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Chapter 31

Social Impacts

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31. SOCIAL IMPACTS

31.1 Introduction

This chapter describes the existing social environment for the defined area of influence for the Byerwen Coal Project (the project) and identifies the nature and extent to which project related effects may directly or indirectly impact on the area of influence. In addressing the project Terms of Reference (ToR) this chapter outlines mitigation measures and management strategies to address negative impacts on the social environment.

The information presented in this chapter is based on the Byerwen Coal Social Impact Assessment (SIA) Report prepared by Coffey Environments (Coffey Environments, 2013) and provided as **Appendix 31** of the EIS.

The SIA has been developed in consideration of the International Principles for Social Impact Assessment (IAIA, 2003) and incorporates the requirements of the World Bank Group's performance standards for social assessment (World Bank, 2005) and elements outlined in the International Finance Corporation's Good Practice Note, Addressing the Social Dimensions of Private Sector Projects (IFC, 2003; IFC, 2007).

Detailed descriptions of the project's location, proposed construction and operation are provided in **Chapters 5-7** of the EIS.

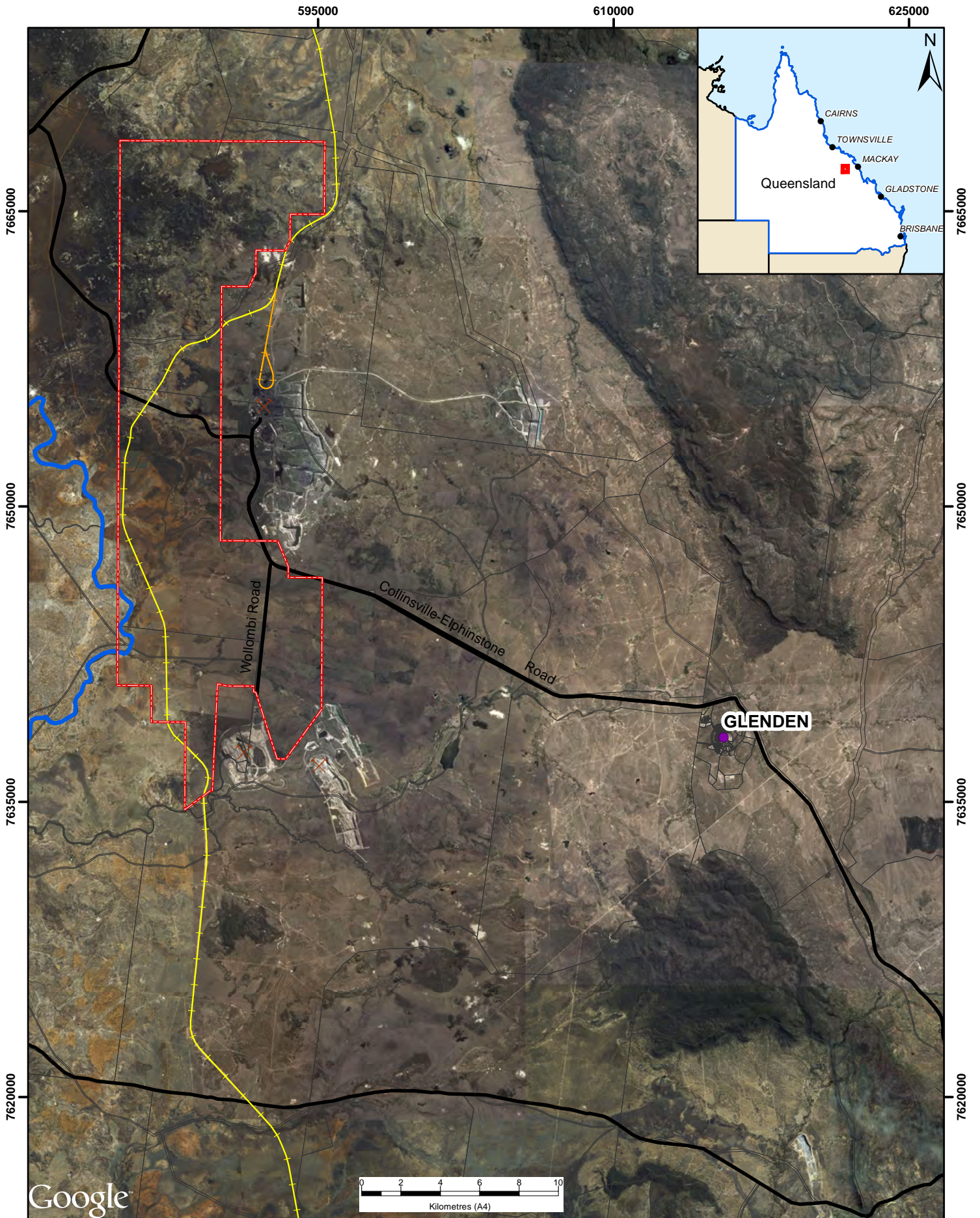
Information about the project's approvals process, policy, legislation and guidance relevant to air quality are described in **Chapter 3**.

31.2 Existing Social Environment

31.2.1 Project Area of Influence



The project is located in Queensland's Bowen Basin approximately 20 km west of the existing town of Glenden, 60 km south of Collinsville and 140 km west of Mackay. Glenden is within the Isaac Regional Council area. As Glenden is the only populated area within a reasonable commuting distance (i.e. less than 40 minutes drive in accordance with health and safety guidelines) from the project area, this township is defined as the primary social and cultural area of influence relating to the project. **Figure 31-1** shows the township of Glenden as the primary study area in relation to the project.

As there are likely to be some broader project related effects, a secondary social and cultural area of influence has been defined. This encompasses the local government authorities (LGAs) of Isaac Regional Council, Whitsunday Regional Council and Mackay Regional Council. This broad regional area is referred to as the Northern Bowen Basin. **Figure 31-2** depicts the Northern Bowen Basin regional area as the secondary study area in relation to the project.

