6 are used for domestic water supply.

With respect to effects on landholders' use of groundwater resources, the Olive Downs Groundwater Assessment indicated that two registered bores intersecting alluvium and three registered bores intersecting the Permian coal measures were predicted to have a decline in groundwater levels at a point in time over the life of the Project. Of these:

- one bore is located on the Olive Downs property which is owned by Pembroke, with no potential to affect farming uses;
- one bore on the Willunga property used for stock water supply is modelled to experience a groundwater levels decline of up to 1.6 m, but this is not expected to impact on the landholders' ability to use the bore; and
- three potentially impacted bores are located on the Meadowbrook property. The bore census indicated that the bores are not currently in use but have historically been used for stock water supply, and whilst 'pumpable capacity' may decline, this is not expected to impact on the landholders' ability to use the bores.

In summary, the Project's effects on groundwater are not expected to have a negative effect on nearby property owners' use of groundwater. A Water Management Plan will be developed for the Project, and will include details on the groundwater monitoring plan. The Water Management Plan will include details of how local landholders will be engaged in bore monitoring, and of make good arrangements if impacts on private bores are predicted.

5.6.7 Flooding

The Project would excise part of the Isaac River floodplain during the operations, which has the potential to increase flood levels in areas of the floodplain adjacent to and potentially upstream of the Project. However post-mining, the temporary levees would be removed and the floodplain area excised significantly reduced. Importantly, the post-mining flood modelling results show that water would not enter the final voids located behind the permanent highwall emplacements in events up to and including the Possible Maximum Flood event.

¹²⁷ HydroSimulations. 2018.

The risk of the Project increasing flood levels and velocities concluded that the Project is not considered to result in any significant change to the existing flood risk for surrounding privately-owned properties or infrastructure. In addition, the changes in flow velocity are predicted to be relatively small in most areas adjacent the Project, with absolute flow velocities similar to areas downstream in the natural section of the stream. Further details on flooding are provided in Section 3.4 and Appendix F of the EIS.

5.7 Community values

5.7.1 Landholders

Impacts on landholders' attachment to and use of properties vary according to the degree of disturbance of the land, aspirations for their properties and the acceptability of Project impacts with respect to those aspirations.

The extent of disturbance to properties which are not owned by Pembroke is shown in Table 5-7. The Project would require the relocation of the Willunga property owners' house, some years after Project commencement, to enable development of the Willunga domain. The owners' goal is to move to a nearby property with similar agricultural and rural values, which will be facilitated by Pembroke. Agreements are pending with the owners of other properties where full or part acquisition or Project access is required in respect to either land use or amenity impacts.

Table 5-7: Land requirements

Property	Area of Project disturbance (ha)	Total property area (ha)	% affected
Willunga	5,660	18,200	31.1%
Vermont Park	4,607	16,623	27.7%
Seloh Nolem	438	8,638	5.1%
Old Bombandy	528	11,037	4.8%
Wynette	509	5,851	8.7%
Winchester Downs	45	15,567	0.3%
Total	11,787	75,916	15.5%

Landholders with a long history in the area are likely to feel a measure of regret at selling part or all of their properties, but would be compensated based on the terms of their commercial agreements with Pembroke. The potential for impacts on property owners' mental health issues is considered very low, as negotiated agreements are in progress to ensure affected landholders are comfortable with and compensated for impacts on their lifestyles and livelihoods. The owners of Willunga which would be acquired in entirety are expected to remain in the local area and within their local networks, and have some years to prepare for the move to another property, so the potential for mental health impacts for these property owners is also considered very low.

The residential amenity of land holdings remains relevant while there are residents or employees in the area. Pembroke would commit to all relevant environmental management standards with respect to air quality, noise and vibration so as to avoid health impacts and prevent amenity impacts, but a mine brings the potential for nuisance impacts such as increased dust, noise (against low background noise levels) and blasting vibrations. The potential for impacts on sensitive receptors is discussed in the EIS's acoustic and air quality sections.

Of Agriculture, Forestry and Fishing businesses in the Broadsound – Nebo SA2 in 2016 (where the Project is located), approximately 70% had no employees, 25% had 1-4 employees and 5% had 5-19 employees. On this basis, it has been estimated that the four private properties within the MLA Area may collectively support employment for two owners per property, with two properties supporting an additional one to four employees. The Project may result in disturbance to or loss of this employment. Loss of employment would be experienced as personal loss to employees, however the impact on overall employment rates would be negligible.

5.7.2 Indigenous community values

The Barada Barna People are the determined native title holders of the land within and surrounding the Project. Native title was determined to exist in small parts of the Project area, along the rail spur and water pipeline corridor, and along the Isaac River, by the Federal Court in the Barada Barna People's Native Title Determination (QC2008/011). Native title is extinguished over the remainder of the Project area.

The Barada Barna Aboriginal Corporation RNTBC, which holds native title on trust for the Barada Barna People, is also the Aboriginal Party for the area of the Project under the ACH Act. Under section 87 of the ACH Act, a CHMP is required to be prepared by Pembroke in accordance with the requirements of Part 7 of the ACH Act.

Pembroke has agreed-in-principle the terms of a CHMP with the Barada Barna Aboriginal Corporation. The CHMP is proposed to be entered into in mid-June 2018 and will then be submitted for approval pursuant to section 107 of the ACH Act by the Department of Aboriginal and Torres Strait Islander Partnerships. The CHMP provides for the engagement of the Barada Barna Aboriginal Party prior to the commencement of any ground disturbance works, which allows for an assessment of the cultural heritage values within the proposed area of disturbance, and for the development of appropriate management strategies.

Equitable participation in employment and supply chains is a key value for Indigenous community members. The Project will maintain a focus on Indigenous employment, training and supply relationships, as discussed in Section 6.4.5.

5.7.3 Cost of living

Residents in local towns suffer high prices for food and non-alcoholic beverages, furnishings and household equipment, recreation and culture, and alcohol and tobacco (see Section 4.5.5). Population growth and/or competition from the Project may contribute to inflation of the cost of services such as electrical and plumbing trades, however inflation of costs for other items is unlikely in the local context.

Inflation of housing prices is the primary concern for impacts on the cost of living, as discussed in Section 5.4. Any inflation of housing costs is likely to have a disproportionate impact on vulnerable groups such as sole parents (predominantly women), people on fixed incomes including seniors, and key workers including retail and service workers. Section 6.5 outlines the Project's management and mitigation strategies in respect to housing impacts.

5.7.4 Community cohesion and resilience

Key factors supporting social and economic resilience in the local study area are outlined in Section 4.2.7. They include high workforce participation, a strong skills base, strong social networks, sufficient housing options and adequate services and facilities.

The Project's focus on recruiting local employees and encouraging employees from other regions to live locally will ensure a positive contribution to social resilience, by supporting population growth, increasing demand for local businesses' offerings, and increasing the pool of people who will participate in community and sporting activities. Employees are likely to share similar community values to existing residents (family friendliness, community safety and working hard), which will support their integration into local networks.

As a large and long term employment generator which is accessible to local communities, the Project will also support further development of the Isaac LGA's skills base, inspire greater confidence in the towns' futures, and may encourage increased investment in housing and businesses.

The key factor which could threaten community cohesion and resilience is exhaustion of local housing reserves, which has potential to displace lower income households, including those of key workers. As described in Section 5.4, the population increases due to the Project are likely to accrue over several years, which will mitigate the risk, however cumulative impacts are also of concern as discussed in Section 5.9.

5.7.5 Community planning goals

As noted in Section 4.1.4 Isaac 2035 aims to strengthen the Isaac region's essential infrastructure; economy and communities, and to protect the natural environment. The Project will support community planning goals by:

- providing opportunities for local businesses to participate in the Project's supply chain (see Section 5.8);
- ensuring a focus on local employment (see Section 5.2);
- supporting operational personnel to move to and integrate with potentially impacted communities (see Section 6.5.3); and
- investing in local community programs and services (see Section 6.6.6).

5.8 Business and industry

5.8.1 Benefits for local businesses

Businesses in the Isaac LGA and the broader MIW region would benefit from the Project through increased demand for goods and services during construction and operation. There is also a likelihood that businesses in the Rockhampton, Central Highlands and Gladstone LGAs will have business offering aligned to Project needs.

During construction, key areas of opportunity will include:

- earth moving, drilling and construction services;
- supply of construction materials, equipment and labour;
- specialist trades services e.g. electrical, ventilation, gas fitting and plumbing;
- transport and logistics services for equipment, consumables and personnel;

- safety, security, training and human resources services; and
- accommodation provision.

The study area has well-established and capable mining and construction businesses, with local and regional suppliers well positioned to meet demand, and there is likely to be strong interest in new supply opportunities in the study area.

Construction personnel staying in Moranbah and potentially Coppabella are also likely to make occasional use of local businesses including food, retail, hospitality and entertainment which will result in a welcome increase in demand during the two to three year period. Construction is therefore likely to be experienced as a substantial positive impact on local and regional businesses.

During operations, local and regional businesses would derive substantial benefits from both Project supply opportunities and expenditure by Project personnel and their households. Project supply opportunities would include:

- mechanical and engineering services and trades companies;
- Registered Training Organisations and employee assistance providers;
- labour hire, recruitment and human resource management providers;
- catering, cleaning and hospitality services;
- business support services including stationary, printing and professional services; and
- transport and logistics.

As the number of 'new local' employees grows, the number of households with moderate to high incomes will increase, resulting in increased expenditure with local businesses such as bakers, grocers, cafes, service stations, homewares, restaurants, licenced clubs and hotels.

As noted in Section 5.3, direct Project expenditure and other consumption effects will also provide additional employment opportunities, increasing the size and stability of local populations.

Further discussion on economic benefits is provided in the EIS's economic impact assessment.

5.8.2 Potential negative effects

The primary potential for negative impacts on local business relates to competition for labour. During 2012-2013, with competition from multiple mining developments, local businesses had extreme difficulty (and accelerating costs) in retaining and recruiting staff. During construction, the Project may compete with other businesses for consumables, services and staff. However, many local businesses have experience with scaling up and down to reflect industry cycles, so this should only cause temporary disruptions to other businesses. Notwithstanding potential cumulative impacts (see Section 5.9), the scale of the Project's construction workforce and supply requirements are unlikely to cause significant impacts on local businesses' activity levels or viability.

During operation, the Project will draw on a mix of local, new local and commuting personnel. This would mitigate the effects of labour draw from local businesses, but impacts such as loss of staff and wage inflation may result for some businesses, particularly in the intensive hiring period during the first two years of operations.

As outlined in Section 6.4, the Project will implement training and workforce development strategies which will address areas of skills needs and shortages, which also has potential for flow-on benefits to other local businesses.

5.8.3 Business and industry partnerships

Key agents in the study area's economic development include:

- IRC;
- DSDMIP's Regional Economic Development team;
- RIN;
- Moranbah Traders Association;
- Dysart Community Support Group;
- Nebo Community Development Group; and
- the Mackay Isaac Whitsunday Regional Development Authority.

Pembroke will work with each of these stakeholders to ensure they are engaged with the respective business and supplier networks ahead of Project development. Pembroke will also consult with stakeholders who may be interested in partnerships to develop training strategies with benefits beyond the Project as detailed in Section 6.4.

5.9 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. The Project is not expected to impact on landholders' access to groundwater (see Section 5.6.6 and refer to the Project's Groundwater assessment for more detail), so no cumulative social impacts are expected in this regard.

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 5-8.

Whilst the study area has significant experience with the cyclical nature of the coal industry, experience also 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 non-residents induced by multiple projects. This affects:

- population characteristics (e.g. number of non-resident workers in the region);
- the labour force (e.g. skills availability);
- social infrastructure (e.g. health, police, emergency and training services);
- housing and workforce accommodation; and
- community values and social indicators.

The status of projects which may contribute to cumulative impacts will be reviewed in the pre-construction phase.

Table 5-8: Proposed Projects within Isaac LGA

Project	Proponent	Location	Status	Peak Workforce
Red Hill Mining Lease Project (RHMLP)	BMA	20 km north of Moranbah	EIS approved with conditions June 2015 (SDPWO Act) EIS assumed development from 2020	Construction - 2,000 Operation - 1,500
Saraji East Mining Lease Project	BMA	Approximately 60 km south east of Moranbah and 30 kms north of Dysart	Draft EIS under consideration (SDPWO Act) Construction potentially from 2022, operations from 2024	Construction – 1,000 Operation - 500
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
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	Draft EIS being prepared (EP Act) Construction 2019-2020, operations from 2021	Construction - 200 Operation - 300
China Stone Coal Project (CSCP)	MacMines Austasia Pty Ltd	Approximately 170 km north-west of Clermont	Draft EIS submitted September 2015 (SDPWO Act) – CG preparing evaluation report Execution status unknown	Construction - 3,892 Operation - 3,391
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 - 2,475 Operation - 3,920

Uncertainties which constrain cumulative impact assessment in the local context include:

- the timing for execution of two projects with an approved EIS (CCM&RP and RHMLP) is unclear;
- the three projects (CSCP, SEMLP and NLP) that are currently in the EIS phase may not proceed to approval by the Government and the Proponents, *and* coincide with the Olive Downs Project;
- project timeframes and workforce numbers are often amended in response to prolonged approval processes, both Government and corporate; and
- the intended use and location of accommodation villages by various projects is not clear from the EIS documentation.

Assessment in this context is therefore speculative, but considers the potential cumulative impacts of the approved (but yet to be constructed) and proposed projects as summarised in Table 5-8. SIAs for the approved projects were undertaken between 2012 and 2014, spanning a period of firstly high demand then a dramatic decline in demand for labour and housing. As such, the risk of labour and housing-related social impacts was high. Following the completion or deferral of several major projects in 2012-2013, sensitivities to changes in demand for housing and labour in the Isaac LGA are currently lower. There is potential though for the cumulative impacts of large projects to place pressure on social resources again. Social impacts and benefits identified by the completed EISs are summarised in Table 5-9. The potential for the Project's social impacts to interact with those of others is outlined below.

Table 5-9: Social impacts of mining projects in Isaac LGA

Key findings	BCP	RHML	CCM&RP
Additional, direct and indirect local and regional employment (construction and operation)	✓	✓	✓
Increased temporary and permanent housing and accommodation requirements in Glenden (operation)	✓		
Potential impacts on housing affordability in Moranbah and Clermont (operation)		✓	✓
Increased demand on social infrastructure, including mental health, general health and emergency services in Glenden (BCP), Moranbah and Isaac LGA (RHML) (construction and operation)	✓	✓	
Contribution to regional skills shortages and potential labour market drain into the mining industry (construction and operation)	✓	✓	✓
Health and safety issues associated with increased traffic volumes (Gregory Development Road, Flinders Highway and Peak Downs Highway) (construction and operation)	✓	✓	✓
Health and safety concerns associated with commuting and shift work (construction and operation)	✓	✓	
Perceived deterioration of community safety (construction)	✓	✓	
Continued provision of educational and training opportunities (operation)		✓	
Sustaining and enhancing opportunities for mining-related service industries and businesses in Moranbah and the broader region (construction and operation)	✓	✓	✓
Enhanced economic development opportunities in the Isaac/Charters Towers/Bowen Basin region (construction and operation)			✓
Disruption of cattle operations and reduced amenity for landholders (construction and operation)			✓

5.9.1 Potential impacts during construction

As early works on BCP construction have commenced, it may be complete before the Project commences construction. The SEMLP IAS assumes that construction would not commence until 2022, so the potential for cumulative impacts with the Olive Downs Project during construction would also be low.

However, if the CCM&RP, CSCP, NLP and RHMLP progress to full execution, their construction periods may overlap with Project construction. Coincidence of all peaks is unlikely, so the following discussion describes the highest maximum potential for impacts.

Cumulative demands for construction workers during the Project's second construction period around 2027 cannot be estimated with any certainty.

Isaac LGA

If the Project's construction peak coincided with that of RHMLP, there could be approximately 2,700 construction workers in the Moranbah area during 2019-2021. The majority are likely to be based at WAVs, but would access town facilities, and would be equivalent to an increase of 26% on the 10,580 non-resident workers estimated to be in the Isaac LGA in 2017.

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 RHMLP, Olive Downs and CCM&RP construction workers could see up to 3,100 construction workers in the Moranbah area during 2019-2021.