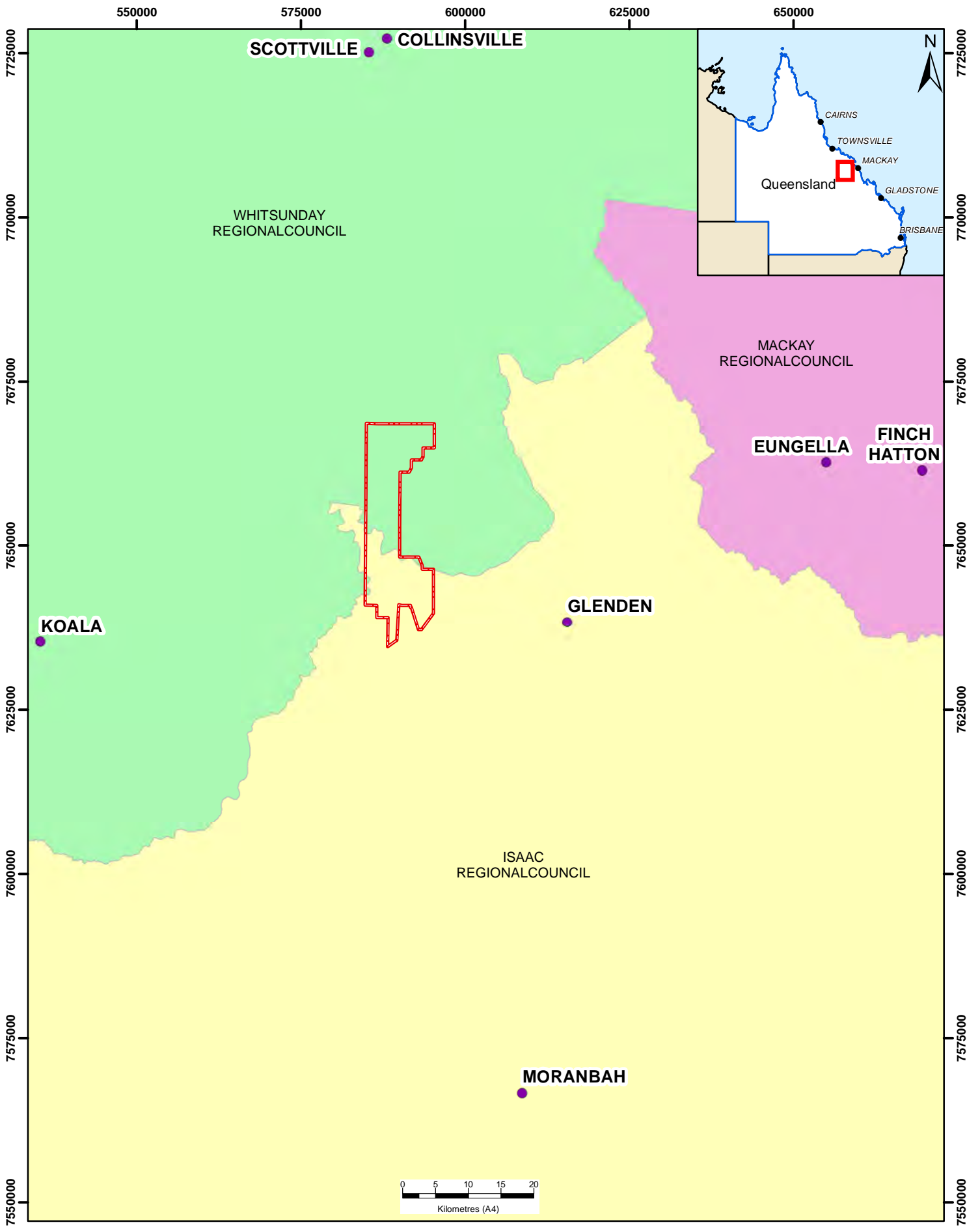


Legend

- Project Area
- Cadastre
- Towns
- ✕ Existing Mine Site
- Formed Road
- Sutor River
- GAP Rail line
- Newlands Mine Rail Loop



Primary Study Area		 
Figure 31-1	Byerwen Coal Project	
Date: 4/03/2013	Author: samuel.admin	
Revision: R2	Map Scale: 1:250,000	
Coordinate System: GDA 1994 MGA Zone 55		
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Legend

- Project Area
 - Towns
 - Isaac
 - Mackay
 - Whitsunday
- Regional Council Boundaries**

Secondary Study Area and Local Government Boundaries		 
Figure 31-2	Byerwen Coal Project	
Date: 5/03/2013	Author: samuel.ferguson	
Revision: R2	Map Scale: 1:750,000	
Coordinate System: GDA 1994 MGA Zone 55		
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31.2.2 Historical Background and Settlement Pattern

The town of Glenden is named after the Glenden Station (1918), which adjoined the site chosen for the township. Glenden is a mining town that was established by Mount Isa Mines Ltd (now Xstrata Coal Queensland Pty Ltd (Xstrata)), to support the nearby Newlands Coal Mine, which began construction in 1981. Whilst the town and facilities were built by the company, the services and public facilities of the town have been handed to the Isaac Regional Council to administer.

The Bowen Basin covers an area of approximately 60,000 square km in Central Queensland. The area derives its name from the Bowen River, which was named after Queensland's first governor, Sir George Bowen. Prior to the arrival of European settlers, the Birriah people in the north and the Jangga people in the south inhabited the area. Colonial practices and expansion of agriculture and mining has led to degradation of customary contact with 'country' and has impacted on the health and lifestyles of traditional owners.

European settlement of the region began in 1861 with the opening of the land to pastoral activity which was primarily the grazing of sheep and cattle. Mineral prospecting was undertaken as the land was explored and settled. Coal was discovered in 1866 and large-scale mining operations commenced in the 1920s. Key townships include the predominantly mining communities of Moranbah and Collinsville, with Mackay on the coast being the primary population and service centre. The combination of rural (pastoral) activity along with resource exploration and development has shaped the character and heritage of the region.

31.2.3 Community Values

Consultation feedback informed the identification of the three broad community values in the primary study area as described below.

31.2.3.1 Strong Community Identity

Residents of Glenden and in the Isaac region more broadly reported the existence of a strong community spirit that exists among residents. The community has been founded on mining and agricultural production and this provides a distinct community identity. Residents identify with being part of a mining and rural community and value the hard work and determination that has gone into its creation.

31.2.3.2 Cohesive Communities

Residents of the study area value living in cohesive, stable communities, which offer a high standard of living. A number of key qualities were consistently raised as being factors that contributed to a cohesive community. First, residents highly valued that their community was safe and offered a healthy environment to raise a family. There was a strong public perception of community safety, which is reflected in relatively low rates of crime across the study area. Living in a quiet, non-polluted environment with clean air and access to natural landscapes was considered by residents as a preferred environment in which to raise a family.

Residents also appreciated the availability of social services and facilities, which support a good standard of living. Accessibility of health, education and recreational services was considered a valuable attribute. A concern is that the expansion of Glenden may place further pressure on existing health services. Conversely it is seen as a positive effect on the school which has substantial additional capacity.

31.2.3.3 Affordable Rural Lifestyle

Residents enjoy lifestyle aspects associated with living in a rural area that provides wide open spaces and diverse recreational opportunities. A less hectic and slower-paced lifestyle, as compared to perceptions of life in major cities, was seen as a beneficial aspect of living in the study area. This includes a lack of traffic and ease of commuting to employment and recreational destinations.

The pace of life, combined with relatively small, stable, close-knit communities, fosters a sense of rural friendliness, which is highly valued by residents. Residents also valued the relative affordability that the study area offered. A key element of affordability is the housing arrangement which exists in Glenden.

31.2.4 Demographic and Social Statistics

31.2.4.1 Population

Table 31-1 details the population for the primary and secondary study areas at the time of the 2001, 2006 and 2011 census events conducted by the Australian Bureau of Statistics (ABS).

Table 31-1 Population and Population Change

Locality	2001 population	2006 population	2011 population	Population change 2001- 2011
Glenden	977	1,112	1,793	83.5%
Mackay	89,877 ^a	101,015 ^a	112,798	25.5%
Isaac	19,013 ^b	19,822 ^b	22,588	18.8%
Whitsunday	34,688 ^c	29,335 ^c	31,426	-9.4%
Northern Bowen Basin Region	143,578	150,172	166,812	16.2%
Queensland	3,585,639	3,973,961	4,332,739	20.8%

a Compilation of Mackay, Sarina and Mirani LGAs.

b Compilation of Broadsound, Belyando and Nebo LGAs.

c Compilation of Whitsunday Shire and Bowen Shire LGAs.

Source: ABS, 2012

As indicated in **Table 31-1** the population of Glenden as recorded in 2011 was 1,793, which represents approximately 1.1% of Northern Bowen Basin Region's recorded population of 166,812. Population growth in Glenden between 2001 and 2011 has been substantial (83.5%); notably higher than that which has occurred in the Northern Bowen Basin Region (16.2%) or Queensland (20.8%) over the same period.