Relative to Moranbah's residential population, this would be a substantial increase in the FTE population. Not all would be on shift at the same time, but the FTE increase would be in the order of in the order of 25-30%. Whilst previous years have seen higher numbers, there is potential for locals to feel 'inundated' and concerned about rising numbers of non-local people in their town. An appreciable increase in traffic could be experienced on the Moranbah Access Road, Goonyella Road and Peak Downs Highway, with consequent concerns about traffic safety. This will require each of the proponents to have and enforce codes of conduct, and to manage project traffic and transport to reduce traffic volumes and avoid impacts on traffic safety.

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. 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.

The construction workforces would also result in increased demands for retail, hospitality, fuel and occasional meals at venues in Moranbah, which would be experienced as a positive impact for local businesses.

The NLP could also commence construction in 2019-2020, which would add a further 200 construction personnel, likely based in a WAV near the site (between Glenden and Moranbah) rather than near towns.

Projects whose construction may have cumulative impacts with Willunga domain's construction are unknown, however at a maximum workforce of 200 personnel, the Project is unlikely to make a significant contribution to cumulative impacts during 2023.

Cumulative demands on Council infrastructure such as water and waste water systems, roads, parks and municipal services would be experienced. The capacity of infrastructure is examined in detail in other section of the EIS, however it has been assumed here that, given previous numbers of non-resident workers have been higher, there is capacity within Council infrastructure to absorb cumulative demands at this level. This assumes that all projects communicate with IRC about potential impacts in a timely way when the timing for their execution is confirmed, so that Council has time to plan for the increases and develop effective agreements with proponents.

Inter-regional impacts

Some of the new projects would require very large workforces for construction, operation or both, and will make significant contributions to cumulative social impacts at the inter-regional level. If CCM&RP's or CSCP's construction peak coincided with the RHML, NLP and Olive Downs Project peaks, a cumulative demand for more than 5,000 personnel could result. This would be a significant benefit for construction industry companies and workers in the Isaac, Mackay 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.

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 Olive Downs Project would however make a minimal contribution to broader labour shortages.

5.9.2 Potential impacts during operation

Isaac LGA

The Project is assumed to commence operations in 2020, by which time BCP could be operational with 545 personnel. Between the Project and BCP, a cumulative total of approximately 1,500 jobs would be available in the Isaac LGA by 2021, which would be a significant benefit for local and regional communities. If the NLP proceeded, an additional estimated 300 operational jobs would be available, and if SEMLP also proceeded, the four projects could produce approximately 2,300 jobs.

This combination could result in a direct population increase of several thousand people (based on Isaac's average households size, and dependent on the proportion of residential jobs), which would regain the population lost in 2011-2016 and support the LGA's future growth. The availability of housing would be the predominant concern which, in the event of cumulative impacts eventuating, will need a coordinated, multi-party response. There is also potential for residents to again feel 'swamped' by the number of non-residential workers in the LGA, albeit a majority are likely to be accommodated in WAVs.

BCP's operational impacts would be concentrated in or near Glenden. As such there is little possibility for cumulative impacts on local housing or services in the local SIA study area from this source, however cumulative population increases would result in ongoing demands for Council, health, social and emergency services infrastructure in the LGA. This would require substantial funding upgrades in order to maintain service levels over time. The capacity and condition of the LGA's road network would also require focussed attention and funding.

There is potential for significant growth and strong demand for housing in Dysart if the Olive Downs and SEMLP projects both proceed. Assuming a proportion of Olive Downs and SEMLP employees would settle in Dysart, a population increase of some hundreds could result. This would be strongly positive for businesses and community vitality, and for the town's sustainability.

If the RHML Project also proceeded to operations by 2021, a cumulative total more than 3,800 jobs could be available. 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 five projects is difficult to determine.

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

The potential cumulative effects of a number of Projects proceeding include significant benefits for employment rates, labour force participation and household well being in the Isaac, Mackay 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.

The availability of mining labour is a key concern and is the subject of multiple Government programs and partnerships (see Section 4.7.9).

5.9.3 Summary of potential cumulative impacts

In summary, the potential cumulative impacts during construction include:

- concern about rising numbers of non-local workers in the Isaac LGA;
- an increase in traffic on local and state roads in the Isaac LGA;
- an appreciable increase in demand for local health services;
- cumulative demands on Council infrastructure such as water and waste water systems, roads, parks and municipal services; and
- inter-regionally, labour draw away from other businesses and industries who are dependent on construction labour and skills.

Potential cumulative impacts of operation include:

- population growth of several thousand people in the Isaac LGA, with potential for significant growth in Moranbah and Dysart in particular;
- the availability of 1,500 – 3,800 jobs in the Isaac LGA, and potential for very large numbers of jobs from the CCM&RP and CSCP which would be relevant at inter-regional level;
- severe impacts on housing availability and cost;
- potential for change to social dynamics as a result increasing numbers of non-residential workers;
- ongoing increased demands for Council, health, social and emergency services infrastructure in the LGA;
- the need for road network upgrades;
- increased employment rates, labour force participation and household well being; and
- inter-regionally, significant benefits for local and regional businesses, but also significant negative impacts related to labour draw and the likelihood of mining labour and skills shortages.

All cumulative impacts are likely to be significant, but their likelihood is unknown. Actions which address the Project's potential contributions to cumulative impacts are summarised in Table 5-9 and detailed in Section 6.

5.10 Impacts of Project closure

The Project may be in operation for approximately 88 years, which would see closure occur around 2099.

Decommissioning activities would include the removal and recycling (where practicable) of above ground infrastructure, site rehabilitation and remediation to applicable regulations and standards in place at that time. 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 1,300 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 to the local and regional area. A workforce of approximately 50 people is expected to be required of the decommissioning process.

Given the large number of existing and proposed projects in the Bowen Basin, the Project is likely to be one of several operating in the area at the time of decommissioning, so it is also possible that its cessation will have little effect on local communities.

At least three years prior to decommissioning, Pembroke will consult with local communities regarding potential impacts, and identify strategies which will reduce or avoid social impacts. This engagement would also consider the potential for positive opportunities e.g. the remediation of grazing land and beneficial water management. A Closure Management Plan will need to be developed three to five years prior to expected decommissioning, addressing collaboration with key stakeholders as part of closure planning, and reflecting stakeholders' views and aspirations about the future use and management of Project land.

5.11 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 5-10 was developed with reference to Queensland Treasury's risk management guidance¹²⁸, the IAIA's guidance on evaluating social impacts¹²⁹ and DSD's 2013 SIA guideline risk assessment matrix.¹³⁰ The level of significance (low to very high) reflects the level of risk or benefit for social resources that support quality of life and social sustainability, e.g. secure employment, business prosperity, housing affordability, social infrastructure access or community cohesion.

Table 5-11 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.

¹²⁸ Queensland Treasury. 2011.

¹²⁹ IAIA. 2015.

¹³⁰ DSD. 2013.

Mitigation and enhancement strategies which address each significant impact and benefit are detailed in Section 6.

Table 5-10: 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	D Medium1	D2 High	D3 Very high	D4 Very high

Table 5-11 Significance evaluation

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/Enhancement	Residual Risk/benefit
Employment						
Creation of an estimated 500 construction jobs in 2019-20, 700 jobs in 2020-21 and 300 - 500 jobs around 2027. Local and regional construction companies have capacity and would be significant contributors to the construction workforce.	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 (Sections 6.7.3, 6.7.4 and 6.7.5)	D2
Increased availability of mining jobs in Isaac LGA, in the order of 5% more jobs by 2021, with a potential increase of up to 7.5% on 2017 availability in 2033.	O	✓	Existing employed, underemployed and unemployed mining workers, and new recruits to mining	D2	Recruitment strategy (Section 6.4.3). Supporting settlement strategy (Section 6.5.5)	D2
If local people fill 25% of Project jobs by 2020, 120 Isaac LGA residents would be employed. Achievement of 50% local employment (240 people in 2020) is also within range given estimated labour capacity in the LGA.	O	✓	Employees and families	C2	Housing and Accommodation Management (Section 6.5) Community development and investment (Section 6.6.6)	C3
Additional employment would be available to local and regional residents with a doubling of the workforce in 2021, offering greater choice for local workers and a range of social benefits.	O	✓	Employees (local and across other Queensland regions), families and Isaac region communities	C2		C3
In accordance with its agreement with the BBAC, the Project aims to employ at least nine Indigenous employees during Years 1-10 of operations; 14 Indigenous employees in Years 11-15; and 28 to 30 Indigenous employees from Year 16. Indigenous families would benefit from access to greater disposable income, and Indigenous role models would create a greater culture of employment.	O	✓	Barada Barna Aboriginal Corp. DATSIP. Indigenous employment support agencies and programs	C2	Recruitment strategy (Section 6.4.3).	C2
The Project is aiming for 20% female employment upon commencement of operations, which would see 96 women employed in 2020, and 192 in 2021.	O	✓	Women, including young women yet to enter the workforce. Employment support agencies and programs.	C2	Recruitment strategy (Section 6.4.3). Supporting parents (Section 6.4.6)	C2
Population growth						
Construction would see a temporary population increase of approximately 440 people FTE (average over 2019-2021) or approximately 2% during 2019-2021 with consequent demands for local health services. A smaller population increase and demand on local health services would result from the second construction phase in 2027, in the order of 1.0 – 1.5%.	C	×	IRC. Health services. WAV providers.	C2	Engagement strategies (Section 6.3.3) Healthy workplace strategy (Section 6.4.7)	C1

Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/Enhancement	Residual Risk/benefit
A FTE of 340 non-local workers during the first construction period would see an increase of approximately 306 men in the LGA, equivalent to a 2.5% increase in the male population and increasing gender imbalance in the Moranbah area, and potentially changes to feelings of safety. For the second construction period, this increase would be lower at approximately 200 additional males.	C	×	Moranbah residents	C2	Recruitment strategy (Section 6.4.3). Workforce Management (Section 6.4)	C1
A direct population increase of at least 300 people in the LGA is likely in 2020 as the result of Project operations, with a direct increase of up to 600 people possible, contributing to population growth and community activity levels.	O	✓	IRC. Health services. Local Schools and Dept. of Education. MDSS and Dysart Community Support Group.	C1	Recruitment strategy (Section 6.4.3). Supporting community involvement strategy (Section 6.4.8)	C1
Inclusive of population growth during 2020, the second year of operations may result in a population increase in the Isaac LGA of between 650 and 1,300 people, however the higher number is more likely to be realised in ensuing years. The increase would be distributed between the towns, and contribute to reversal of population decline.	O	✓	IRC. Health services. Local Schools and Dept. of Education	B2	Recruitment strategy (Section 6.4.3). Community development and investment (Section 6.6.6) Housing and accommodation management (Section 6.5)	C2
In 2033, with a workforce of 1,300 people, 25% new local workers would see a population increase of approximately 878 people or 3.1% (inclusive of previous Project-induced growth). With 50% new locals, the total increase could reach 1,755 people or 6.2 % of the projected population in 2033. This will contribute to stable and sustainable population growth in the LGA.	O	✓	IRC. Health services. And Queensland Health. Local Schools and Dept. of Education	B2	Recruitment strategy (Section 6.4.3) Community development and investment (Section 6.6.6) Housing and accommodation management (Section 6.5)	B3
Housing						
Assuming 10% of construction workers settle in Moranbah this would represent 25 - 30% of listed available rental stock (as at October 2017). If there was no increase in rental stock, this could cause a small increase in rental prices, but from a low (affordable) base.	C	×	Moranbah renters	B2	Planning for workforce housing needs (Section 6.5.3) Workforce Accommodation Villages (Section 6.5.6)	A1
There is potential for Project-induced demand pull inflation to increase the cost of housing (purchase and rental), particularly in the context of cumulative demands. If 50% of personnel were new Isaac residents by 2021, and no additional rental stock was available, significant rental cost inflation and displacement of low income households could result.	O	×	Low to moderate income households; key workers; IRC and local businesses	B3	Increasing housing availability (Section 6.5.4) Monitoring and reporting (Section 6.8)	B2
Project personnel's demand for housing purchase would contribute to incremental housing cost increases. This could be experienced as a negative impact for local people who wish to enter the housing market.	O	×	Young people and key workers seeking local home ownership	B1	Increasing housing availability (Section 6.5.4) Monitoring and reporting (Section 6.8)	B1

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Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/Enhancement	Residual Risk/benefit
Housing price increases would be positive for locals needing to recoup losses on housing purchases.	O	✓	Residents encumbered by large mortgages and low equity	B1	Increasing housing availability (Section 6.5.4)	C1
Social infrastructure						
Non-resident workers typically make significant demands on hospital out-patient services and GPs. At approximately 340 FTE non-local personnel during the first period of construction, this may be a noticeable increase, however local health services are experienced in dealing with fluctuating demands.	C	×	Moranbah and Dysart hospitals and GPs	C1	Access to health services (Section 6.6.3) Engagement strategies (Section 6.3.3)	B1
Demands on ambulance and fire services would be experienced in relation to traffic accidents, work place accidents, patient transport from work sites and WAVs to hospitals and population increases, in the context of constrained capacity.	C/O	×	Moranbah, Dysart and Middlemount QAS	C2	Emergency response arrangements (Section 6.6.5) Monitoring and reporting (Section 6.8)	C1
The number of non-local workers will require consideration in planning for Council services such as water supply and waste management, and with respect to policing.	C/O	×	IRC; Queensland Police Service	D2	Engagement strategies (Section 6.3.3) Emergency response arrangements (Section 6.6.5)	D1
Population increases resulting from the Project will require commensurate increases in health service provision levels (e.g. hospital, GPs, specialists, allied and community health services and mental health services). Competition for access to GPs may be experienced until supply increases with demand.	O	×	IRC. Health services and Queensland Health.	C2	Access to health services (Section 6.6.3) Healthy workplace (Section 6.4.7) Monitoring and reporting (Section 6.8)	C1
A small increase in school enrolments may occur during 2019-2020 (a maximum of 30, most likely in Moranbah). During 2020-2021 an increase in enrolments would result, potentially in the order of 60 -120 enrolments across the LGA. This is generally within schools' current capacities.	O	×	Local schools and Dept. of Education	C2	Engagement strategies (Section 6.3.3) Monitoring and reporting (Section 6.8)	C1
At the upper level if the 'new local' population build strongly, up to 230 enrolments could be required. If sudden and unexpected, this could challenge schools' capacity. The Project will provide advice to the Department of Education on numbers of new local workers during the first three years of operation.	O	×	Local Schools and Dept. of Education	B2	Engagement strategies (Section 6.3.3) Monitoring and reporting (Section 6.8)	B1
Population growth will induce incremental increased demand for community services which are already working at capacity, potentially extending wait times for service access.	O	×	Moranbah & District Support Services Dysart Community Support Group	C2	Community development and investment (Section 6.6.6)	B2

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Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/Enhancement	Residual Risk/benefit
Project-induced demands for childcare are likely to be within local capacity, but cumulative demands may result in shortages. Employment equity is constrained by a lack of overnight care options.	O	×	IRC, childcare centres and family day care providers	C1	Supporting parents (Section 6.4.6)	B1
The increase in population attributable to the Project will introduce additional people who could contribute through volunteerism.	O	✓	Community cultural and sporting organisations in Isaac towns	B2	Supporting settlement (Section 6.5.5) and community involvement (Section 6.4.8)	C2
Businesses						
Construction will offer diverse supply opportunities for capable businesses in the Isaac and Mackay LGAs, and for business in other regions such as the Rockhampton LGA. Some personnel expenditure with local businesses is also expected.	C	✓	Businesses dependent on mining industry construction	C1	Engagement and capacity building (Section 6.7.3) Procurement strategies (Section 6.7.4)	C2
During operations, local and regional businesses would derive substantial benefits from both Project supply opportunities and expenditure by Project personnel and their households.	O	✓	Businesses in the Isaac and Mackay LGAs	D2	Engagement and capacity building (Section 6.7.3) Procurement strategies (Section 6.7.4)	D2
Indigenous businesses will be targeted and will have opportunities to supply the Project, with potential for long term supply opportunities.	O	✓	Indigenous business owners and employees	D2	Indigenous business participation (Section 6.7.5)	D2
Impacts such as loss of staff and wage inflation may result for some businesses, particularly in the intensive hiring period during the first two years of operations.	O	×	Business owners and customers	C2	Training and workforce development (Section 6.4.4)	B2
Community wellbeing and resilience						
The Project will make an incremental increase to volumes of traffic using local and State roads which are heavily trafficked and in poor condition in places, including an increase in the volume of traffic on the Peak Downs Highway near WAVs.	C/O	×	Coppabella residents, other motorists	C1	Engagement strategies (Section 6.3.3) Workforce management (Section 6.4)	B1
The Project's local employment focus will support social resilience by increasing demand for local businesses' offerings, supporting development of the Isaac LGA's skills base and increasing the pool of people who will participate in community and sporting activities.	O	✓	IRC; Isaac LGA communities, business and organisations	C3	Engagement strategies (Section 6.3.3) Procurement strategies (Section 6.7.4)	C3
Pembroke has an agreement with the Barada Barna Aboriginal Corporation which includes ongoing financial contributions to BBAC. Dependent on BBAC decisions, this could result in funding for BBAC's planned training centre.	O	✓	Barada Barna; Indigenous young people and jobseekers	C3	Indigenous training and employment strategies (Section 6.4.5)	C3
There is potential for reduced amenity for neighbouring landholders due to noise, blasting and dust impacts.	C/O	×	Landholders and employees	B2	Engagement strategies (Section 6.3.3)	B1