The Full-time Equivalent (FTE) population estimates for Glenden and Isaac and Whitsunday are presented in **Table 31-2**. The FTE population measure includes the usual resident population (people who live in the area permanently) and non-resident workers (those who regularly stay in the area for extended periods when working, but who are not counted as usual residents). The concept of FTE was developed to provide a more complete picture of the service population of an area and provides a more effective measure of total demand for goods, services and infrastructure in regions where there is a high incidence of fly-in/fly-out (FIFO) and drive-in/drive-out (DIDO) workers.

Table 31-2 Full-Time Equivalent Population Estimate

Locality	Residential population	Non-resident workforce ^a	FTE population estimate
Glenden	1,793	1,620	3,413
Isaac	22,588	13,590	36,178
Whitsunday	31,426	720 ^b	32,146

a This data is from Bowen and Galilee Basins Population Report (OESR, 2011).

b This data is for Bowen (S) only not the entire Whitsunday LGA (OESR, 2011).

Table 31-1 shows as at 2011, there were an estimated 3,413 persons residing in the township of Glenden including those in short term accommodation. The FTE population estimate is almost double the residential population; however it is recognised that due to shift rotations, not all of these people are likely to be ‘in residence’ at any one time. The non-resident workforce of Isaac Council is also substantial, accounting for an additional 60% to the resident population.

The Office of Economic and Statistical Research (OESR) has produced population projections for the LGAs that comprise the Northern Bowen Basin Region. Medium series projections predicting population from 2016 to 2031 are provided in **Table 31-3**. There were no population projections published for Glenden.

Table 31-3 Projected Population (Medium Series)

Locality	2011 (current)	2016	2021	2026	2031
Mackay	112,798	138,348	156,117	172,604	187,367
		22.7%	12.8%	10.6%	8.6%
Isaac	22,588	28,266	31,418	34,270	37,000
		25.1%	11.1%	9.1%	8%
Whitsunday	31,426	40,618	46,008	50,928	55,451
		29.2%	13.3%	10.7%	8.9%
Northern Bowen Basin Region	166,812	207,232	233,543	257,802	279,818
		24.2%	12.7%	10.4%	8.5%
Queensland	4,332,739	5,092,858	5,588,617	6,090,548	6,592,857
		17.5%	9.7%	9%	8.2%

Source: OESR, 2011

The population projections indicate that each of the Isaac, Mackay and Whitsunday LGAs are predicted to have strong population growth in the period from 2001 to 2016, with overall growth for the region (24.2%) being substantially higher than that of Queensland (17.5%). Elevated rates of predicted growth taper off in the period 2016 - 2031. The most likely explanation for high predicted growth rates across the Isaac, Mackay and Whitsunday LGAs is the predominance of mining activity this region, with 29 operational mines and an additional 23 mines planned. These are likely to stimulate population growth over the next 5 to 10 years.

31.2.4.2 Age and Gender Distribution

Census information (2011) indicated that the median age of the population of Glenden (32 years) and the Isaac LGA (31 years) was comparatively young when compared to Whitsunday (38 years) and Queensland (36 years). There were very few persons aged 60 and above recorded in

Glenden, accounting for just 3% of the population. Employment opportunities and housing affordability are likely to be factors attracting younger age cohorts.

The ratio of males to females as at 2011 for the primary and secondary study areas is presented **Table 31-4** below.

Table 31-4 Proportion of Males to Females

Locality	Proportion of females	Proportion of males
Glenden	35.3%	64.8%
Mackay	48.4%	51.6%
Isaac	44.4%	55.6%
Whitsunday	47.4%	52.6%
Queensland	50.4%	49.6%

Source: ABS, 2012

The population of Glenden recorded a substantially higher ratio of males to females, with males comprising 64.8% of the population. With respect to the broader region, the proportion of males and females was more balanced, with the exception of Isaac LGA in which the proportion of males was 6% higher than the state average.

31.2.4.3 Cultural Diversity

Both the primary and secondary study areas recorded a lower proportion of persons born overseas than the state average (20.5%). In the population of Glenden, 10.4% were recorded as being born overseas, whilst Isaac LGA recorded 9.9% and Mackay LGA 11.7%. Accordingly, Glenden and Isaac also recorded very low rates of a language other than English being spoken at home.

31.2.4.4 Family Structure and Household Composition

Table 31-5 provides information as to household type for the primary and secondary study areas.

Table 31-5 Household Type

Locality	Average household size (persons)	Total dwellings	Detached dwellings (%)	Family households (%)
Glenden	3	656	50.8	67.8
Mackay	2.7	43,086	76.2	76.3
Isaac	2.9	8,751	67.1	77.6
Whitsunday	2.4	10,848	75.3	70
Queensland	2.6	1,725,214	70.4	72.4

Source: ABS, 2012

In terms of the physical nature of the built environment, Glenden recorded a relatively low proportion of houses which are detached houses; 50.8% compared to a state average of 70.4%. Glenden recorded a higher average household size than the LGA's, however when related to the small number of dwellings, the low proportion of detached dwellings and the lowest percentage of family households, this is likely to indicate that residents are sharing houses for employment

purposes. Glenden also recorded a very low proportion of lone person and lone parent households.

31.2.4.5 Indigenous Community

A summary of the indigenous population of the primary and secondary study areas is provided in **Table 31-6**.

Table 31-6 Indigenous Persons

Locality	Indigenous proportion of total population (%)	Number of indigenous residents (persons)
Glenden	1.84	33
Mackay	4.35	4,912
Isaac	2.66	601
Whitsunday	4.24	1,334
Northern Bowen Basin Region	3.8	6,847
Queensland	3.6	155,824

Source: ABS, 2012

Mackay has the largest proportion of indigenous persons, while Glenden has the lowest, with a proportion which is 50% less than the Queensland average.

A notable feature of the indigenous population of the region is the lack of persons aged 55 and over. This is reflective of national trends where socioeconomic disadvantage and poor health is resulting in indigenous Australians having a notably shorter life expectancy compared to the mainstream population. The gender ratio for the indigenous population in both the primary and secondary study area was comparable to the Australian average, being 51.2% female and 48.9% male.

31.2.4.6 Education

Census data (2011) indicated that approximately 38% of the population of Glenden had completed schooling to a Year 12 level. The proportion of the population which has completed Year 12 schooling for the state of Queensland was substantially higher at 48.04%. Overall, the recorded level of attainment of a secondary education in both the primary and secondary study areas was lower than the state average. The dominance of mining related occupations in both the primary and secondary study areas, suggests that a key reason for the lower than average recorded rates for completion of secondary education, is that a high school certificate is not a prerequisite to entry into many mining-related jobs.

31.2.4.7 Health

No health related baseline data for the primary or secondary study areas was identified during consultation.

31.2.4.8 Disability Prevalence

No disability prevalence related baseline data was identified during consultation that was specific to Glenden. However, anecdotal evidence during the consultation process suggests disability prevalence is low to very low for the township. Information provided in the Newlands Coal Extension Project EIS (Xstrata, 2012) notes that 2 persons with a disability are employed at the current Newlands Coal Project, located adjacent the project site.