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Impact/opportunity	Phase	Nature	Stakeholders	Signif.	Mitigation/Enhancement	Residual Risk/benefit
The Project is likely to have a positive impact on population stability, by increasing local job opportunities keeping people in the LGA, attracting new workers and their families, and inspiring confidence in the towns' futures. This will lead to higher social capital and participation.	O	✓	IRC, Isaac LGA communities, business and organisations	C3	Engagement strategies (Section 6.3.3) Workforce Management (Section 6.4) Planning for workforce housing needs (Section 6.5.3)	C3
The ability to earn above-average incomes over an extended period would be a significant benefit for contractors and employees, and particularly for young people, women and Indigenous people who may be new to the mining industry.	O	✓	Project employees including Indigenous young people, previously unemployed people, women and their families and jobseekers	D2	Recruitment strategy (Section 6.4.3). Training and workforce development (Section 6.4.4)	D2
Both direct Project expenditure and other consumption effects will provide additional employment opportunities, increasing the size and stability of local populations.	O	✓	IRC; Isaac LGA communities, business and organisations	B2	Recruitment strategy (Section 6.4.3). Workforce Management (Section 6.4)	B3

6 Social Impact Management Plan

6.1 Introduction

This section presents the Project's Social Impact Management Plan (SIMP), which includes management strategies for:

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

Collectively, the five management strategies will:

- mitigate the Project's social impacts on local communities and stakeholders;
- maximise local employment and encourage non-local employees to move to local communities; and
- ensure that opportunities associated with the Project deliver long-term benefit for local communities.

A summary of key actions is provided in each strategy for the pre-construction, construction and operations (Year 1-3) phases. An integrated monitoring and reporting process is also provided to maintain a focus on adaptive management, and will be integrated with Project management processes.

6.2 Coordination, delivery and review

Pembroke will contract a company to construct the Project, and may also contract a company to establish Project operations and manage the mine for a period, after which either Pembroke would assume management or the contract for mine management would be extended. Relevant commitments made in the SIMP will be extended to Principal and major contractors as noted in the SIMP.

Pembroke will coordinate and monitor delivery of the SIMP through an internal Coordination Committee. The Coordination Committee will include personnel responsible for:

- Project management;
- construction management;
- contracts and procurement;
- community and stakeholder engagement;
- workforce and accommodation management;
- workplace health and safety; and
- Indigenous partnerships and community relationships.

The Coordination Committee will be convened upon approval of the Project to develop a detailed implementation and monitoring program for the SIMP, and commence actions with longer lead times.

Pembroke will have dedicated personnel to implement the SIMP, coordinate stakeholder engagement and partnerships, and manage community investment strategies.

The SIMP will be reviewed annually and updated on the basis of monitoring data, including stakeholder feedback. A comprehensive review of the SIMP will be undertaken during Year 3 of operations, and again prior to the development of the Willunga Domain. These comprehensive reviews will include consultation with IRC and the Project's CRGs to identify the effectiveness of SIMP strategies, and any changes which need to be made to the SIMP to ensure ongoing effectiveness.

Subsequent SIMP revisions will be undertaken for ensuing ten year periods.

6.3 Community and Stakeholder Engagement Management Strategy

This strategy includes:

- principles and objectives for community and stakeholder engagement;
- identification of key stakeholder groups;
- a strategy for communication of Project details, social impacts and opportunities, and SIMP strategies;
- a Complaints Management Procedure; and
- actions that promote an active role for stakeholders in monitoring the Project's impact management strategies.

Specific engagement strategies pertaining to community and industry partnerships are detailed in Sections 6.6 and 6.7 respectively.

6.3.1 Engagement Principles and Objectives

The following principles underpin Pembroke's approach to community and stakeholder engagement:

- transparency and continuity, including regular engagement, clear information processes and feedback loops;
- inclusiveness, ensuring Isaac LGA residents, businesses and groups can participate through a range of engagement mechanisms, and respect for diverse views;
- fostering partnerships, through engagement with stakeholders in pursuit of shared outcomes; and
- integrity and accountability, based on engendering trust, meeting Project commitments and building a social license to operate.

This strategy's objectives are:

- identification of stakeholders, issues and information needs, and provision of a clear forward program for engaging stakeholders;
- ensure a range of opportunities is provided for engagement between stakeholders and the Project;
- provide a framework for developing strong and co-operative relationships with local communities and stakeholders;
- ensure Project planning and delivery are informed by stakeholder views; and
- ensure engagement supports adaptive management of social impacts.

A detailed plan and program for community and stakeholder engagement will be developed prior to construction, and reviewed and updated for operations.

6.3.2 Stakeholders

The key stakeholders addressed by this strategy include:

- IRC;
- landholders in the Project area;
- local communities, including Moranbah, Dysart, Middlemount, Nebo and Coppabella, and other Isaac residents with an interest in the Project;
- Indigenous stakeholders including Barada Barna people, Indigenous businesses and training providers;
- government agencies who plan or provide social infrastructure, including:
 - Queensland Health;
 - Queensland Police;
 - Queensland Ambulance Service;
 - Queensland Fire and Emergency Services;
 - Department of Education (Moranbah, Dysart, Middlemount and Nebo schools);
 - Department of Communities, Disability and Child Safety; and
 - Department of Aboriginal and Torres Strait Islander Partnerships;
- key community and economic development organisations including:
 - Moranbah and District Support Service Association Inc;
 - Dysart Community Support Group Association Inc.;
 - Moranbah Community and Youth Hub management committee;
 - Nebo Community Development Group; and
 - CTM Community Support Network (in respect to Middlemount);
 - other organisations who are providing services and programs of relevance to the SIMP;

- businesses and trade and industry groups including:
 - Moranbah Traders Association;
 - Dysart Community Support Group; and
 - the Mackay-based Resource Industry Network (RIN).

Engagement actions for each stakeholder group are outlined below and will be reviewed with stakeholders on a regular basis.

6.3.3 Engagement actions

Findings from SIA engagement show:

- local communities and stakeholders receive their information through a variety of channels, and a mix of online and traditional methods of communication is important; and
- existing commitments to work and family have a substantial impact on stakeholder capacity to participate in engagement, particularly where an ongoing commitment is required.

The engagement strategies include active participation for key stakeholders (such as Community Reference Groups and information sessions) and a variety of readily accessible options (such as websites and community events).

Isaac Regional Council

During the pre-approval phase, Pembroke will meet with IRC to discuss:

- the SIA findings and SIMP in detail;
- any changes to social conditions or potential cumulative impacts since the EIS was completed;
- the scope of the Olive Downs housing study and housing strategy (see Section 6.5.4);
- the potential for Project demand to exceed current and planned capacity of water and/or waste services, and the need for any mitigation measures to address any shortfall in capacity;
- the results of the Project's assessment of traffic assessment, and the detail of mitigations required to address Project impacts on Council roads;
- WAV options, and the process for identifying WAV capacity;
- water use and management;
- childcare capacity, Project demand and potential responses if demand is likely to exceed current/planned childcare supply; and
- any other long-lead planning actions to be initiated.

The outcomes of initial engagement with IRC will include input to refinement of the management strategies, and agreement on the forward program for engagement between IRC and Pembroke.

Engagement during the Project's construction and early operations phase will be at six monthly intervals as a minimum (or as agreed with Council) and provide an update on:

- Project design and schedule;
- local and non-local employment numbers;
- workforce accommodation and management;
- progress with SIMP strategies;
- progress of strategic partnerships; and
- insights and outcomes from local community and stakeholder engagement.

Council feedback on the effectiveness of the Project's SIMP will be sought and considered in annual review of the management strategies, and a schedule for ongoing engagement will be agreed with IRC.

Landholders

Pembroke has engaged with landholders whose properties are within the Project footprint. Regular engagement is being undertaken as new information comes to hand, and will continue until such time as the owners have vacated the properties (if sold).

All landholders will be provided with Project representatives' contact details to enable immediate 24 hour contact with the Project from the commencement of construction, in the event of any impacts, issues or concerns.

Local communities

Pre-construction

The multi-stakeholder workshops held in each town during SIA development were well received by participants, with positive feedback received about the method of engagement and the level of transparency demonstrated during Project planning.

These workshops represent a foundation for Pembroke to strengthen local relationships, maintain continuity and ground-truth its impact management and community engagement strategies.

Prior to the commencement of construction, Pembroke will hold follow-up workshops in each town (Moranbah, Dysart, Nebo and Middlemount) to explain the SIA findings, the SIMP and opportunities for involvement, including the scope of supply opportunities and tender readiness. As with the SIA engagement program, workshops will be open to all local stakeholders and encourage diverse representation from residents, businesses and service providers. The continued involvement of SIA participants will also be encouraged through an established email list.

Feedback will be sought on the Project's engagement program and proposed mechanisms to ensure communications and engagement opportunities are delivered in an accessible, appropriate and meaningful way.

Construction

Pending the feedback received in the pre-construction phase, engagement mechanisms during construction will include:

- a free call Project information line available from 8 am to 8 pm;
- a website which provides:
 - updated timing for Project stages and current activities;
 - anticipated impacts (e.g. road diversions or over-size loads);
 - community and stakeholder engagement opportunities;
 - businesses supply, tendering and engagement opportunities;
 - jobs available and links to the application process;
 - a feedback portal to enable people to communicate with the Project;
- a clear process for lodging, managing and reporting on complaints;
- two Community Reference Groups as outlined below;
- attendance (by invitation) at community and business committee meetings;
- a one-page Project update published quarterly in the Moranbah Community News, Dysart Diary, Nebo News, and as a flyer distributed through the Middlemount Newsagency; and
- an annual Project information session / drop in session in Moranbah, Dysart, Nebo and Middlemount to facilitate access to Project representatives for interested stakeholders.

Community Reference Groups

The Project will convene a Moranbah Community Reference Group (CRG) during the first year of construction, followed by a Dysart/Middlemount CRG prior to commencement of operations. CRGs would include representatives of:

- IRC;
- Barada Barna People;
- Queensland Health (Moranbah and Dysart Hospitals, Middlemount Community Health Centre);
- Queensland Police, Ambulance and Fire and Rescue Services;
- local schools;
- local young people;
- local seniors;
- Moranbah Traders Associations;
- Moranbah and District Support Services;
- Dysart Community Support Group; and
- Nebo Community Development Group.

The CRGs will engage stakeholders in discussion about the Project's progress, training, employment and supply opportunities, social impact management, community investment and social monitoring.

CRGs will meet for the first three years of operation (subject to renewal by agreement with members) on a quarterly basis or as agreed with members.

Operations

Prior to commencement of operations, the Project will review its stakeholder engagement strategies and outcomes in consultation with the Community Reference Groups, and update the Community and Stakeholder Engagement Plan for operations. Engagement mechanisms during the first three years of operations are expected to include:

- the Project hotline and email contact mechanisms;
- maintenance of the Project website as outlined above;
- dedicated staff for Project communications, engagement and social impact management;
- regular project updates (quarterly for the first three years) through local community publications and Project website;
- attendance at community and business committee meetings (by invitation); and
- an annual Project information session / drop in session in Moranbah, Dysart, Nebo and Middlemount to facilitate access to Project representatives for interested stakeholders.

The engagement program would be reviewed with the CRGs in Year 3 and renewed for the following years of operation.

Businesses and business/industry groups

Engagement with business and industry groups in the Isaac LGA and MIW region is detailed in Section 6.7.3. In summary, it will include:

- liaison with key stakeholders to undertake supplier market analysis and build a Local, Regional and Indigenous Businesses register;
- inviting businesses to briefings and workshops to discuss tendering requirements and promote access to capability development;
- engagement with Indigenous businesses and facilitation of capacity building programs; and
- Project attendance (by invitation) at business and industry association meetings.

Indigenous people

The SIA discusses Indigenous equity, labour force issues and the Barada Barna people's goals with respect to participation in the Project. An Indigenous training and employment strategy is provided as part of the Project's Workforce Management Strategy (Section 6.4), and is linked to Indigenous business engagement as outlined in Section 6.7.5. Key actions for engagement with Indigenous stakeholders include:

- work with Barada Barna people and key advisory agencies to finalise the Project's Indigenous participation strategies;

- promotion of employment and supply opportunities through Indigenous stakeholder networks;
- ongoing partner engagement with respect to training and employment programs; and
- initiatives to contribute positively to the social and economic wellbeing of Indigenous people through community development and investment.

Government agencies and social infrastructure providers

Engagement with Government agencies and social infrastructure providers during the first five years of the Project (construction and Years 1-3 of operations) will focus on:

- identifying skills shortages and training opportunities;
- advising agencies and facilities (such as schools and hospitals) of the Project's schedule and anticipated workforce build-up;
- monitoring of social impacts; and
- development and implementation of partnership initiatives.

Pre-construction

Prior to construction, Pembroke will provide a briefing to the SIA CARG on the SIA findings and SIMP, and seek feedback.

Consultation will also be initiated with local health, Police and Emergency Services stakeholders to discuss the Project's Health and Community Wellbeing Management Strategy, and procedures for working with local service providers (see Section 6.6).

Consultation may also be required with Economic Development Queensland with respect to their Bushlark Grove development in Moranbah (see Section 6.5.4).

Construction

Minimal impacts on social infrastructure are expected during construction, with the exception of some demands on health, Police and emergency services. Engagement with Government agencies and social infrastructure providers during the Project's construction phase will include:

- six monthly advices to IRC, local schools, Moranbah and Dysart Hospitals, local GP and dentistry clinics and inter-agency networks regarding workforce build-up and any local settlement of personnel; and
- ongoing engagement with local health stakeholders (Moranbah and Dysart Hospitals, participating medical centres and Moranbah Mental Health Service) to support initiatives to maintain health service capacity.

Operation

Six months prior to the start of operations, and at six monthly intervals for the first three years, Pembroke will provide notice to local health, education and emergency service stakeholders and the DCCSD regarding workforce build up, and the likely number of 'new local' employees and families. This will assist schools and agencies to plan their resources.

This advice would also be provided prior to construction of the Willunga domain, and as the workforce ramps up to full production of 20 Mtpa.

Consultation with the Moranbah and District Support Service Association Inc. and Dysart Community Support Group Inc. will be undertaken to develop partnerships to support integration and service delivery for the Project's 'new local' personnel and families (see Section 6.6.6).

The Project will continue to communicate and engage with Government and non-government agencies through the CRGs, partnership initiatives and community forums. The CRG will act as a communication channel for a range of agencies, and provide an advisory role in relation to the Project's Community Development Fund allocations.

6.3.4 Complaints Management

Peabody will provide and promote an Olive Downs Project Community Contact number for the purpose of receiving complaints and enquiries from landholders and community members in relation to Project activities. The Community Contact number will be provided to:

- all landholders in the vicinity of the Project and its infrastructure;
- Isaac Regional Council;
- Police officers in Moranbah, Dysart and Middlemount;
- managers of licensed venues; and
- the public, through Pembroke's website.

The response procedure for community complaints will include:

- contacting complainants within two hours to acknowledge the complaint and advise on the investigations which will take place;
- undertaking investigations into the likely cause of the complaint, and providing an update to the complainant within 24 hours;
- assessing and implementing additional control measures if required;
- contacting the complainant to advise of the measures which were or will be undertaken, and seeking the complainant's feedback on this response;
- accurate recording of all details regarding complaints in a Complaints Register, including:
 - the date and time of the complaint;
 - the method by which the complaint was made;
 - any personal details of the complainant which were provided by the complainant or, if no details were provided, a note to that effect;
 - the nature of the complaint;
 - the action taken by Pembroke in relation to the complaint, including any follow-up contact with the complainant;
 - if no action was taken, the reasons why no action was taken; and
- monitoring and assessing the effectiveness of the additional controls.

Should a complainant be dissatisfied with how a complaint was resolved, Pembroke will participate in mediated discussions by an independent party agreed between Pembroke and the complainant, and abide by the agreed resolution.

Records of all complaints will be kept for at least five years after the complaint was made. Records will be produced to any authorised officer who asks to see them.

If a trend in complaints is noted, e.g. regular or increasing complaints about any issue, Pembroke will consult with relevant stakeholders (e.g. IRC or Queensland Police) to identify the reason for the trend and any corrective actions required.

Reporting on all complaints and their resolution will be provided as part of the Annual Report.

6.3.5 Decommissioning

Three years prior to the planned closure of the Project, Pembroke will initiate engagement with key stakeholders including regulatory bodies, IRC, employees, suppliers, landholders and Traditional Owner representatives to:

- communicate the timeframe for closure and confirm processes that will be put in place (e.g. contraction of the workforce or supply arrangements) prior to closure;
- ensure all regulatory requirements are well planned for and addressed in a timely way, including definition of environmental outcomes and relinquishment criteria;
- develop the process for community and stakeholder engagement in considering the potential impacts and benefits of decommissioning and closure; and
- guide engagement with local stakeholders to increase their readiness for decommissioning.

A detailed plan for community and stakeholder engagement will then be developed to support engagement prior to and during the closure and Mining Lease relinquishment process.

6.3.6 Action Summary

The engagement program outlined in Table 6-1 summarises the strategies and mechanisms that will be implemented following Project approval.

Table 6-1: Community and Stakeholder Engagement Key Action Summary

Stakeholders	Pre-construction	Construction	Operations (Years 1-3)
All	Establish detailed plan and program for community and stakeholder engagement.	Implement community and stakeholder engagement program for construction. Review engagement program and update for operations.	Implement community and stakeholder engagement program for operations. Review engagement program in Year 3 and update for Years 6-10.
IRC	Meetings to discuss SIA SIMP, housing strategies and other items identified in Section 6.6.3	Regular meetings. Liaison regarding housing availability and other items identified in Section 6.6.3	Regular meetings.
Landholders	As agreed with individual landholders.		
Indigenous stakeholders	Consult with BBAC regarding Indigenous participation strategies.	Implement Indigenous participation strategies	Implement Indigenous participation strategies and Training Partnership

Stakeholders	Pre-construction	Construction	Operations (Years 1-3)
Local communities	Community workshops CRG Charter development and recruitment strategy Establish Project communication lines and website Develop Complaints Management Process	Project hotline, email, website and social media Regular project updates Annual Project info / drop in sessions CRG Meetings Moranbah from 2019 and Dysart/Middlemount from 2020	
Businesses and Industry groups	Establish ICN Gateway portal Pre-construction business briefings	Participation in Regional Industry Network (RIN) Forums Pre-operation business briefings, and potentially tender readiness workshops	Regular engagement with suppliers (see Section 6.7.3) Participation in CRGs
DSDMIP and DET	SIA CARG presentation Liaison regarding businesses register and skills analysis	Partnerships to facilitate access to business capacity building	Partnerships to facilitate skills analysis and training responses
Queensland Health and local health services	SIA CARG presentation	Participation in CRGs Liaise as agreed to monitor service usage	Advanced notice of in-migrating personnel and families Participation in CRGs
Police and Emergency Services	Protocol development Seek participation on CRG	Site orientation Participation in CRGs Liaise as agreed to implement protocols and monitor service usage	Protocol review meetings Site orientations Liaise as agreed to implement protocols and monitor service usage
All local schools and Department of Education	Advice on any construction families settling locally	Participation in CRGs	Advance notice of in-migrating operations workforce and expected number of new families

6.4 Workforce Management Strategy

This strategy includes:

- objectives and a summary of key impact areas addressed;
- a recruitment strategy;
- a framework for development of a training and development strategy;
- strategies to support the wellbeing of Project personnel; and
- the framework for a Code of Conduct and personnel on-boarding program.

6.4.1 Objectives

The objectives of this strategy are to:

- ensure equitable access to Project employment for local residents, women and Indigenous people;
- employ and develop a skilled workforce which includes local residents and people who would like to move to local towns;

- promote a holistic approach to supporting workforce health and wellbeing;
- support workforce participation in local community life; and
- minimise the potential for antisocial or disruptive workforce behaviour in local communities.

6.4.2 Impact areas

Construction

Social impacts and benefits in the construction that will be addressed by the Workforce Management Strategy include:

- local access to Project jobs;
- participation of local, regional and Indigenous businesses in Project construction; and
- a temporary increase in non-local workers, based at local WAVs but also accessing local services, shops and venues.

Operations

During its operation, the Project is expected to contribute to:

- increased long-term employment and training options in the Isaac LGA;
- increased employment equity for women, Indigenous people and young people;
- opportunities for local, regional and Indigenous businesses to supply the Project, with potential for increased indirect employment; and
- workforce health and wellbeing.

6.4.3 Recruitment

The Project's recruitment strategy will ensure equitable access to employment opportunities. Pembroke's commitment is to prioritise recruitment of:

- Isaac LGA residents, including those who would live locally and those who would drive in and drive out at the end of their shifts;
- people from other regions who would like to move to local towns; and
- people from areas of high unemployment and socio-economic disadvantage, as advised by the OCG.

Recruitment will initially focus on Moranbah, Dysart, Middlemount and Nebo residents. This will not preclude people in other Isaac LGA towns applying for jobs, however fatigue management requirements will constrain the ability of people from other towns to commute daily. Pembroke will investigate and implement best industry practices with respect to DIDO personnel, including safe post-roster driving times and the potential for shared driving arrangements, to support employment of Isaac and Mackay LGA residents who live outside a safe daily driving distance.

The Project anticipates achieving 20% female employment from the commencement of operations, and will work with BBAC to achieve agreed Indigenous employment goals.

The recruitment strategy for construction and the start-up of operations is summarised in Table 6.2.

Table 6-2: Recruitment strategy

Desired Outcomes	Action	Timing
Project construction workforce includes Isaac LGA, MIW Region and Central Queensland residents	<ul style="list-style-type: none"> Establish a network for promotion of contracting and employment opportunities, including ICN, BBAC, Black Business Finder, RIN, local schools, Mackay TAFE, CQU, and Mackay and Rockhampton-based recruitment and employment support agencies. Brief businesses and prospective applicants in Moranbah, Mackay and Rockhampton for to learn about project opportunities and register for contact. Provide advance notice of the construction schedule to local and regional businesses. 	Prior to commencement of construction
	<ul style="list-style-type: none"> Articulate Project commitments to construction management and major works package contracts, including: <ul style="list-style-type: none"> maximise the involvement of people and companies based in Central Queensland and the MIW Region; making Indigenous businesses and job seekers aware of opportunities and encouraged to apply; and require Principal Contractors to report on local employment statistics. 	As part of construction contracting process
Maximise local employment in Project operations, including a focus on women and Indigenous people	<ul style="list-style-type: none"> Develop a recruitment policy including goals for local employment, attraction of 'new local' personnel, female participation and Indigenous participation. Develop detailed processes for recruitment, including culturally sensitive and gender-neutral recruitment processes. Promote employment opportunities widely through: <ul style="list-style-type: none"> community and stakeholder engagement; the Project's recruitment contact network; Pembroke and major contractors' websites; BBAC, QRC and RIN networks; and employment agencies (including Mackay and Rockhampton). 	Prior to commencing operations
	<ul style="list-style-type: none"> Advertise all jobs within the Isaac LGA. Publish and promote Pembroke's workplace diversity policy. Undertake initial screening of local applicants, based on merit and fit with requirements and commence selection. Initiate hiring and on-boarding process, including identification of any housing and childcare needs. 	Prior to commencing operations
Recruitment of workers from other regions to live in local towns	<ul style="list-style-type: none"> Advertise all jobs within the Mackay and other regions as advised by the OCG, including promotion of Pembroke's policies on living locally. Publish 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. Initiate hiring and on-boarding process, including identification of personnel who will settle locally and any housing, school enrolment and/or childcare needs. Initiate a welcoming and community integration process for new local employees and families. 	Prior to commencing operations

6.4.4

6.4.5 Training and Workforce Development

Construction

As part of the procurement and contracting process, principal and major contractors will be required to document their proposed training strategies for the construction phase. This will form a key input to the tender evaluation tender process. During the construction period, construction managers will be required to reports to Pembroke on the delivery and outcomes of training strategies.

Operations

During the construction phase the Project will work with key stakeholders to develop a detailed Training and Workforce Development Plan for operations. Planning will commence at least 12 months prior to commencement of operations and include:

- analysis of requirements by occupational and skills groups, the number of positions required in each group and staging of the workforce ramp-up;
- articulating measurable outcomes for a skilled, safe and diverse workforce;
- consultation with Jobs Queensland, Department of Education and Training (State), Department of Employment (Commonwealth) and QRC regarding skills gaps and labour availability;
- identification of Queensland Government training initiatives which address mining industry skills shortages; and
- establishing partnerships with key stakeholders to deliver skills and competency training programs, potentially with:
 - the DSDIP's Regional Economic development team, Jobs Queensland and/or DATSIP;
 - Registered Training Organisations in the Isaac and Mackay regions;
 - the Industry Capability Network (ICN);
 - BBAC's proposed training centre;
 - the Regional Industry Network (Mackay);
 - Mackay Region Chamber of Commerce;
 - TAFE Queensland; and
 - Moranbah and Dysart State High Schools.

Training programs will include a focus on young people (16 – 25 years) and may include cadetships, apprenticeships, traineeships and identification of tertiary pathways. The Training and Workforce Development Strategy will be initiated twelve months prior to the commencement of operations, and implemented throughout the life of the Project. A range of local and regional training organisations are available to support increased training and capacity development initiatives, including local businesses and community and government-led training facilities.

The Project will maintain a particular focus on training and employing local young people. In addition to recruitment of suitably qualified young people across a range of occupational groups, the Project will offer apprenticeships and traineeships (initiating four of each during the first two years of operations, subject to renewal for subsequent years) and mentoring to support local young people in Project employment. The Project will also investigate the feasibility of creating a local training bond for young people – incentivising the pathway from training in regional centres, with a commitment to return for the Project’s operations phase.

6.4.6 Indigenous training and employment

Pembroke aims to ensure that Indigenous people benefit from the development and operation of the Project, and has placed a high priority on Indigenous participation in Project employment, training and supply. Both direct employment (through the Project) and indirect employment (through Indigenous businesses) will be targeted.

Indigenous stakeholders include:

- BBAC and Barada Barna community members across Queensland;
- Indigenous people living, working or running businesses in the Isaac LGA, MIW region and Central Queensland;
- Indigenous training and employment organisations; and
- Government officers responsible for policy, planning and programs which are specific to Indigenous people.

In accordance with Pembroke’s Indigenous Land Use Agreement (ILUA) with the BBAC, Pembroke will develop a participation policy statement, an Indigenous employment strategy, and an organisational mandate for their implementation. This will include the desired outcomes and actions outlined in Table 6-3. Consultation with the BBAC and DATSIP during the project’s pre-construction phase will finalise and initiate implementation of the indigenous participation strategies for employment, training and business.

Table 6-3: Draft Indigenous Participation Strategy

Desired Outcomes	Action	Timing
Respect for Traditional ownership of Project land	The Project will acknowledge (on its gate signage, and/or as agreed) that it is located in Barada Barna country. The text for this acknowledgement will be agreed with the BBAC. The Project will also ensure that all staff undertake cultural awareness training, organised in liaison with BBAC.	At commencement of construction
Barada Barna people and other Indigenous community members are kept updated about the Project and their opportunities for involvement.	In accordance with the ILUA, Pembroke will provide BBAC with update on Project status, cultural heritage management, training, employment and business opportunities.	Prior to commencement of construction and operation
	Pembroke will maintain a stakeholder register which includes Indigenous community members, organisations and businesses, and ensure stakeholders receive the Project’s regular communications (e.g. newsletters and emails about website updates).	
Indigenous businesses are part of the construction supply chain.	Principal and major contractors will be required to ensure Indigenous business have full, fair and reasonable opportunity to participate in the supply chain. The Project will facilitate liaison between the Principal Contractor and stakeholders who can support Indigenous business capacity building as required.	Prior to commencement of construction

Desired Outcomes	Action	Timing
Indigenous training opportunities at Olive Downs.	Pembroke will provide apprenticeship and traineeship opportunities for Indigenous young people living in Central Queensland. Pembroke will consult BBAC and Indigenous training organisations in the Mackay and Central Queensland regions to identify potential programs to create tertiary pathways for Indigenous students.	During operations
Support for BBAC initiatives	Pembroke is providing financial contributions to BBAC during the Project's operating life to support Barada Barna community initiatives, in accordance with the ILUA.	During operations
Indigenous employment	Pembroke will support employment of Indigenous personnel in accordance with the ILUA.	During operations

6.4.7 Supporting parents

The Project will notify childcare services (long day care, out of school hours care and family day care services listed in the SIA) to advise of the workforce ramp-up.

During recruitment for operations, the Project will consult with all recruits when they are offered employment to identify any childcare needs, and refer them to local services.

During the construction phase, and as operational workforce numbers are refined, Pembroke will assess childcare capacity in Moranbah, Dysart, Nebo and Middlemount. The results of this assessment will be discussed with IRC and the Department of Communities, Child Safety and Disability Services (DCCSDD), with ongoing engagement potentially required to develop collaborative responses if childcare capacity is not adequate or appropriate to Project demand.

Staff may have difficulty accessing childcare which enables them to work overnight shifts. If necessary, Pembroke will collaborate with IRC, other mining companies and DCCSDS to identify and support possible partnership solutions. These may include registered and supported 'shared care' options involving employee families, or overnight family or centre-based care options.

6.4.8 Healthy workplace

Pembroke is committed to workforce wellbeing. Principles underlying this include:

- a focus on local employment which enables residents to enjoy the comforts of their homes and communities;
- full compliance 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 the Queensland Government; and
- establishing a workplace which supports physical and mental health.

Construction

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

Operations

The Project's management strategies and policies for operations will be developed in detail during the construction phase. Planning for a healthy workplace will include:

- establishing a healthy workforce policy;
- developing an understanding of workplace health risks and protective factors, and implementation of evidence-based programs to mitigate risks;
- developing 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;
- development of a contract with local doctors to provide workplace health services e.g. Coal Board medicals, immunisation, health promotion programs and access to a GP for employees living in WAVs;
- encouraging the participation of Queensland Health staff in delivery of workforce health promotion strategies addressing physical activity, healthy eating, mental health and reduced smoking, alcohol and other drug use;
- employing staff with paramedical or nursing qualifications to manage minor health issues on site, and develop health and wellbeing programs focused on physical and mental health;
- promoting use of the Queensland Government's 13 HEALTH (13 43 25 84) confidential phone service which provides health advice, Quitline (137848) and the Alcohol and Drug Information Service (1800 177 822);
- contracting an Employee Assistance Program provider to provide proactive support for mental health and family issues;
- ensuring awareness of domestic and family violence, and how to seek help at the worksite, through the Employee Assistance program or through community services; and
- ensuring staff know that sick leave is available to attend to mental health or domestic violence issues;
- promoting recovery through return to work after illness or injury.

To support health and 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;
- on site health staff's assistance can be sought in relation to health concerns;
- their supervisor or manager should be made aware of any health issues that are hampering their ability to undertake usual duties;
- demands on local services for minor and routine health issues should be minimised; and
- where relevant, prescription drugs, prescriptions and records of chronic health issues should be brought to site for every roster.