31.2.4.9 Labour Force and Unemployment

A notable feature of the primary study area is the comparatively very low level of unemployment in Glenden and across the Isaac LGA compared to the state average. As at the September 2010 quarter, the estimated proportion of unemployed persons aged 15 years and over in Glenden was less than 1%. For the Isaac LGA the rate of unemployment was also low, being 1.6% compared to a Queensland rate of 5.6%. The Mackay LGA (4.1%) and Whitsunday LGA rates (6.1%) were comparable to the state average.

In terms of labour force characteristics the most notable feature in Glenden is the predominance of mining as the industry of employment, recorded as being approximately 70% of the labour force. Considering that Glenden is effectively a purpose built mining community, it is considered that the actual proportion of the labour force employed in the mining industry is higher than 70% and that the lower figure recorded in the Census is due to confusion between 'occupation' and 'industry of employment'.

For the Isaac LGA, mining is also recorded as being the most significant industry of employment with 39% of all employed persons working in this industry, compared to a state average of 4.2%. The Mackay and Whitsunday LGA's more closely mirror state trends with construction and manufacturing being key industries and agriculture accounting for a relatively high proportion of employment in the Whitsunday LGA.

In terms of employment by occupation, technicians and trade workers, labourers, machinery operators and drivers were the most prevalent occupational groups in both Glenden and across the region. Managers are also highly represented in Whitsunday LGA, again reflecting the importance of the agricultural industry in this LGA.

31.2.4.10 Income

The median individual (\$1,586) and family weekly income (\$2,770) recorded in 2011 for Glenden was considerably higher than that for the Mackay, Isaac and Whitsunday LGAs (median individual income ranging from \$621 and family income ranging up to \$2,671) and Queensland (median individual income of \$587 and family income of \$1,453). It is likely that high wages associated with employment in the mining sector is the explanation for such high median incomes in Glenden.

31.2.4.11 Housing and Accommodation

As at the 2011 census there were 656 dwellings recorded in Glenden, 50.76% of which were separate houses. A most notable feature is the high proportion of dwellings which are being rented (93.8%), compared to the regional average of 31.5%, and the state average of 33%. Additionally, no dwellings were being purchased, and a very low proportion of dwellings were fully owned in Glenden (1.1%). The median rent paid in Glenden is just \$30/week compared to a Queensland average of \$300/week.

As Glenden is within the Isaac LGA, it is expected that the rent for the township lowers the median rent for Isaac LGA which is just \$64/week compared to the state average.

As these figures suggest, the housing market in Glenden is substantially different to that of a typical Queensland township. The township is a purpose built mining community with the housing stock provided by Xstrata for employees of the Newlands mining operations. Housing is part of a salary package offered to employees and subsequently the housing market in Glenden is artificial. The private housing market is limited to a very small proportion of the overall housing stock, approximately 4-5 houses.

Table 31-7 provides an overview of housing in the primary and secondary study areas.

Table 31-7 Median Housing Costs Versus Median Income

Locality	Median individual income (\$/week)	Median rent (\$/week)	Median housing loan repayment (\$/month)
Glenden	1,586	30	0*
Mackay	705	310	2,167
Isaac	1,052	64	1,907
Whitsunday	621	260	1,768
Queensland	587	300	1,850

*There were no mortgage holders in Glenden at the time of the 2011 Census (ABS, 2012).

As at July 2012 there was 1 property for sale in Glenden.

Temporary Accommodation

Temporary accommodation is constrained and limited to the Glenden Country Motor Inn which provides a total of 19 rooms available over and above those which have been allocated to companies operating in the Glenden area.

Low Cost, Social and Community Housing

Isaac Regional Council's Affordable Housing Project has responded to the region's need for affordable housing, but has focussed upon the Moranbah community, via the Isaac Views Housing Project.

Mackay Regional Council released a draft Residential Densities Strategy in 2011 to support planning for the region's continued population growth and changing demographics and to encourage higher density residential development.

There was no specific data available from the Whitsunday Regional Council. This council is liaising with the Isaac Regional Council in relation to their Affordable Housing Project.

31.2.4.12 Socio-economic Index

The Socio-economic Index for Areas (SEIFA) developed by the ABS provides a measure of comparative social and economic wellbeing across localities. One such index focuses upon indicators of advantage/disadvantage with relative disadvantage being associated with a low score. A high proportion of the population within Isaac and Mackay regions was recorded as being in Quintile 4, which means that they fall within the highest 70% of the population of Queensland with regard to measures of socio economic advantage (OESR, 2011). Glenden recorded one of the highest scores in the Isaac LGA (decile 9 -10) indicating that it is one of the most relatively advantaged areas in Queensland (OESR, 2011).

31.2.4.13 Crime

The project area is located within the Mackay District Central Police Region. It is served by 297 police officers and 59 staff members. In the 2010-2011 year for the Mackay District there were a total of 901 reported offences against the person, 5,823 reported offences against property and 5,735 reported other offences. Rates of crime per police officer for the Mackay District and for Queensland are presented in **Table 31-8**.

Table 31-8 Rates of Crime Per Police Officer

Locality	Offences against person per officer	Offences against property per officer	Other offences per officer
Mackay	3.0	19.6	19.3
Queensland	2.8	20.4	14.8

There is one police officer permanently based in Glenden, who reports a very low crime rate in the town.

31.2.4.14 Volunteering

Table 31-9 details volunteer activities and associations in Glenden and the Northern Bowen Basin Region.

Table 31-9 Volunteer Activities/Associations in the Communities of Interest

Community	Volunteer associations
Glenden	<ul style="list-style-type: none"> • Queensland Fire and Rescue Service • Glenden and District Arts Council • Community Health Centre • Glenden Progress Association
Mackay	<ul style="list-style-type: none"> • Natural Environment Centre • Conservation Volunteers Australia • Mackay Conservation Group • Mackay and District Turtle Watch • Pioneer Catchment and Landcare Group
Isaac	<ul style="list-style-type: none"> • Hinterland Community Care Inc • Reef Catchments Public Fund
Whitsunday	An extensive list of volunteer organisations can be found on the Whitsunday Regional Council's local volunteer directory.

Source: regional council websites, July 2012

Table 31-10 provides comparative rates of participation in voluntary activities.

Table 31-10 Rates of Participation in Voluntary activities

Locality	% voluntary activity	Number of people volunteering
Glenden	10.5%	189
Mackay	15.9%	14,081
Isaac	15.3%	3,446
Whitsunday	13.8%	4,347
Northern Bowen Basin Region	15%	21,874
Queensland	14.90%	645,543

Source: ABS, 2012

In Glenden, four volunteer organisations were identified. The rate of participation in voluntary activities (10.5%) as recorded in 2011 was slightly lower than the rate for the Northern Bowen

Basin Region (15%) and Queensland (14.90%) reflecting the predominant focus upon work activities and the needs of shift work.

31.2.5 Community Infrastructure and Social Services

31.2.5.1 Health

Table 31-11 indicates the availability of health services across the region.

Table 31-11 Existing Health Services in the Study Area

Locality	Health services available
Glenden	<ul style="list-style-type: none"> • Glenden Community Health Centre • Glenden Medical Practice • Glenden Dentist
Mackay	<ul style="list-style-type: none"> • Mackay Base Hospital • Mackay Mater Misericordie Hospital • Eight community health centres • General practitioners • Other health services
Isaac	<ul style="list-style-type: none"> • Nebo Medical Centre • Moranbah Hospital
Whitsunday	<ul style="list-style-type: none"> • Whitsunday Community Health Centre • Collinsville Hospital • Bowen Hospital • General practitioners • Visiting health services

Source: Queensland Health website, July 2012.