Pembroke and its contractors will develop a detailed Fatigue Management Policy and guidance for personnel, which would include management measures to reduce traffic safety risks such as:

- use of buses to transport workers to and from the worksite;
- evaluation of WAV practices which support fatigue management; and
- encouragement of car-pooling arrangements.

6.4.9 Supporting community involvement

Pembroke will support operational personnel to interact with and contribute to their local communities. Actions in this regard may include:

- local residents employed by the Project will be encouraged to invite new local and non-local personnel to participate in community and sporting groups they are involved in;
- Project support for sports events (e.g. touch football) which enable personnel to play with other community members;
- sponsoring an annual 'Volunteer Day' where personnel can nominate to contribute time and labour to a community initiative;
- identification and promotion of opportunities for staff to participate in local sports, social activities and community events; and
- a 'matched giving' program which will enable personnel to donate to local community groups, with donations matched by the company.

6.4.10 Workforce management and on-boarding

As part of pre-construction planning, the Project will develop and implement a Code of Conduct which describes positive behavioural outcomes and prohibits negative behaviours.

The Code of Conduct will apply to all personnel (construction and operation) when they are at work, travelling to and from work, in public places and within WAVs, and will include:

- expected standards of behaviour in public places (e.g. town centres, parks, clubs and hotels);
- respect for local community values, e.g. family friendly public places, inclusive communities and safe streets;
- prohibition of all forms of sexual harassment and assault;
- awareness of domestic violence and responsibilities for prevention;
- prohibition of racist behaviour, racist language and discrimination; and
- safe, legal and courteous driving.

Compliance with the Code of Conduct will be required for all Project personnel. Non-compliance with the Code would risk termination of employment. Workers staying in WAVS will also be bound by facilities' Codes of Conduct, with withdrawal of accommodation the result of non-compliance.

Relationships will be established between Pembroke, key venues and the Moranbah, Dysart, Nebo and Middlemount Police to ensure open communication about workforce behaviour and may include:

- participation in the Moranbah Liquor Industry Action Group;
- liaison with the Dysart and Middlemount Liquor Industry Action Groups;
- sharing information about the Code of Conduct; and
- establishing contacts between local stakeholders and Pembroke with regard to workforce behaviour.

Monitoring of Project workforce behaviour and integration will also be a focus of consultation with CRGs.

6.4.11 Action summary

Table 6-4 summarises the key actions that will be implemented at each Project phase as part of the Project’s Workforce Management Strategy.

Table 6-4: Workforce Management Actions

Strategy	Pre-construction	Construction	Operations (Years 1-3)
Recruitment	Establish recruitment partners network for promotion of employment opportunities. Briefings for local and regional construction companies	Develop recruitment policy, strategy and procedures for operations. Workforce planning and analysis for operations. Consultation with Government agencies and industry networks on skills gaps and training partnerships.	Implement recruitment strategy including recruitment from and to the Isaac region. Advertise all jobs through recruitment network and local media.
Training and Workforce Development	Consult with training providers regarding local needs, capacities and training offers. Develop Training Strategy including Apprenticeship and Traineeship Program.	Initiate training and development partnerships. Implement training strategy in advance of operations phase. Monitor quarterly contractor reports on local employment and diversity.	Implement training and professional development strategy. Monitor employment and workforce diversity statistics quarterly.
Indigenous Training and Employment	Refine Indigenous Participation Strategy in consultation with BBAC. Ensure Indigenous businesses are aware of potential opportunities to supply the construction phase.	Implement Indigenous Participation Strategy. Develop Indigenous Employment Strategy for operational phase.	Implement Indigenous Participation Strategy and Indigenous Employment Strategy, and monitor implementation.
Supporting parents	Notify childcare centres to advise of workforce ramp-up.	Provide register of childcare options and contract details to construction contractors.	Consult personnel staff about childcare needs. If necessary, collaborate with other stakeholders to identify and support childcare solutions.
Healthy workplace	Evaluate WAV providers’ support for workforce wellbeing.	Articulate commitments to a healthy workplace to construction contractors and require personnel education about minimising demands on local services.	Implement Healthy Workplace Strategy and monitor outcomes.

Strategy	Pre-construction	Construction	Operations (Years 1-3)
Supporting community involvement	No action required.	Plan for community involvement initiatives for operations.	Initiate actions to involve new local and non-local personnel in community life.
Workforce Management and On-boarding	Develop Code of Conduct. Develop on-boarding package for construction phase.	Implement on-boarding package for construction phase. Monitor workforce incident reports.	Implement on-boarding package for operations phase. Monitor workforce incident reports.

6.5 Housing and Accommodation Management Strategy

This strategy includes:

- objectives and key impact areas addressed;
- the process for identification of workforce housing needs;
- a strategy to increase the availability of housing for existing local and new local personnel;
- strategies that support employees from other areas to settle locally; and
- use of existing workforce accommodation villages for commuting personnel.

6.5.1 Objectives

The objective of this strategy is to minimise impacts on local housing affordability and access, whilst supporting employees from outside the Isaac LGA to settle locally, by:

- identifying and planning for workforce housing needs;
- working with IRC and State Government partners with a goal to increase the availability of housing for Project personnel;
- facilitating housing options which allow existing local residents to take up Project employment;
- supporting personnel to relocate to local towns; and
- ensuring high quality workforce accommodation is available to non-local personnel.

6.5.2 Impact areas

Impacts to be addressed by this strategy include:

- increased demand for rental accommodation that may affect affordability and security for low income households;
- demand for permanent housing for Project personnel; and
- increased demand for neighbourhood and settlement services associated with the operations phase.

6.5.3 Planning for workforce housing needs

Construction

The majority of construction personnel would be either local (with their own accommodation) or commuting (accommodated in the chosen WAVs). A maximum demand for approximately 30 rental dwellings has been estimated for the first construction period in 2019-2021. The construction contractor would be required to identify whether non-local personnel will be single status or family status as part of their recruitment processes and consider:

- making arrangements for single status personnel to be accommodated in the WAVs;
- prohibiting local rental arrangements for single status personnel;
- liaising with real estate agents who will assist non-local family status personnel to access rental accommodation in Moranbah or Dysart; and
- encouraging family status personnel to live in towns with higher rental vacancy rates.

The Project will monitor the availability of housing in all local towns during the construction phase, and discourage construction workers from renting housing if rental stocks are at a premium (e.g. below 3% rental vacancy rates).

Operations

Operations personnel will include existing local residents, 'new local' recruits, and commuting workers. As part of the recruitment process the Project will:

- identify which local recruits would lose their current housing arrangements and need housing assistance;
- identify which non-local personnel will require rental housing, and the desired dwelling type and number of bedrooms;
- review the Project's housing register (see Section 6.5.4) and its suitability to incoming personnel's needs; and
- facilitate access to available housing options.

6.5.4 Increasing housing availability

Anticipating that approximately 120 new households will need to be housed during the first year of operations, local towns are likely to have some capacity to meet Project personnel's housing needs. Each local town has high rates of unoccupied dwellings, and market demand is likely to see the release of some of these to the rental and/or purchase market. Based on 2016 Census data, if just 10% of the LGA's unoccupied dwellings were made available to the rental market, an additional 217 dwellings would be available, more than doubling the listed rental pool in the four towns (as at October 2017).

However, increases in mining activity and associated increases in local business and services staff saw a rapid decline in housing availability during 2017-2018. If these conditions persist, Project investment may be required to ensure housing is available for Project personnel whilst mitigating the potential for housing cost inflation.

During the pre-approval phase, Pembroke will establish a Housing and Accommodation Working Group with Council to consider workforce accommodation and the scope for the Olive Downs Housing Strategy to be developed during the pre-construction phase. The Housing Strategy is likely to include:

- updating the analysis of housing availability and cost (as provided in Section 4.4);
- updating the assessment of Project housing need (as provided in Section 5.4);
- consulting with IRC, DHPW, local housing agencies and Economic Development Queensland (EDQ) regarding housing availability for the projected numbers of operations personnel and families;
- market sounding to identify private, Council and Government interest in housing development which would address Project needs;
- promoting the Project's operational schedule and workforce ramp-up to local real estate agents and property owners;
- investigating purchase incentives and 'rent to buy' options for its workforce;
- investigation of potential commercial arrangements to lease properties owned by mining companies; and
- identifying the potential need for Project support or investment to increase housing availability, in Moranbah, Dysart, Nebo and Middlemount, as determined.

If the housing strategy outcomes indicate that increased residential development is required, Pembroke will work with IRC during the construction phase to identify appropriate responses, which may include financial investment in development of e.g. Belyando Estate or Bushlark Grove Estate in Moranbah, and/or vacant serviced land in Dysart or Nebo. Housing actions may include contractual arrangements to support private housing development to meet Project needs, or purchase of properties for leasing and/or on-sale to personnel.

Once confirmed, housing which is available on the private market or through any housing pool developed by the Project will be listed on a Project Housing Register and made available to personnel. The register will encompass the Moranbah, Dysart, Middlemount and Nebo, and personnel will be encouraged to consider all towns in choosing their home.

Policies governing housing allocation, head leasing and rental costs and conditions will be developed and implemented during the first year of the Project, then reviewed to ensure suitability for the steady state period up until 2033.

Housing needs and policies will be reviewed in 2030/31 ahead of the planned workforce expansion in 2033, and updated in consultation with IRC.

If monitoring data indicates that the Project is contributing to housing shortages for low to moderate income households, Pembroke will also consider investment in the Isaac Affordable Housing Trust.

6.5.5 Supporting settlement

The Project will promote its 'live local' policy and encourage personnel from outside the Isaac LGA to relocate to local towns. Actions to support this may include:

- maintaining an active register of accommodation which is available to personnel;
- promoting incentives for local settlement to non-local recruits, and explaining the range of housing options (availability, type and cost of dwellings for purchase and rental) in local towns;
- provision of access to housing which is head-leased or owned by the Project to employees at below market rent for a period of 12-24 months;
- providing a one-off incentive payment to assist employees to pay rental bonds, relocate their families and/or purchase housing; and/or
- rental subsidies to encourage personnel to rent in the private market (subject to a commitment to stay at least three years).

Other actions which will support new local employees and families to integrate with local communities include:

- provision of information about livability, services, housing and recreation in the local towns as part of the employment offer;
- partnering with MDSS and DCSG to provide settlement, integration and support services;
- welcome events for employees and families;
- promotion of volunteering opportunities (e.g. Fire and Emergency Services, sporting groups, and community management groups) to personnel and their family members; and
- support for settlement programs offered by local organisations, community events which promote new residents' participation and contributions to local liveability (see Section 6.6.6).

6.5.6 Workforce Accommodation Villages

As described in Section 5.4.4, there is likely to be significant capacity within existing local WAVs to accommodate non-local personnel. Consultation with IRC and commercial discussions with WAV owners will be required, however the Project plans to use one or more of the following WAVs to accommodate non-local personnel during construction and operations:

- Moranbah Accommodation Centre (owned by Morris) which includes a facility in Acacia Street and another in St, Francis Drive, Moranbah;
- Moranbah Village (Civeo) in Acacia Street, Moranbah;
- Grosvenor Village Accommodation (ESS/Spotless) in Colliery Street, Moranbah;
- Moranbah Smart Stays Village (Smart Stays) in Bacon Street, Moranbah;
- Coppabella Village (Civeo) on the Peak Downs Highway, Coppabella; and/or
- Terowie Village (Compass Group) on the Peak Downs Highway, Coppabella/Moorvale.

During the pre-construction phase, Pembroke will

- finalise construction staging and FTE requirements for construction;
- consult with all WAV operators in the Moranbah and Coppabella area to ascertain their likely capacity during 2019-2021;
- consult IRC about the likelihood that approved (but not built) WAVS will be developed in 2018-2019;
- collate WAV information required to evaluate the suitability of workforce accommodation to Project needs
- forecast required capacity to Council and the preferred WAVs;
- Initiate contractual arrangements/head of agreement/MOU with WAV provider(s); and
- keep IRC updated on Pembroke's use of WAVs, including occupancy reports every 6 months during construction.

The Project will invite offers from WAVs in Moranbah and Coppabella to provide accommodation for construction workers and non-local operational personnel. Offers will be evaluated against the following criteria:

- room size and inclusions (e.g. ensuite, WIFI, contemporary fittings and equipment);
- whether workers can be continuously allocated to preferred rooms;
- any provision for family stays;
- onsite laundry and storage provision;
- travel time to site;
- car parking for drive-in drive out workers;
- alignment of check-in and out times with flights arrival and departure times;
- nutritional guidance followed in planning meals, and hours when meals are available; and
- for WAVs more than 10 km from Moranbah, provision of recreation, infrastructure and health and social services.

The Project will monitor personnel satisfaction with WAVs and may adjust its contractual relationships with WAVs accordingly. The choice of accommodation providers for the second construction period will be made prior to construction based on WAV availability, but is likely to include providers in Dysart and Coppabella.

6.5.7 Action summary

Table 6-5 provides a summary of key actions addressing housing and accommodation impacts.

Table 6-5: Housing and accommodation actions

Strategy	Pre-construction	Construction	Operations (Years 1-3)
Planning for workforce housing needs	Contract WAV providers and agree management protocols for workforce health, fatigue management and conduct codes.	Require construction contractor to identify and monitor any workforce housing needs. Consult IRC and EDQ about local housing market capacity.	Identify which existing local and new local personnel will require housing arrangements.
Increasing housing availability	Monitor housing availability Require construction contractors to monitor employees' local housing arrangements.	Promote Project schedule and anticipated housing needs. Consult with IRC, DHPW and EDQ about housing availability and the need to stimulate supply. If required, develop and implement a strategy to increase supply in collaboration with IRC and EDQ.	Identify personnel housing needs and match to supply. Implement agreed strategies to increase housing supply/personnel access to housing. Monitor housing indicators (cost and vacancy rate).
Supporting settlement	Consult with MDSS and DCSG about capability and interest in provision of settlement support.	Develop a housing register for operations. Develop local community profiles for promotion to applicants. Develop housing policies and settlement incentives.	Partner with MDSS and DCSG to provide settlement, integration and support services. Promote and support personnel involvement in volunteering. Implement housing policies and settlement incentives.
Workforce Accommodation Villages	Consult with IRC regarding WAV use. Seek and evaluate tenders for construction workforce accommodation.	Seek and evaluate tenders for operational workforce accommodation.	Monitor personnel numbers in WAVs. Monitor personnel satisfaction with WAVs and take corrective action if required.

6.6 Health and Community Wellbeing Management Strategy

This strategy includes:

- objectives and a summary of the impacts addressed;
- a strategy for personnel access to health services;
- mitigation of demands on schools;
- a strategy for working with co-operation with Police, Ambulance and Fire and Emergency services; and
- a community development and investment strategy focused on strengthening social resources.

6.6.1 Objectives

The objectives of this strategy are to:

- provide a framework for communication with social infrastructure providers and Queensland Government agencies to minimise Project impacts on social infrastructure access;
- maximise alignment and co-operation with local stakeholders on identified Project impact areas; and
- describe the Project's contribution to local health and community wellbeing priorities.

6.6.2 Impact areas

Construction

The Project's construction phase is expected to have the following temporary impacts on social conditions:

- increased demand for local GP and out-patient services; and
- demand on emergency services as part of on-site incident response and management, wide load supervision, and possibly for callouts to WAVs or the Project site.

Operations

During operations, the Project is expected to:

- have a positive impact on local population stability and social capital;
- increase demand and competition for local access to GP services, specialist, allied and community health services;
- increase demand for local school enrolments;
- increase demand for childcare services, and alternative childcare service models; and
- increase demand for neighbourhood and settlement services.

6.6.3 Access to health services

Consultation with local health and emergency service providers during SIA stressed the need for resource projects to provide adequate on-site services to meet the immediate needs of its workforce.

Section 6.4.7 outlines the Project's actions to reduce impacts on health services. During the pre-construction phase, Pembroke will consult with local GPs, the North Queensland Primary Health Network, local hospitals and the Mackay District Health and Hospital Service to:

- establish a foundation for communication about health service access and health promotion;
- ensure health services are aware of the Project's timing, and relevant SIMP strategies; and
- inform Pembroke's' planning for workforce access to health and emergency services and health promotion strategies.

During construction and the first three years of operations, Pembroke will also:

- liaise with Mackay Hospital and Health Services, and Moranbah and Dysart Hospitals to provide advice on workforce numbers, project timeframes, and on-site/ WAV-based service provision; and
- seek participation from Moranbah and Dysart Hospital on CRGs to collectively monitor Project impacts on local health services, including mental health and Alcohol and Other Drug services, services, and identify any additional mitigations required to mitigate impediments to local service access.

In addition, Pembroke will work with local health services to identify opportunities to provide health services and programs which both staff and other community members can benefit. This could include partnerships to increase the availability of e.g. men's health checks, skin cancer checks, breast screening or mental health promotion, and would be identified in liaison with local stakeholders during the first year of operation.

6.6.4 School enrolments

As described in Section 5.5.2, the Project will communicate with local schools and the Department of Education and Training regarding the Project schedule and expected workforce ramp-up.

The Project will monitor demand for school enrolments by requesting personnel to identify their families' needs as part of the employment offer process. Indicative new enrolment numbers will be communicated to the schools on a quarterly basis during the first three years of operation.

6.6.5 Emergency response arrangements

During the pre-construction phase, Pembroke will develop a strategy for co-operation with the Queensland Police, Ambulance and Fire and Emergency Services. This will include, for both construction and the life of the operation:

- liaising with Police, Ambulance, Fire and Emergency Services and Hospital representatives in Moranbah, Dysart, Middlemount and Nebo with respect to workforce numbers, project timeframes, on-site/ WAV-based health service provision and commitments to road safety;
- consultation with the Isaac Local Disaster Management Group;
- ensure selected staff have access to Queensland Mine Rescue Services' open cut emergency response team training, and that trained staff are on site at all times;
- developing an incident management, site contact and call-out protocol with local emergency service providers (Police, Ambulance, Fire and Emergency), in relation to potential incidents occurring both on and off the mine site and at WAVs;
- offering site orientation days for Police, Ambulance, Fire and Emergency services staff;
- developing a protocol and procedure for wide-load escort duties;
- ensuring Fire and Emergency service staff have 24-hour access to personnel and/or keys to open locked gates needed to access surrounding properties;

- seeking participation from Police and emergency service stakeholders on the local CRG, to collectively monitor local impacts on services, and in relation to potential community safety concerns (e.g. road safety, community cohesion, workforce behaviour); and
- reviewing agreed protocols with Police, Ambulance and Fire and Emergency Services annually during construction and the first three years of operation.

The Project will also enable staff who volunteer for the Fire and Emergency and the State Emergency Service to attend call-outs for emergencies during work hours wherever possible.

6.6.6 Community development and investment

Upon Project execution, Pembroke will become a major local employer and a long-term member of the Isaac LGA community.

Project personnel will contribute to population growth and stability, and population increases resulting from the Project will increase demand for community development programs and events, whilst also increasing the availability of people to participate in community activities.

Pembroke embraces its corporate social responsibility to contribute to local communities, and also considers that quality of life is integral to maintaining a highly skilled and productive local workforce.

To maximise its contribution to social resources, Pembroke will establish a Community Development and Investment (CDI) Strategy, to help build social assets and resources to support community resilience and quality of life. The CDI Strategy will be developed in consultation with IRC and potential community partners during the pre-construction phase, and include as outlined below:

- a Community Development Fund; and
- Community Partnerships.

Community Development Fund

The Community Development Fund will be established to enable Pembroke's support for community projects and programs in the Isaac LGA. Priorities to be addressed in the CDI Strategy will be agreed in consultation with the Project's Community Reference Group, and may include:

- community events and activities that promote active and healthy lifestyles, e.g. festivals, fetes and recreational activities;
- health promotion regarding health eating, smoking reduction and alcohol and drug dependence;
- strengthening the local volunteer base e.g. enabling volunteers to gain qualifications relevant to their volunteer work;
- supporting local seniors to remain in their communities;
- cultural diversity and inclusion, e.g. programs to connect culturally diverse communities and individuals;
- initiatives which enable strong, creative and resilient young people e.g. mental health promotion, cultural expression or micro-business support;

- programs which enable vulnerable and marginalised community members to participate in community life, e.g. community transport and community connection programs; and/or
- investment in the Isaac Affordable Housing Trust.

The CDI Strategy's objectives, strategy, funding criteria and governance arrangements will be developed following Project approval. Pembroke will provide funding of \$200,000 per annum (indexed to CPI) for grants to community groups and non-government organisations to promote community resilience and quality of life in Isaac LGA communities, commencing during the second year of Project construction.

Community partnerships

The Project intends to establish an initial two community partnerships to achieve specific priorities.

Indigenous employment: as described in Section 6.4.5, Pembroke is providing financial support to the BBAC, which may be used to support the establishment and/or operation of a Training Centre at Nebo to develop and offer work readiness and certified qualification programs to Indigenous people.

Pembroke will maintain engagement with BBAC and could look to the Training Centre to help offer high quality mining industry-related training programs for Indigenous people, including Pembroke's apprentices and trainees.

Community integration and support services: Pembroke intends to establish partnerships with community development organisations in the Isaac LGA to enable extension of their services to Project personnel and families. Subject to development of partnership agreements during the construction phase, partnerships would be developed with Moranbah and District Support Services Association Inc. and the Dysart Community Support Group Inc. The outcomes of these partnerships may include:

- settlement programs (welcome events, community information packs and support for new residents to establish community networks);
- community health programs;
- mental health programs;
- neighbourhood development programs (e.g. playgroups, community gardens and sheds, and interest groups); and
- family and youth support programs.

In addition, the need for social housing will be monitored, and consideration given to partnership with the Isaac Affordable Housing Trust and/or Emergency and Long Term Accommodation Moranbah Inc. if a need for social housing emerges as a result of Project impacts on housing availability.

6.6.7 Action Summary

Table 6-6 summarises the key actions to be taken in respect to health and community wellbeing.

Table 6-6: Health and Community Wellbeing Actions

Strategy	Pre-construction	Construction	Operations (Years 1-3)
Access to health services	Consult health services providers (see Section 6.6.3) regarding potential workforce demand and collaborative responses Advise local hospitals GPs and dentists of workforce ramp-up Consult IRC regarding the adequacy of essential services such as refuse facilities, waste management, and water and waste water infrastructure	Initiate contract with local doctors for workplace-related medical appointments for operation personnel Promote use of 13 HEALTH	Advise local hospitals and GPs of workforce ramp-up Employ qualified staff with to manage minor health issues and promote a healthy workplace Contract an EAP provider Promote a healthy workplace and culture Monitor demands on health services with Queensland Health agencies Co-operate in initiatives to support the health of Project personnel and other community members.
School enrolments	Communicate with Moranbah schools and the Department of Education and Training regarding the Project schedule	Communicate with all local schools and the Department of Education and Training regarding the Project schedule and expected workforce ramp-up	Monitor demand for school enrolments and regularly communicate with schools
Emergency response arrangements	Liaise with Queensland Police, Ambulance and fire and Emergency Services to advise on workforce ramp-up, accommodation arrangements and code of conduct	Site orientation and contacts Incident management, wide load and call-out protocols	Annual review of protocols Site orientations Ensure access to property access gates on Project land
Community development and investment	Draft Community Development and Investment Strategy and consult with IRC Consult with potential partner agencies for provision of community integration and support services	Finalise Community Development and Investment Strategy Establish and implement Community Investment Fund Develop partnership agreements with BBAC, MDSS and DCSG	Implement Community Partnerships Implement Community Development Fund

6.7 Local Business and Industry Content Management Strategy

The Project will provide opportunities for local, regional and Indigenous businesses to participate in its supply chain, contributing to business sustainability and growth, indirect employment and economic development in the Isaac LGA and MIW Region.

The Queensland Resources and Energy Sector Code of Practice for Local Content 2013 (the Code) provides the framework for involving local and regional businesses in project supply chains. Under the Code, resource 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 improvements to the Code.

The Project will comply with the Code of Practice, and will also address the principles of the Australian Industry Participation Framework (AIPF), including submission of an Australian Industry Participation Plan (AIPP). Importantly, the AIPF and the Code's definition of 'Local Industry' refers to either an Australian or New Zealand business. However, the QRC guideline and practice guidance¹³¹ acknowledge that companies may choose to adopt a more regionally focused definition to align with their local content strategies.

The Project's Local Business and Industry Content Management Strategy has been designed to reflect the requirements of the QRC Code of Practice for Local Content (2013). It includes:

- a summary of the Code's Policy Principles, to which the Project will adhere;
- a summary of the plan's objectives;
- a summary of actions and commitments by the Project;
- a program for implementation; and
- a monitoring and reporting framework, in line with the Code.

6.7.1 Policy principles

Pembroke is committed to providing full, fair and reasonable opportunity for capable local businesses to compete and participate in the Project's supply chains. As defined by the Code of Practice for Local Content, principles for 'full', 'fair', and 'reasonable' include:

- Full opportunity: Local industry has the same opportunity as other potential suppliers to participate in all aspects of a project from design through to completion and ongoing maintenance;
- Fair opportunity: Local industry is provided the same opportunity as other potential suppliers to compete for investment projects and other market-based contracts on an equal and transparent basis; and
- Reasonable opportunity: Tenders are free from any unreasonable specifications or requirements that could rule out local industry, and are structured in such a way as to provide local industry with the opportunity to participate.

For the purposes of the Code of Practice, local industry is defined as either an Australian or New Zealand business. For the purposes of the Project's Local Content Strategy, Pembroke will establish, focus and report on tiered levels for supplier participation at the following levels:

- Local community: referring to spend within the Isaac LGA;
- Region: referring to spend in the Mackay LGA and Mackay-Isaac-Whitsunday region;
- State: referring to spend within the State of Queensland; and
- National / ANZ: referring to spend within Australia and New Zealand.

¹³¹ Queensland Resources Council. 2013a. Queensland Resources Council. 2013b.

6.7.2 Objectives

The objectives of this strategy include:

- maximise local awareness of the Project's supply opportunities and build relationships with local businesses;
- provide the framework for full, fair, and reasonable opportunity for local, regional and Indigenous businesses to participate in the supply chain;
- achieve and maximise Indigenous business participation; and
- align major contracts and contractors to the Project's Local Content Strategy.

A Local Content Policy and Local Content Strategy will be developed during the pre-construction phase to ensure both construction and operation maximise opportunities for local, regional and Indigenous businesses, and published on Pembroke's website. The Local Content Strategy will be developed in consultation with IRC, and be compliant with the QRC's Code of Practice for Local Content, including reporting requirements.

6.7.3 Engagement and capacity building

The Industry Capability Network (ICN) is an independent organisation financially supported by the Australian, New Zealand, State and Territory governments, started more than 30 years ago to connect Australian and New Zealand companies to project opportunities. Following Project approval, Pembroke will establish an ICN Gateway Portal for communication about the Project's supply opportunities and enable businesses to register as suppliers. This is one of a range of actions which will be undertaken to ensure local and regional suppliers are aware of Project opportunities, as discussed in Section 6.7.4

During the pre-construction phase, Pembroke will liaise with the following stakeholders to support supplier market analysis:

- DSDMIP;
- Resource Industry Network (RIN);
- Black Business Finder;
- Indigenous Business Australia (IBA);
- Barada Barna Aboriginal Corporation (BBAC);
- Queensland Industry Capability Network (ICN);
- Moranbah and Dysart High Schools;
- Moranbah Traders Association; and
- Dysart Community Support Group.

As part of its pre-construction and pre-operational planning, Pembroke will consult with Regional Economic Development (DSDMIP) and IRC to quantify and locate specific business capacities of relevance to the Project's supply chain.

Local business briefings will be held to promote Project supply opportunities ahead of the Project's construction phase. This will include businesses that are oriented towards the construction and mining industries as well as businesses (e.g. hospitality and retail) which will need to develop greater capacity to meet growing population needs. Briefing sessions will invite registrations for follow-up workshops, lay a foundation for developing relationships with local suppliers, and facilitate networking between local businesses.

Pembroke will seek co-operation with the Resource Industry Network (RIN), local traders' groups and other stakeholders identified in consultation with DSDIP's Regional Economic Development team, to convene follow-up workshops to communicate tendering requirements and promote access to capability development programs where required.

Based on the supplier market analysis, registrations through the ICN Gateway Portal and registration through workshops, a Local and Regional Businesses Register will be developed, and cross referenced to work packages, services and goods supply categories for use by procurement managers for both construction and operation.

Tendering requirements for Principal and major contractors will include the requirement to provide a Local Business and Industry Participation Plan for the construction phase. Following the appointment of a Principal Contractor for construction, the Project and the Principal Contractor will cooperate with DSDMIP, RIN, ICN and local Traders Associations to engage with local and regional suppliers about procurement opportunities and requirements. This will include:

- developing and implementing a supplier prequalification process;
- inviting targeted suppliers to pre-qualify upon registering through the ICN;
- encouraging pre-qualified suppliers to establish joint ventures and collaborate with other suppliers when responding to tenders;
- promoting local and regional suppliers to major tenderers;
- ensuring tenderers are aware of the range of support services available to them, and contact people within relevant agencies and networks;
- providing access to personnel who can assist tenderers to understand pre-qualification and tender process requirements; and
- providing formal feedback too unsuccessful local and Indigenous tenderers.

This information and engagement strategy will be repeated three months prior to commencement of procurement for operations. Engagement during operations will also include:

- tendering preparation workshops to ensure suppliers can prepare and plan ahead of time;
- a dedicated corporate resource to coordinate Project supplier inputs to Local Content reports, build their capacity, and meet QRC and external report requirements; and
- annual business and industry briefings during the first three years of operation.

6.7.4 Procurement strategies

Actions as part of the Local Content Strategy for construction and operation will include:

- maintaining the Project's Local, Regional and Indigenous Businesses Register for internal use and distribution to all major contractors;
- embedding local content requirements into contract schedules for major tenders, and requiring Principal and major contractors to report on their local content performance on a quarterly basis;
- liaison with Regional Economic Development (DSDMIP) to identify and potentially co-deliver local supplier development activities;
- promoting tendering opportunities via the Businesses Register and Pembroke's website, with a link to company procurement procedures;
- sending expression of interest alerts to the ICN Gateway Resource Industry Network, Moranbah Traders, Black Business Finder, Dysart Community Support Group, Nebo Community Development Group and Middlemount Community representatives;
- enabling approved staff to enact low value transactions with local businesses (up to \$10,000) by credit card rather than through complex tendering processes;
- development of procedures which:
 - evaluate competitive tenders inclusive of environment, health, safety, life cycle costs, quality, delivery, price, service and local content;
 - give preference to contractors and sub-contractors who optimise local content where comparative bids are assessed as commercially and technically equivalent;
 - ensure that local capabilities are considered during development of work scopes so as to enhance local content without impacting Project schedules or costs;
 - where possible, break large work packages into smaller components to enable smaller companies to tender;
 - minimise the length of time small businesses need to wait for payment of their invoices.
- requiring Principal and major contractors to commit to community support initiatives e.g. sponsorships, in kind support and/or community partnerships;
- tracking procurement expenditure in the Isaac LGA, Mackay LGA and other defined Queensland regions; and
- completing a Code Industry Report (CIR) annually to assist the QRC in completing the annual Code Effectiveness Report.

The Project will review its Local Content Strategy outcomes and procurement policies in the six months prior to commencement of operations to ensure their ongoing effectiveness.

6.7.5 Indigenous business participation

The Project will ensure that Indigenous businesses have full, fair and reasonable opportunities to supply goods and services to the Project. Indigenous businesses located in the MIW Region and Central Queensland will be:

- identified through Black Business Finder, Indigenous stakeholder networks and DATSIP;
- encouraged to provide information for the Project's Business Register; and
- invited to business briefing sessions about supply opportunities, pre-qualification processes and tendering capability ahead of Project construction and operation.

The Project will facilitate and support delivery of a tender readiness program for Indigenous businesses in partnership with QRC and Government agencies, three to six months prior to commencement of procurement for the construction phase, and again in readiness for procurement for operations.