The Glenden Community Health Centre is staffed by a nurse and in addition to emergency, the centre offers a range of nursing services to residents including a “well baby clinic”, immunisation programs, community nursing, Triple P parenting programs, antenatal classes and aged care support. There is a range of visiting health services also available at Glenden Community Health Centre including counselling, mental health support for both children and adults and speech pathology. The mobile women’s health clinic and school based youth health nurse also visit Glenden regularly.

The Glenden Medical Practice is underwritten by Xstrata and is staffed by a single doctor. Glenden Dental is a private dental surgery in Glenden which opened in 2011.

The key Queensland Health provided facilities in the Bowen Basin include the Collinsville and Moranbah Hospitals. Collinsville Hospital is a public hospital with less than 10 beds providing accident and emergency services, admissions, aged care, cancer treatment and outpatient services. Moranbah Hospital is a public hospital with less than 20 beds, which provides accident and emergency services, admissions and outpatient services. The Mackay Base Hospital is the major hospital for the Central Queensland Region providing the full range of specialist services, clinics, and allied health along with outreach and support services. There is also a private hospital located in Mackay.

31.2.5.2 Disability Services

There appears to be limited disability services provided in the Glenden region corresponding to an expected low to very low disability prevalence for the region.

31.2.5.3 Education

Educational facilities in the primary and secondary study areas are provided in **Table 31-12**. In terms of the primary and secondary study area, the city of Mackay is the regional hub and provides an array of educational facilities and services including an education and research centre under the auspices of James Cook University.

Table 31-12 Availability of Educational Services in the Study Area

Locality	Education services available
Glenden	Glenden State School (P-12 and special education program), C&K Glenden Community Childcare Centre
Mackay	45 state schools, 14 non-state schools, Central Queensland Institute of Technical and Further Education (TAFE), Central Queensland University, James Cook University
Isaac	20 state schools, Central Queensland Institute of TAFE, Central Queensland University.
Whitsunday	5 state schools, 14 non-state schools, Barrier Reef Institute of TAFE, Central Queensland University.

Source: (DETE, 2012; Whitsundays Regional Council, 2012)

Glenden State School reported 283 enrolments in 2010, from prep to year 12 and includes a special education program (GSS, 2010). The school is well regarded academically, has capacity across all primary and secondary schooling years and a total capacity for in excess of 400 students.

Kindergarten and childcare services are provided in Glenden by the C&K Glenden Community Childcare Centre. The centre is open from Monday to Friday and attendance currently fluctuates.

31.2.5.4 Emergency Services

The study area is located within the Mackay District of the Central Police Region. It is served by 297 police officers and 59 staff members. There is a police station located in Glenden which is attended by a single police officer who is permanently based in the town. Back up police services are provided from Nebo and Mackay.

The Glenden fire station is supported by the Queensland Fire and Rescue Services, which operates from 38 urban fire stations with a staff of over 620 full-time and auxiliary firefighters. There is a Glenden State Emergency Services (SES) shed that is only staffed during emergencies and disasters. The Glenden SES is no longer operational and as such all SES involvement is provided from the Nebo SES.

The Queensland Ambulance Service and the private Glenden Medical Practice provide medical services and patient care to Glenden and surrounding landholders. There is one full-time ambulance officer based in Glenden. The Glenden Medical Practice is open Monday to Friday from 9am to 12pm and 1pm to 5pm.

31.2.5.5 Recreational Facilities and Services

Existing community facilities, sporting and recreational groups are outlined in **Table 31-13**.

Table 31-13 Recreation groups and facilities in Glenden

Locality	Community facilities	Sporting facilities
Glenden	Childrens playground Community centre and gymnasium Library Bowling club Arts and craft centre Glenden Recreation Centre Golf course	Motocross track, swimming pool and tennis courts.

Source: regional council websites, accessed July 2012.

The Mackay, Isaac and Whitsunday regions afford a range of recreational facilities and services, which include, but are not limited to, galleries and museums, national parks, local parks and playgrounds, the BlueWater Lagoon, walking trails, as well as golf and sailing clubs, swimming pools, tennis courts and sports grounds.

In addition to recreational facilities, natural areas and reserves offer opportunities for informal recreational pursuits such as hiking and swimming.

31.2.5.6 Communications Infrastructure

Compared to the Queensland average of 78.3%, the proportion of households with connection to the internet in Glenden (84.5%) is relatively high. As at the 2011 Census date, Glenden recorded 10.8% of dwellings without internet connection. Across the region, the internet was available in all townships, with local call rate access. In addition all libraries offer computers with internet access to students, staff and the general public for a range of purposes.

31.2.6 Land Use and Land Ownership Patterns

Land use within the region surrounding the project is a mix of large-scale grazing, cropping, and mining activity. Land use and tenure is described in **Chapter 14**. The seven leasehold properties that are either within or intersected by the project MLAs are all used for grazing. Details of these properties are outlined in **Table 31-14** below.

Table 31-14 Property Tenure

Lot	Plan	Tenure	Description and land use
1	CP905226	Lands Lease	Tenure: Grazing Homestead Perpetual Lease (GHPL) 30/4120
3	SP171922	Lands Lease	Tenure: TL 0/235865 Lessee: Colinta Holdings. Pty. Ltd. - Grazing
4	SP171921	Lands Lease	Tenure: GHPL 5/2123 Lessee: Private Individual - Grazing
14	SP225054	Lands Lease	Tenure: Term Lease (TL) 0/35642 Lessee: Colinta Holdings Pty. Ltd. - Grazing

Lot	Plan	Tenure	Description and land use
667	PH1321	Lands Lease	Tenure: Lands Lease (Mount Lookout Holding) Lessees: Private individuals - Grazing Tenure Reference Pastoral Holding (PH) 5/667
682	CP906890	Lands Lease	Tenure: Lands Lease (Suttor Creek Holding) Lessees: Private individuals - Grazing Tenure Reference TL 0/235783
689	SP251696	Lands Lease	Tenure: Lands Lease Lessee: Leichhardt Pastoral Pty Ltd - Grazing Tenure Reference TL 0/235359

Lot 689 SP251696 will experience the largest direct impact from the project relative to the property's size. This property is owned by a wholly owned subsidiary of Byerwen Coal Pty Ltd. Lot 3 SP171922 and Lot 14 SP225054 are leased by the same party and will experience direct impacts from the project. Lot 1 CP905226 and Lot 682 CP906890 will experience direct impacts from the project. Byerwen Coal will negotiate compensation arrangements with landholders that are directly impacted. Minor portions of Lot 4 SP171921 and Lot 667 PH1321 are within the project area but are not directly within the project footprint. Byerwen Coal will negotiate compensation arrangements with these landholders, if required.

Suttor North homestead (Lot 689 SP251696) will be vacated prior to any construction for the project. Wollombi homestead on Lot 1 CP905226 is unoccupied and will remain unoccupied for the life of the project.

31.3 Project Details

31.3.1 Project Timelines

The project is made up of a number of project phases, as follows:

- Construction South Phase (the first construction phase in Year -1.5 to Year 0)
- Construction and Operation South Phase (overlap of the first construction phase and commencement of operations in the south in Year 1)
- Operation South Phase (operations in the south in Year 2 to Year 14)
- Operation South/Construction North Phase (operations in the south and construction in the north in Year 15 to 17)
- Operation South and North Phase (operations in the south and north in Year 18 to end of project operations)
- Rehabilitation Phase.

31.3.2 Workforce Profile for Life of Project

An overview of the workforce requirements of respective project phases is outlined in **Table 31-15** below. These numbers represent the most accurate estimation of workforce numbers as at the date of EIS preparation.

Table 31-15 Estimated Workforce Numbers

Project Phase		Construction South			Construction and Operation South	Operation South				Operation South/ Construction North			Operation South and North						Rehabilitation	
Duration		1.5 years			1 year	13 years				3 years			29 years						2 Years	
Project period		-1.5yrs	-1yr	-0.5yrs	1yr	2yrs	3yrs	5yrs	14 yrs	15yrs	16yrs	17yrs	18yrs	19yrs	20yrs	30yrs	40yrs	46yrs	47yrs	48yrs
Construction workforce		40	265	350	40	-	-	-	-	40	265	130	-	-	-	-	-	-	-	-
Operational workforce		-	-	-	195	365	365	495	495	515	515	515	545	545	545	545	445	265	115	115
Operation workforce breakdown	Management staff				25	45	45	75	75	75	75	75	75	75	75	75	75	45	20	20
	Open cut				150	300	300	400	400	400	400	400	400	400	400	400	300	150	75	75
	CHPP				20	20	20	20	20	40	40	40	70	70	70	70	70	70	20	20
Total workforce		40	265	350	235	365	365	495	495	555	780	645	545	545	545	545	445	265	115	115

31.3.2.1 Construction Workforce Profile

There are two distinct construction phases. The first construction phase, construction south, is estimated to have a duration of 18 months to two years and require a peak workforce 350 personnel. **Figure 31-3** below provides an overview of the anticipated construction workforce required for construction south phase.

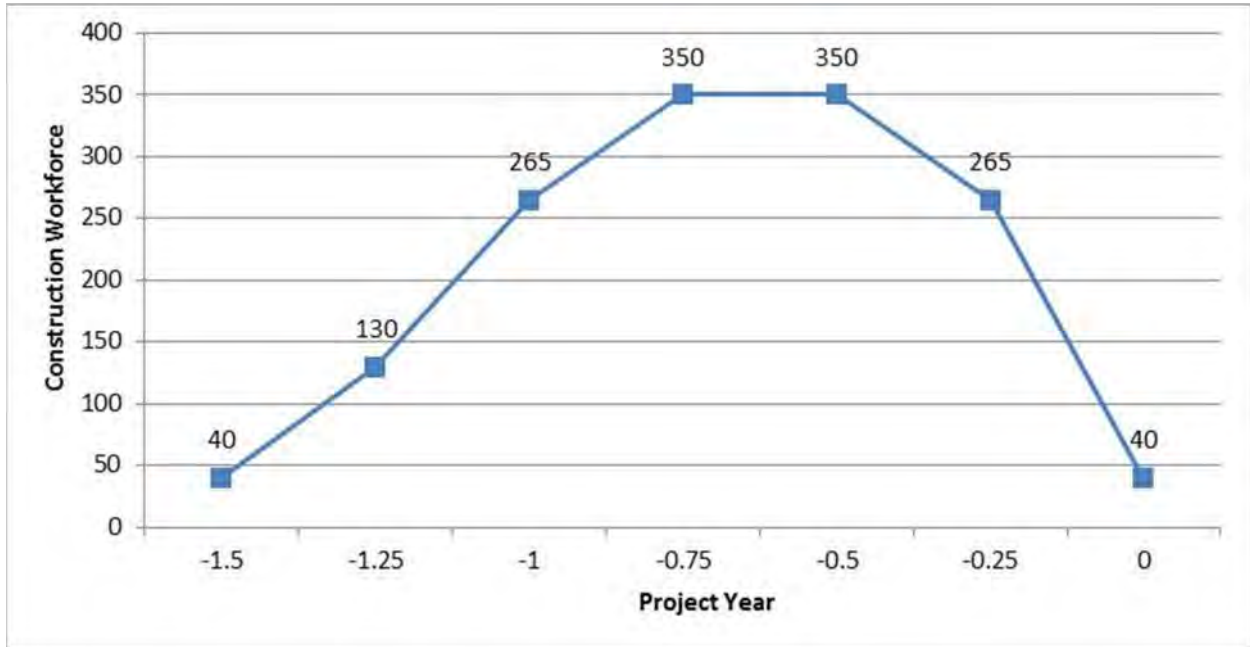


Figure 31-3 Byerwen Coal Project Construction Workforce - Construction South Phase

The second construction phase, construction north, overlaps with continuing southern operations and is estimated to have a duration of three years and require a peak workforce 265 personnel. **Figure 31-4** below provides an overview of the construction workforce required for the operation south/construction north phase.

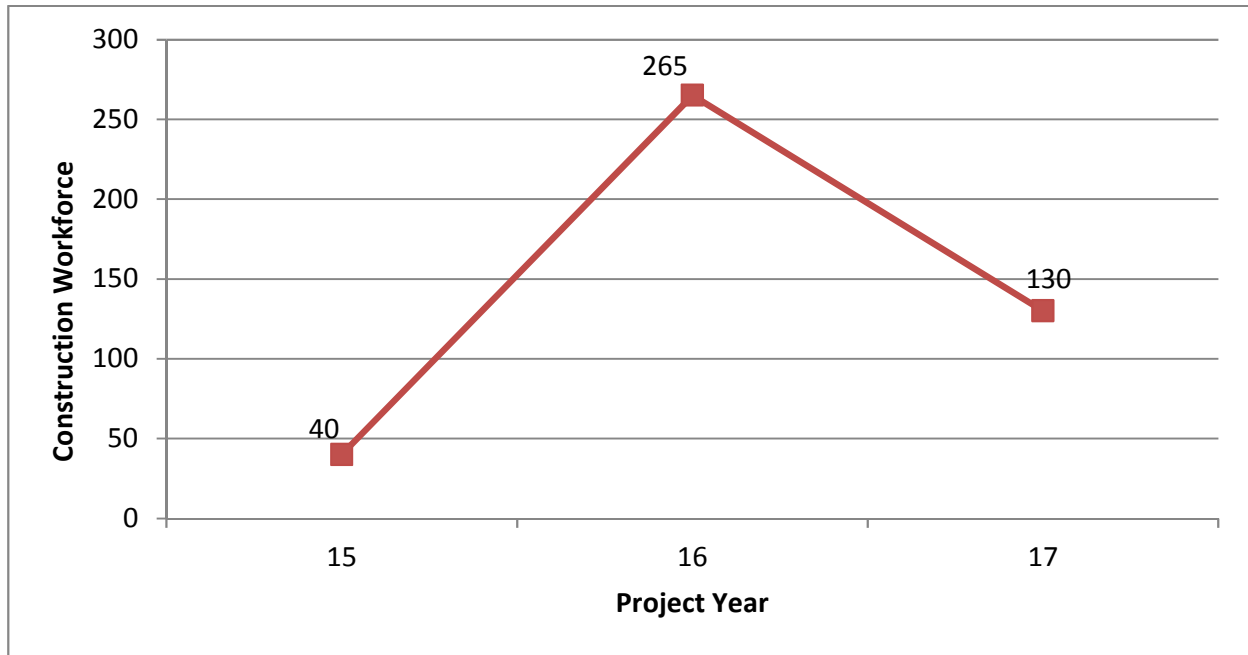


Figure 31-4 Byerwen Coal Project Construction Workforce - Operation South/Construction North

In terms of the skill sets required for each of the two construction workforces, they are expected to be relatively similar. An estimate of the specific occupations which will comprise the construction workforce is provided in **Table 31-16**.