6.7.6 QRC planning and reporting

The Project will produce an annual Local Content Report and submit this to QRC. All suppliers will be provided with a planning and reporting template to engage them on the mandatory requirements associated with Pembroke's Local Content Plan and the annual report to QRC. These requirements include:

- Forecasting and planning:
 - *Procurement forecasting*: a categorical list of the goods and services subcontracted to the market, including how opportunities will be promoted to local, regional and Indigenous suppliers, and/or the rationale for proposing a subcontractor without going to market;
 - *Employment forecasting*: a list of part-time, full-time and graduate and apprentice positions will be created. Forecasting will include how these employment opportunities will be promoted to local and Indigenous suppliers;
 - *Local content actions*: identify what actions the tenderer will undertake to support delivery of Pembroke Local Content Strategy;
- Reporting:
 - *Procurement expenditure*: reported by supplier postcode, ICN Gateway preferred supplier status, and Indigenous business status;
 - *Employment*: list of part-time, full-time and graduate and apprentice positions created and filled, including position, residential postcode, gender, and Indigenous employment indicators;
 - *Workforce training*: workforce training rates, including type and level of training, participant diversity and completion rates; and
 - *Local industry participation*: promotion of opportunities, invitations for pre-qualification, rates of supplier registration, feedback and tendering using the ICN Gateway portal.

Based on company and supply chain inputs, Pembroke will submit an annual report to Queensland Resources Council in accordance with Code Annual Report templates.

6.7.7 Action Summary

Table 6-7 summarises actions to be undertaken as part of the Local Business and Industry Content Management Strategy.

Table 6-7: Local Business and Industry Content Actions

Strategy	Pre-construction	Construction	Operations (Years 1-3)
Engagement and capacity building	Establish an ICN Gateway Portal Co-operation with key stakeholders to conduct supplier market analysis Develop Local, Regional and Indigenous Businesses Register Develop Local Content Strategy Business briefings	Articulate Project commitments to local content in construction contracts Require Principal and major contractors to implement and monitor a Local Business and Industry Participation Plan Conduct business briefings and promote access to capacity building programs	Tendering preparation workshops Annual business and industry briefings
Procurement strategies	Update Local, Regional and Indigenous Businesses Register Promote supply opportunities through established network Develop Local Content Strategy and procurement procedures	Articulate Local Content Strategy requirements to contractors Track and report local expenditure in line with QRC Code of Practice requirements	Review and implement Local Content Strategy Track and report local expenditure in line with QRC Code of Practice requirements Review Local Content Strategy and evaluate outcomes in Year 3
Indigenous business participation	Identify Indigenous businesses and establish contacts Facilitate and support delivery of a tender readiness program for Indigenous businesses	Facilitate and support delivery of a tender readiness program for Indigenous businesses in preparation for operations	Review and update Indigenous businesses register Implement Local Content Strategy including Indigenous business participation actions

6.8 Monitoring and reporting

The Project will monitor the SIMP’s performance and effectiveness to ensure that commitments are delivered and management objectives are achieved. Monitoring will be initiated during the construction period for relevant actions.

6.8.1 Monitoring data

The primary data sources for performance monitoring are identified in Table 6-8. In summary, they include:

- internal records, e.g.:
 - workforce composition, health and safety statistics and training participation rates;
 - community and stakeholder management records; and
 - social investment data;

- consultation on social conditions, e.g.:
 - community values and perceptions;
 - community safety, and Police and emergency services demand; and
 - demand for social infrastructure.

Data collection, monitoring and reporting will include consideration of locally-specific impacts and benefits, e.g. how many dwellings were required in each town to house project workers and families, and employees' towns of origin and settlement. This will enable the Project and stakeholders to ensure management strategies respond to the distribution of impacts.

The monitoring framework includes key social indicators which may be affected by the Project. They include:

- QGSO's annual population estimates and population growth projections as available;
- housing indicators including rental dwellings available, cost trends and vacancy rates;
- labour force participation rates (general, female and Indigenous);
- school enrolment trends in Moranbah, Dysart, Nebo and Middlemount; and
- incidence of workers' mental health issues (including alcohol and drug issues), monitored in co-operation with local mental health service providers.

These indicators, along with ABS data on employment levels and population numbers as available on a five yearly basis, will be analysed and updated as part of the annual SIMP review (see Section 6.2).

6.8.2 Reporting process

The Project's Internal Coordination Committee will track SIMP implementation and review key performance measures quarterly, to facilitate continual improvement of strategies and practices.

Data on social indicators will be tracked and reported to the CRG as available, including quarterly tracking of housing indicators. Monitoring data on delivery of the SIMP will be reported at each CRG meeting, and a report against performance measures and social indicators will be presented to IRC and the CRGs annually.

6.8.3 Monitoring program

The monitoring program provided in Table 6-8 outlines the SIMP's objectives, desired outcomes, performance measures, data sources and the timeframe for monitoring actions. The monitoring program will be reviewed prior to operations, and then implemented for operations, and revised if necessary during Year 3 of operations.

Table 6-8: Monitoring Program

Objective	Desired outcomes	Performance Measure	Data Source	Timing
Community and Stakeholder Engagement				
Conduct stakeholder identification and provide a clear program for engaging stakeholders.	Community members and stakeholders are aware of engagement opportunities and how to contact the Project, through regular Project communications.	A Community and Stakeholder Engagement Plan is developed and published on the Project's website. The Project has an actively maintained stakeholder database.	Community and Stakeholder Engagement Plan metrics. Stakeholder records (e.g. as maintained through Consultation Manager software).	Pre-construction and ongoing. Review quarterly to Dec 2023.
Provide a range of opportunities for community and stakeholder engagement.	Stakeholders are well informed, active participants in Project engagement activities.	The engagement program involves community members in all local towns and stakeholders at local and regional levels, across all stakeholder groups identified in Section 3.2.	Stakeholder records. Stakeholder feedback.	Commence in construction. Review quarterly to Dec 2023.
Ensure Project planning and delivery are informed by stakeholder views.	Stakeholder input is considered in Project management processes.	Community and local stakeholders are involved in SIMP implementation and monitoring.	IRC meeting records. CRG meeting records.	Commence post-approval. Review six monthly to 2023.
Engagement supports adaptive management of social impacts.	Stakeholder input is reflected in SIMP.	Emerging issues are identified and addressed in engagement mechanisms or SIMP revision.	Stakeholder records. CRG meetings.	Commence in 2020. Review quarterly to 2023.
Develop strong and co-operative relationships with local communities and stakeholders.	Continuity and endurance of Project/ stakeholder relationships, supporting a strong social licence.	Number of partnerships, protocols and joint initiatives established with stakeholders. Active participation in local forums.	Project documentation. Participation statistics – employment, supply and engagement.	Pre-construction and ongoing. Review annually, ongoing.
Workforce Management				
Ensure equitable access to Project employment for local residents, women and Indigenous people.	The Project optimises employment of existing local residents, apprentices and trainees.	Number and percentage of construction employees from Isaac LGA. Number and percentage of operational personnel from Isaac LGA.	Human Resources Records. Census 2021 data (workforce participation rate, employment rate). Employment rates. (Department of Employment)	Implement in construction phase. Monitor quarterly to 2023.
	The Project provides equal employment opportunities for the female workforce and the indigenous workforce.	Number and percentage of female employees. Number of Indigenous employees.	Project Workforce Statistics. Census 2021 data (workforce participation).	Implement in operations phase. Monitor quarterly to 2025 (except for Census 2021 data).
	Indigenous young people have training opportunities at the Project.	Number of Indigenous trainees and apprentices by year to 2025.	Human Resources Records.	Implement in operations phase. Monitor annually to 2025.

Objective	Desired outcomes	Performance Measure	Data Source	Timing
Employ and develop a skilled workforce which includes local residents and people who would like to move to local towns, and includes a focus on young people (16-25 years).	The Project works with its partners to ensure relevant training and skills development programs are available to local and regional residents and Indigenous people.	Number of Isaac LGA and Mackay LGA residents completing training programs initiated by Project-Government-community partnerships. Number of Indigenous people employed by the Project	Registered Training Organisation records. Human Resources Records	Implement in Construction Phase. Monitor quarterly to 2023.
	The Project's workforce has access to training and skills development which supports job satisfaction and career progression.	Number of training participants and qualifications earned by personnel each year.	Human Resources Records.	Implement in operations phase. Monitor quarterly to 2023.
	Apprenticeships and traineeships initiated during the first two years of operations, subject to renewal for subsequent years.	Number of apprenticeships and traineeships initiated. Number of people 16 – 25 years employed by the Project	Human Resources Records.	Implement in operations phase. Monitor quarterly to 2023
	Project personnel are supported to settle in local towns.	Number of 'new local' personnel and family members moving in to each local town.	Human Resources Records. Population size and growth projections for Isaac LGA.	Implement in operations phase. Monitor quarterly to 2023.
Support workforce participation in local community life	Representation from Project staff in local volunteering and community events	Number of company representatives participating in volunteering and community events.	Human Resources Records and event records.	Implement in operations phase. Monitor annually to 2023.
Promote a holistic approach to supporting workforce health and wellbeing, including mental health	Strong workforce uptake and positive outcomes achieved through the wellbeing program including availability of workforce-based health promotion programs.	Number of sick leave days. Health promotion activities reported annually in the SIMP review.	Program participation rates and key outcomes. Monitoring of workforce and associated families demand on health and mental health services in association with MDSS and Queensland Health	Implement in operations phase. Monitor quarterly to 2023.
Minimise potential for antisocial or disruptive workforce behaviour in local communities.	No community complaints attributed to workforce behaviour and/or conduct.	Number of complaints regarding workforce behaviour. Queensland Police feedback on effectiveness of workforce management.	Complaint Records. Queensland Police Service.	Implement in Construction Phase and ongoing. Monitor monthly to 2023.
Housing and Accommodation Management				
Identify and plan for workforce housing needs.	Personnel needs for housing are considered in Project planning and communicated to relevant stakeholders.	Clear shared understanding of Project's likely rental housing demands. Agreed plan for collaboration between IRC, EDQ, the Project and other housing stakeholders.	Human Resources Records Stakeholder feedback on Project communication.	Implement prior to operations phase. Monitor quarterly to 2023.

Objective	Desired outcomes	Performance Measure	Data Source	Timing
Ensure high quality workforce accommodation is available to non-local personnel.	Non-local personnel are accommodated in quality WAVs.	Personnel satisfaction with WAV quality and management procedures.	WAV resident survey.	Implement in construction phase and ongoing. Monitor six monthly to 2023.
Avoid inflation of rental costs by working with IRC and Queensland Government partners to increase the availability of housing for Project personnel.	Adequate housing is available to personnel without significant inflation of rental costs in local towns or displacement of local residents.	Number of Project-related households renting and purchasing housing in local towns.	Project records	Implement prior to operations phase. Monitor quarterly to 2023.
		Increased availability of rental housing (compared to October 2017 levels).	SQM Research or Corelogic data Census 2021 data (occupied dwellings)	
		Minimal (<10%) increases in rental costs in Moranbah or Dysart subsequent to in-migration peaks.	SQM Research or Corelogic data Real estate agent feedback	
		No increase in the number of people seeking social housing attributable to the Project's housing impacts.	Feedback from ELAM and IAHT	
Health and Community Wellbeing Management				
Provide a framework for communication with community and government agencies to minimise Project impacts on social infrastructure access.	Agencies are regularly advised of anticipated population increases resulting from the Project, and aware of likely service demand relative to existing demand levels.	Project-induced population (residential and non-residential) increases as a percentage of the Isaac LGA population are monitored and communicated to stakeholders.	Project employment records. QGSO population estimates for ERP and FTE population. Feedback from Queensland Health and QPS on service demand.	Implement in construction phase and ongoing. Review quarterly to 2023.
Maximise alignment and co-operation with local stakeholders on identified Project impact areas.	No negative impact on community health, safety or social infrastructure access Impacts on local service capacity are identified and addressed in collaboration with key stakeholders.	Service provider feedback on demand for local health, family, community support services	CRGs and consultation with schools and Queensland Health services.	Implement in Construction Phase and ongoing. Monitor quarterly to 2023.
		Number of complaints about the Project, its workforce, traffic or other impacts, and resolution rate.	Complaints register and stakeholder issues analysis.	Implement in construction phase and ongoing. Review quarterly to 2023.
		Number of Project-related enrolments at local schools Number of Project-related enrolments and number of vacancies in local childcare centres	Department of Education and participating childcare centres.	Implement in operations phase. Review six-monthly to 2023.
		Number of on-site and off-site incidents requiring Police or Fire or Ambulance call-out.	Project HSE statistics. Feedback from health and emergency services regarding cooperation with the Project.	Implement in operations phase. Review six-monthly to 2023.

Objective	Desired outcomes	Performance Measure	Data Source	Timing
Participate in and support partnership responses to community development and service needs.	Project delivers major initiatives in partnership that improve quality of life for local communities.	No. of partnerships and investment initiatives contributing to community priorities.	CRGs feedback on funded community initiatives. Annual information / consultation sessions. Partnership and investment outcome reports.	Implement in construction phase and ongoing. Review annually to 2023.
Local Business and Content Management				
Maximise local awareness of the Project's supply opportunities and build relationships with local businesses.	Local business and engagement program is well promoted using a range of mechanisms.	Number and distribution (local/regional/Queensland) of supplier registrations. Positive feedback from local industry stakeholders.	Supplier registers (ICN & Project).	Implement in construction phase and ongoing. Review quarterly to 2023.
Provide full, fair, and reasonable opportunity for local, regional and Indigenous businesses to participate in the supply chain.	Maximise the participation of local, regional and Indigenous businesses.	Number and percentage of local, regional and Indigenous businesses participating in supply.	Inputs to QRC Code report templates.	Implement in construction phase and ongoing. Review quarterly to 2023. Report Annually (September).
Align major contracts and contractors to the Project's Local Content Strategy.	Major contractors adopt and report on the Project's local content commitments and in accordance with the Code reporting templates.	Code report templates are completed by all contracted parties, including supplier inputs.	Contractor and supplier inputs. Code reporting templates.	On Project approval. Review Quarterly to 2023.

7 Conclusion

The Project, if approved, will have a range of social impacts and benefits, primarily accruing in the Isaac LGA, but with employment opportunities and benefits for businesses extending to other regions including the Mackay LGA.

The potentially impacted communities are likely to include Moranbah, Dysart, Nebo and Middlemount, and the Isaac LGA as a whole. Social impacts are likely to include:

- during the first construction period, a temporary population increase in the order of 440 FTE people, with consequent demands for local health services;
- during the second construction period (around 2027), a temporary population increase of around 300 FTE people;
- during both construction and operation:
 - increased demands on Queensland Police, Ambulance and Fire and Emergency Services;
 - incremental increases in demands for Council services and facilities;
 - increased traffic on local and district connector roads;
- during operations:
 - potential for Project-induced inflation to increase the cost of housing (purchase and rental) if additional stock is not made available;
 - requirements for increases in health service provision levels (hospital, GPs, specialists and mental health services) commensurate with demand;
 - increases in school enrolment and childcare place requirements;
 - incremental increased demand for community services (e.g. family support and settlement, youth support, domestic violence and counselling); and
 - labour draw, staff turnover and potential for wage inflation for some local and regional businesses.

Social benefits are likely to include:

- during construction, creation of an estimated 500 jobs in 2019-20 and 700 jobs in 2020-21 for the first construction period and an estimated 300-500 jobs for the second construction period around 2027;
- during operations (2020-2099):
 - locally-based employment for Isaac LGA residents, including a focus on gender equity in the Project workforce;
 - the availability of 480 jobs in 2020 and 960 jobs by 2021, with potential for an increase to 1,300 jobs in 2033, benefitting residents in the Isaac, Mackay and other Queensland LGAs;
 - employment and training opportunities for Indigenous people, including partnership with the Project area's Traditional Owners;

- in-migration of Project personnel and families to the Isaac LGA from 2020, contributing to population growth and community vitality;
- benefits for local and regional businesses from both Project supply opportunities and consumption by Project personnel and households; and
- potential for supply opportunities for Indigenous businesses.