Table 31-16 Jobs by Occupation for Construction Phases

Occupation	% of construction workforce
Management and administration	3%
Engineers	2.5%
Surveyors	1%
Supervisors/superintendent	5.5%
Civil plant operators	15%
Trade services and labourers	16%
Health, Safety, Security & Environment (HSSE)	2.5%
Heavy machinery operators	43%
Relief operators/operators in training	2.5%
Drill and blast team	10%
Total	100%

31.3.2.2 Operations Workforce Profile

The workforce required to operate the project builds up relatively quickly as the mine and first coal handling and preparation plant become operational. After reaching an initial peak of 495 personnel during the south operation phase (in project year 5), the operations workforce then grows again in project year 15 (operation south/construction north) as the north coal handling preparation plant comes on line. By the operation south and north phase (project year 18) the operations workforce reaches its peak of 545 personnel.

By project year 40 it is anticipated that parts of the mine will begin winding down with the workforce reducing to 265 personnel by project year 46. In year 47 and 48 the project will enter the rehabilitation phase. This will require an estimated workforce of 115 personnel.

The operations workforce is comprised of three primary sectors:

- Operations management and supervision – peak of 75 personnel
- Open cut mine operations – peak of 400 personnel
- Coal handling and preparation plant (CHPP) – peak of 70 personnel.

Figure 31-5 below provides an overview of the anticipated operations workforce required across the life of the project.

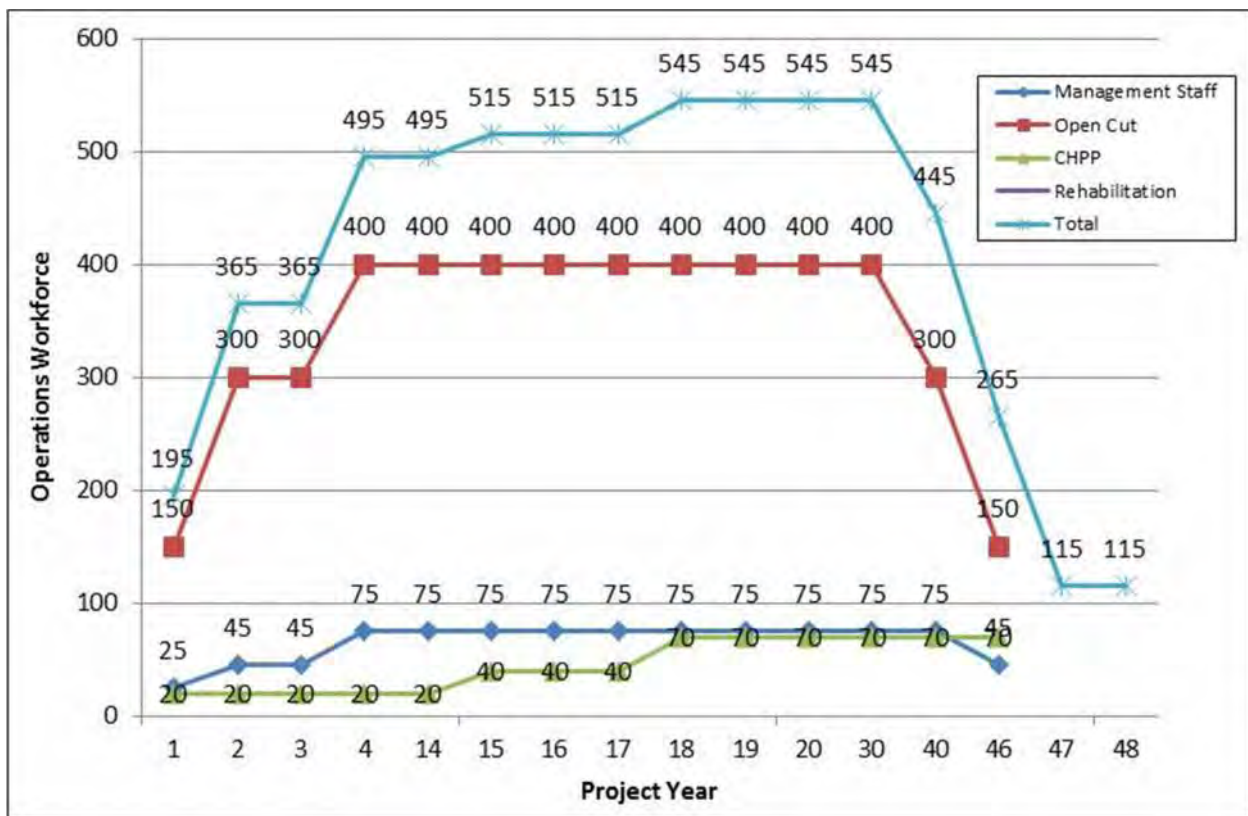


Figure 31-5 Byerwen Coal Project Operations Workforce

An estimate of the specific occupations which will comprise the operations workforce is provided in Table 31-17.

Table 31-17 Jobs by Occupation for Operations Phases

Occupation List	% of operations workforce
Managerial and supervisory staff	
Mine managers	2%
Engineers	20%
Geologists	18%
Surveyors	13%
Specialists	47%
Total	100%

Occupation List	% of operations workforce
Mining contractors (open pits and CHPP)	
Project managers	1%
Contract administrators	1%
Senior administration clerks	1%
Administration clerks	2%
HSSE	2%
Workshop managers	1%
Workshop leading hands	3%
Heavy duty plant fitters	9%
Trade services	7%
Production superintendents	1%
Mining supervisors	2%
Heavy vehicle and equipment operators	44%
Relief operators/operators in training	4%
Mining engineers	2%
Mining surveyors	1%
Drill and blast teams	20%
Total	100%

31.3.3 Workforce Transportation

31.3.3.1 Construction Workforce Transportation

The construction workforce will primarily commute to/from Glenden at the start and end of shift rosters. With respect to daily mobilisation of the workforce, personnel accommodated at the mine village will be transported to the mine site for their daily shift rotation via shuttle bus.

31.3.3.2 Operation Workforce Transportation

The operations workforce will be comprised of those who commute to/from Glenden at the start and end of shift rosters (7 days on, 7 days off roster) and those who live permanently in Glenden. It is likely that a proportion of those who commute will utilise private transport when starting and completing shift rotations, however bus transportation will be provided from key localities such as Mackay.

With respect to daily mobilisation of the workforce, both employees accommodated in the mine village and those in permanent accommodation will be transported to the mine site for their daily shift rotation via shuttle bus.

31.3.4 Workforce Accommodation Strategy

The Workforce Accommodation Strategy has been developed for the project and is outlined in **Appendix 31**. The strategy will be implemented based on the following guidelines:

- Byerwen Coal will secure land in Glenden for the facilities and ensure the development meets the required local government approval requirements
- facilities will be of a standard commensurate with other facilities in the Bowen Basin
- Byerwen Coal will select partners based on financial capacity and experience in design, construction and operation of similar facilities in the Bowen Basin

- Byerwen Coal will appoint facility operators to manage and maintain the facilities to meet all relevant industry standards
- Byerwen Coal is seeking to acquire sufficient land in Glenden so that there is flexibility and the ability to respond rapidly to changing demands for the quantity and style of housing.