Isaac LGA communities have experienced a social and economic downturn since 2012, with the loss of jobs, population, businesses and community confidence. The Project is likely to support social resilience and sustainability in Isaac LGA communities by:

- offering long term, locally-based employment, which will increase local community well being;
- enabling population growth and population stability, which will increase community viability (e.g. service availability and volunteer resources);
- supporting workforce involvement and integration with local communities, which will increase social capital;
- increasing demand for local and regional businesses' offerings, with potential for increased indirect employment and business growth; and
- enabling increased labour force participation and development of the Isaac LGA's skills base.

Potential threats to social conditions, particularly in the context of cumulative impacts, include:

- rental housing cost inflation;
- increased demand for health, Police, emergency and community services which will require commensurate increases in funding to maintain their adequacy; and
- labour draw from local and regional businesses.

The Project's management strategies aim to avoid or mitigate social impacts and maximise the Project's benefits for local and regional communities. The Project's SIMP includes a program to monitor and report on the delivery and effectiveness of the management strategies, and a process for review and refinement of the SIMP as necessary.

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OLIVE DOWNS COKING COAL PROJECT
SOCIAL IMPACT ASSESSMENT
APPENDIX A – SUPPORTING DATA

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Introduction

This document contains additional information, data tables and analysis used to inform the development of the Olive Downs Coking Coal Project Social Baseline and Impact Assessment, including

- **Population Projections** providing additional information supporting Social Baseline Section 4.3.3.
- **Community health and safety** providing additional information supporting Social Baseline Section 4.6.1 and 4.6.6; and
- **Mining Employment** providing additional information supporting Social Baseline Section 4.7.3 and Impact Assessment Section 5.2.8.

Population projections

Section 4.3.3 refers to QGSO's for 2017-2023 non-resident population projection methodology, which comprises four different series (A, B, C and D).

Each series reflects different outcomes from the possible future development of resource projects and operations in the Bowen and Galilee Basins. The QGSO's full projection methodology is available at: <http://www.qgso.qld.gov.au/products/reports/bowen-galilee-basins-non-resident-pop-proj/bowen-galilee-basins-non-resident-pop-proj-2017-2023.pdf>

Of note from the QGSO methodology:

- *“Series A projection is based on the number of non-resident workers on-shift who were engaged in existing resource operations and associated infrastructure activities in the area at June 2016. The projection takes into account future changes to those operational workforces as advised by resource company sources, as well as the estimated non-resident construction and operational workforces of Category A projects (i.e. those that had reached FID).*
- *Series B projection includes the Series A projection plus projected growth in the non-resident population arising from Category B projects (those that have an EIS approved but have yet to reach FID).*
- *Series C projection includes the Series A and B projections, plus the projected growth in the non-resident population arising from Category C projects (those that have lodged an EIS, but have yet to proceed through to final approval).*
- *Series D projection includes Series A, B and C projections, plus the projected growth in the non-resident population from Category D projects (those that have yet to publish an EIS, including projects that have lodged an initial advice statement (IAS) as well as projects that have yet to begin the approvals process)” (Page 3).*

A full list of existing operations and projects included in each category and a map of selected projects in the Bowen and Galilee Basins is available at <http://www.qgso.qld.gov.au/products/reports/bowen-galilee-basins-non-resident-pop-proj/bowen-galilee-basins-non-resident-pop-proj-2017-2023.pdf>

Community health and safety

Health indicators

The following information has been used to inform SIA Section 4.6.1 which compares health indicators for Isaac LGA with Mackay LGA and the Queensland average. Indicators are derived from the Social Health Atlas of Australia¹. Data considered are provided in Table A-1.

Table A-1 shows that:

- more residents of Isaac LGA (than Mackay LGA and Queensland as a whole) are modelled to rate their health between fair and poor, and to have higher chronic disease and health risks associated with personal lifestyle and behaviour.
- More residents of Isaac LGA (than Mackay LGA and Queensland as a whole) are modelled to rate their health between fair and poor, and to have higher chronic disease and health risks associated with personal lifestyle and behaviour.

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 with people living in Mackay LGA and 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 82.6 for Mackay LGA and 79 for Queensland);
- more people aged 18 years or over had high blood pressure (ASR 28.2 compared with 24.2 for Mackay LGA and 23.2 for Queensland);
- more people aged 18 years or over consumed more than two standard alcoholic drinks per day (ASR 22.7 compared with 19.4 for Mackay LGA and 17.2 for Queensland); and
- more people aged 18 years or over were obese (ASR 37.4 compared with 34 for Mackay LGA and 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).

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).². This partially reflects the youth of the Isaac population and the nature of their work and leisure pursuits.

¹ Torrens University 2017, Public Health Information Development Unit. April 2017.

² Ibid.

Table A-1: 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
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.

Mental health

SIA Section 4.6.6 regarding mental issues in the study area considers findings from the Queensland Government's Mental Health Activity Data Collection (MHADC) data set for the SA2 study area for the three-year period from July 2012 to June 2015.

Figure A-1 presents the three-year trend in specialised mental health service contacts³ from residents in the Moranbah and Broadsound-Nebo SA2s and shows:

- the number of service contacts from the SA2 study area fluctuated over the three-year period, but indicated a general upward trend in the number of service contacts, with a peak for both SA2s in June 2015 (273 for Moranbah SA2 and 277 for Broadsound-Nebo SA2);
- for Moranbah SA2, the number of service contacts was lowest in December 2013 (at 63) spiked during the first four months of 2013 and the first two months of 2014, and had an upward trajectory from March 2015, with a three-year peak of 550 service contacts in May 2015;
- for Broadsound-Nebo SA2, the number of service contacts spiked in April 2013 with 221 contacts and again in September 2014 with 188 contacts. Service contacts were lowest at 59 contacts in July 2012, which represents the start of the trend series, and again in December 2014 with 68 service contacts.

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 a distinct consumers or a small number of repeat service users. Analysis of distinct consumers accessing mental health services shows 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.

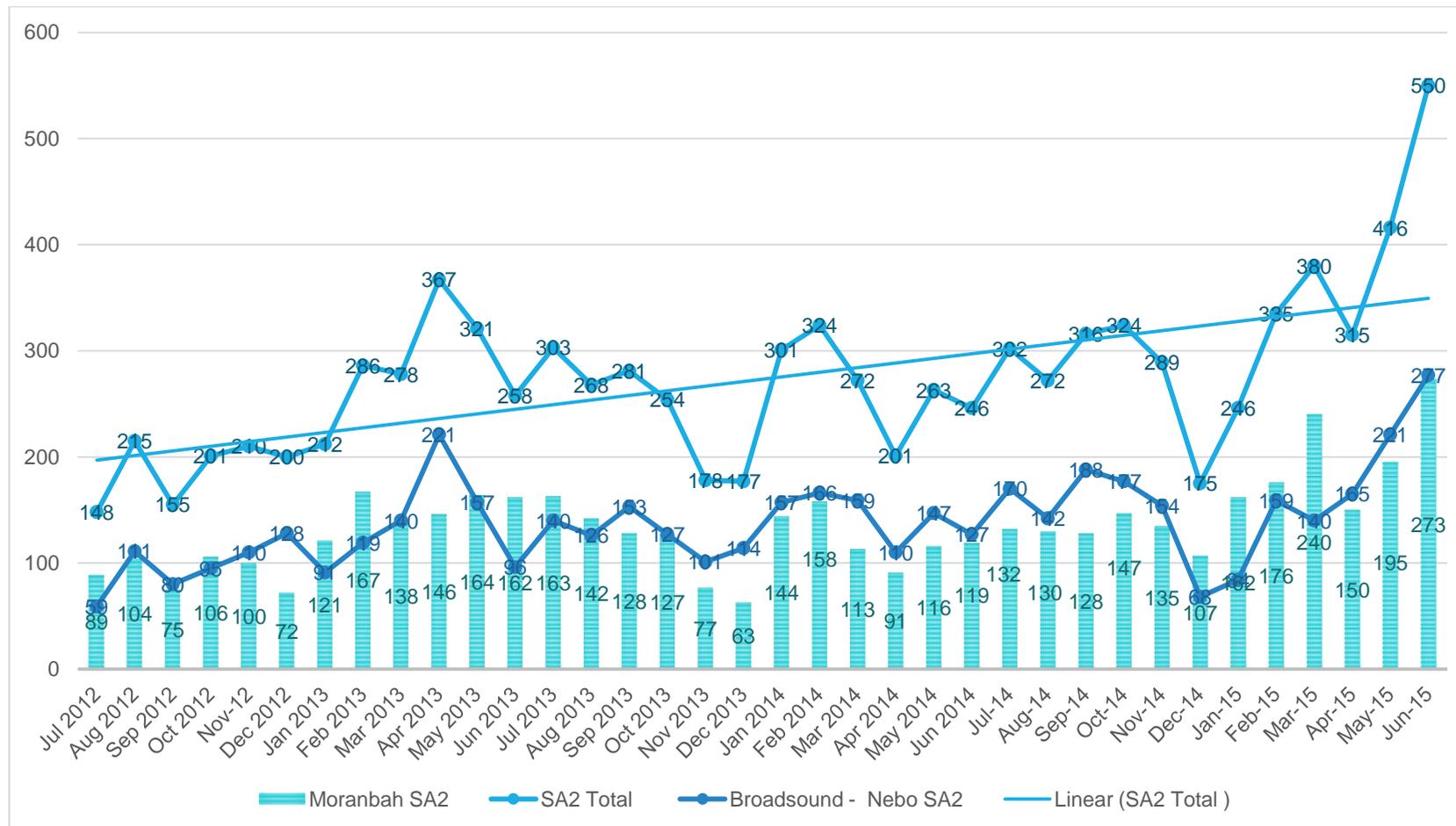
The increasing numbers of consumers could be attributed to an increasing prevalence of mental illness or mental health conditions in the resident population, or the influence of external factors (for instance financial and housing stress), but could also be the result of changed models of service provision,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

Figure A.2 presents the number of distinct consumers accessing specialised mental health services from Moranbah and Broadsound SA2 for the same period.

For Moranbah SA2, number of consumers first spiked with 49 in August 2013, and again with 44 in September 2014, and November 2014. By February 2015, the number of consumers had increased to 49, increasing to 74 in March 2015, and up to 93 in June 2015. For Broadsound-Nebo SA2, number of consumers first spiked with 48 in March 2013, and with 44 in September 2013, which then fluctuated to reach 44 again in September 2014 and 44 in May 2015, peaking with 54 consumers in June.

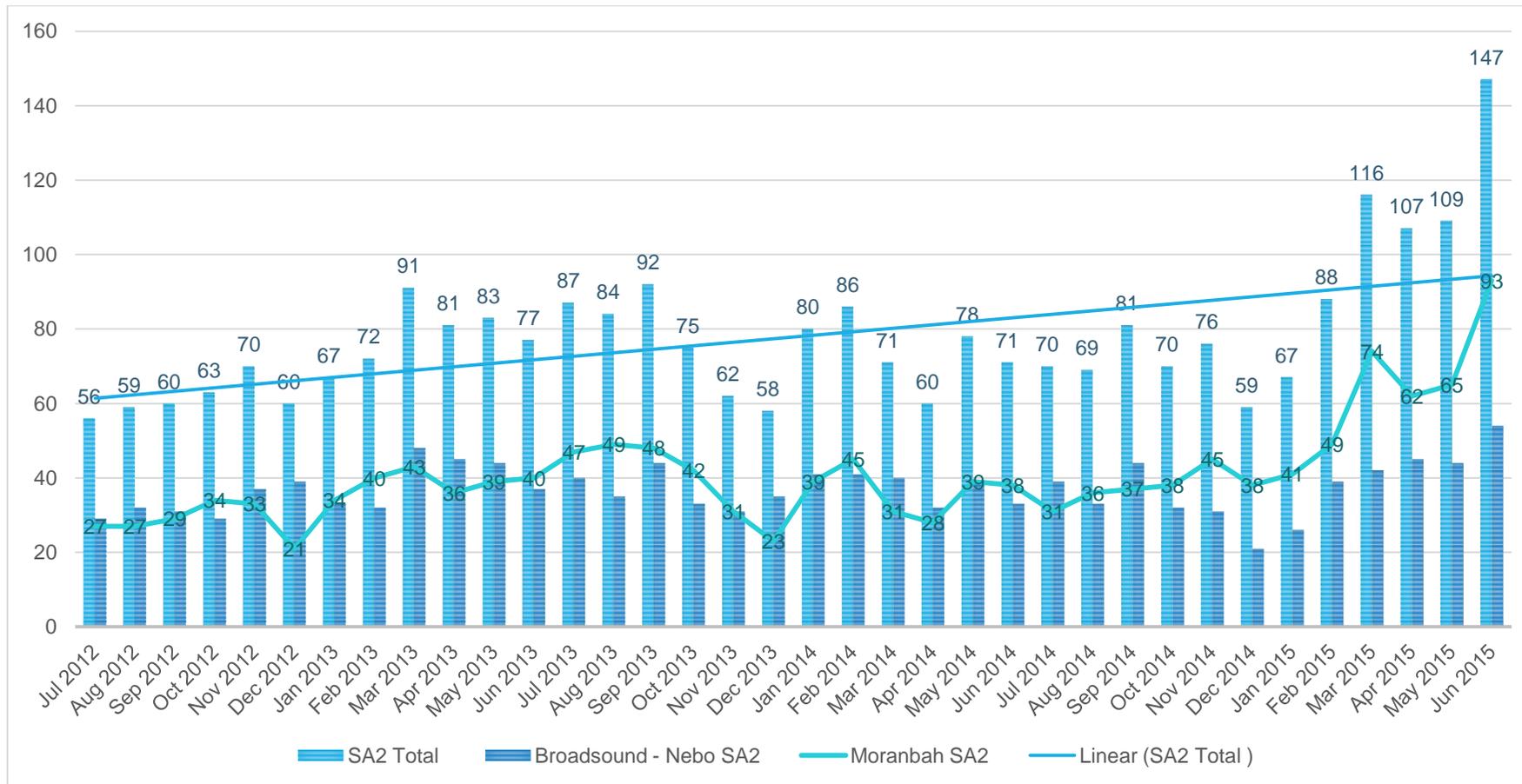
³ Service contact is defined as: "The provision of a clinically significant service by a specialised mental health service provider(s) for patients/clients, other than those patients/clients admitted to psychiatric hospitals or designated psychiatric units in acute care hospitals, and those resident 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 A-1 No. of specialised mental health service contacts by month and SA2, Jul 2012-Jun 2015 (Queensland MHADC) ⁴



⁴ 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-2 No. of specialised mental health service consumers by month and SA2, Jul 2012-Jun 2015 (Queensland MHADC)⁵⁵



⁵⁵ 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

Coal mining jobs in the LGA

The most recent data on coal mining industry jobs are available for March 2017 via the Queensland Government's mining industry data (see Table A-2), and indicate that coal mines in the Isaac LGA employed a total of 17,226 people, including 13,629 people employed in open cut mines and 3,597 people employed in underground mines.

Mines with the largest workforces included Goonyella Riverside (2,087 people), Saraji (1,572 people), Peak Downs (1,619 people), Hail Creek (1,490 people) and Caval Ridge (1,203 people).

Table A-2: Number of Jobs by Mine - Isaac LGA 2016

Mine	No. of Workers		No. of Workers
Open Cut		Underground	
Burton Mine	17	Broadmeadow Mine	759
Byerwen Mine	1	Carborough Downs Coal Mine	288
Caval Ridge Mine	1,203	Grasstree Mine	717
Clermont Coal Mine	605	Grosvenor Coal Mine	658
Coppabella Mine	486	Moranbah North Mine	795
Daunia Mine	685	North Goonyella Mine	380
Foxleigh Mine	322	Total Underground Employees	3,597
Goonyella Riverside Mine	2,087		
Hail Creek Mine	1,490		
Isaac Plains	213		
Lake Vermont Mine	686		
Middlemount Mine	511		
Millennium Open Cut Mine	470		
Moorvale Mine	385		
Newlands Open Cut	641		
Norwich Park Mine	23		
Olive Downs Coking Coal Project	4		
Peak Downs Mine	1,619		
Red Mountain Joint Venture CHPP	47		
Saraji Mine	1,572		
South Walker Creek Mine	562		
Total Open Cut Employees	13,629		
Total Open Cut + Underground Coal Mine Employees			17,226

Source: Business Queensland. 2017

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