If sufficient land in Glenden is unable to be acquired, accommodation will be provided at an alternative location outside of Glenden such as on or near the mining lease.

31.3.4.1 Construction Workforce Accommodation Requirements

The construction workforce will be accommodated in purpose-built accommodation designed for a temporary workforce. This village-style accommodation will be located separately and of a different standard to operations workforce accommodation in most cases.

Contractors will also utilise this accommodation.

The anticipated number of construction workers requiring this style of accommodation is shown in **Table 31-18** below.

Table 31-18 Construction Workforce Accommodation Plan

Timing	Construction workforce number	Accommodation provision (per # of workers)
Construction South Phase Year – 1.5 to Year 1	350 (maximum)	350 rooms (350 workers)
Operation South/Construction North Year 15	40	40 rooms (40 workers)
Operation South/Construction North Year 16	265	265 rooms (265 workers)
Operation South/Construction North Year 17	130	130 rooms (130 workers)

31.3.4.2 Operations Workforce Accommodation Requirements

Byerwen Coal’s Workforce Accommodation Strategy aims to maximise local residency as this will assist in management of employee turnover and absenteeism as well as strengthen the community.

The percentage of workers who will choose to live in Glenden will not be known until the workforce is employed and the workers make their choice of whether to live in town or commute to work. It is particularly difficult to assume this percentage based on existing conditions as it is currently a single-mine town and the shift to a town with multiple industrial developments, including the project, is likely to influence the number of people choosing to live in the town. This ratio may vary from time to time throughout the life of the mine.

With this in mind, Byerwen Coal is planning its initial quantities of operational worker accommodation based on an assumption that 30% of workers might choose to live in Glenden with 70% commuting at the start and end of shift rosters and staying in purpose-built accommodation villages during their roster. This percentage is solely for the purposes of initial accommodation planning. However, sufficient land is being sought prior to it being required in order to respond to the demand of workers’ accommodation choice. The percentage of 30% is lower than the current percentage of Xstrata mine workers living locally in Glenden and Byerwen Coal expects this will change over time in response to a range of conditions.

For the purpose of the accommodation plan, residents are assumed to prefer houses and duplexes while non-residents will be provided rooms at purpose-built accommodation villages. The duplexes include two self-contained units, each suitable for a single or couple and it is therefore assumed that one duplex will accommodate at least two workers and in some cases more.

The accommodation plan, in expectation of operations workforce accommodation requirements based on 30% resident and 70% non-resident workers, is provided in summary **Table 31-19**.

Table 31-19 Workforce Accommodation Plan – Operations*

Timing	Operation workforce number (based on 30% resident workers)	Accommodation provision (per # of workers)
Construction and Operation South Year 1	136 (non-res) 59 (res) 195 total (maximum)	<i>(Build as required for up to Year 14) – consider accommodation supply as Newlands Mine reduces its workforce through the decommissioning phase starting in 2024.</i>
Operation South Phase Years 2 – 14	346 (non-res) 149 (res) 495 total (maximum)	200 rooms (400 non-res workers) 120 houses (120 workers) 20 duplexes (50 workers)
Operation South/Construction North Phase Years 15 - 17	360 (non-res) 155 (res) 515 total (maximum)	<i>(As for yrs 2 – 14)</i> 200 rooms (400 non-res workers) 120 houses (120 workers) 20 duplexes (50 workers)
Operation South and North Phase Years 18 – 46	381 (non-res) 164 (res) 545 total (maximum)	<i>(As for yrs 2 – 14)</i> 200 rooms (400 non-res workers) 120 houses (120 workers) 20 duplexes (50 workers)
Rehabilitation Phase Years 47-48	80 (non-res) 35 (res) 115 total (maximum)	Manage reallocation of accommodation as workforce numbers reduce

*Indicative only – based on predictions of expected resident and non-resident workers

NB. With 7 days on/7 days off rosters, half of the total operational workforce will be on shift and requiring accommodation for each shift rotation

31.3.5 Financial Characteristics

The project is estimated to contribute significant economic benefits to the region and the wider domestic economy over the life of the project. Assessment of the economic benefits arising from the project is provided in **Chapter 30**.

31.4 Potential Impacts

This section discusses the potential social impacts associated with the construction, operation and decommissioning of the project. The impacts discussed in this section have been identified through a number of concurrent processes including direct engagement with potentially affected stakeholders, both through the project community consultation strategy and the SIA stakeholder engagement

program. Complementing direct engagement, impacts have been defined through the assessment of project effects against the attributes of the existing social environment as outlined in **Section 31.2**. Lastly, the assessment has drawn upon the knowledge and insight held by members of the SIA team and the application of best practice impact assessment methodology to identify and evaluate social impacts associated with the project.

The assessment of identified impacts has been undertaken through an impact significance assessment methodology. In this approach, the significance of an impact is assessed by considering the sensitivity of social values and the magnitude of a predicted impact. This approach assumes the identified impacts will occur, and focuses on developing a comprehensive understanding and assessment of the impacts and the value it will affect.

Central to the assessment method is the identification of social values associated with the potentially affected community. The social values examined for the assessment of social impacts associated with the project include the following:

- Demographic and demographic change
- History and heritage (non-indigenous)
- Indigenous community
- Housing and accommodation
- Residential amenity
- Employment, education and training
- Local economic conditions
- Health and safety
- Community infrastructure and social services
- Social identity and cohesion.

The sensitivity of a social value to the effects of a potential impact is derived through consideration of the fundamental characteristics of the existing social environment (expressed through both quantitative and qualitative measures) along with an appreciation of the attachment or importance held by the community either to the value or the potential impact. The magnitude of a potential impact with respect to a particular value is an assessment of the extent, duration and severity of the impact. As outlined in **Table 31-20**, the overall significance of an impact is determined by assessing the sensitivity of a social value against the magnitude of a potential impact.

Table 31-20 *Significance Assessment Matrix*

Magnitude of impact	Sensitivity of Social Value or Receptor		
	High	Moderate	Low
High	Major	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Negligible

31.4.1 Demographics and Demographic Change

The following provides an overview of the likely changes to population and demography attributable to the project’s constructions and operations workforce.

31.4.1.1 Construction Workforce

Due to the current use of available skills in Glenden, it is likely that the entirety of the construction workforces for both construction phases will need to be sourced from outside of the local area. It is anticipated that the majority of the required construction workforces may be sourced from the broader region, defined as the Northern Bowen Basin.

The temporary and transient influx of up to 350 construction workers (construction south phase) into Glenden represents a 10.3% increase to the estimated FTE population (3,413) or a 19.5% increase to the 2011 resident population (1,793). The impact of this population increase is limited as shift scheduling and accommodation arrangements mean that members of the workforce will have limited opportunity to interact with the broader community.

The presence of the construction workforce is unlikely to substantially alter the existing demographic balance of Glenden as the construction workforce is likely to exhibit relatively young median age and constitute a relatively higher proportion of males - both of which are existing demographic features of the population of Glenden. Population and demographic effects associated with the construction workforce represent an impact of low sensitivity and moderate magnitude, resulting in a significance rating of **low**.

31.4.1.2 Operation Workforce

The operation workforce requirement reaches a peak of 495 personnel during the south operation phase. There will be requirements for additional operation workforce personnel as the north coal handling and preparation plant comes on line (operation south/construction north phase). The operation workforce reaches its peak with 545 personnel required by the operation south and north phase.

Employment opportunities will be open to local residents in Glenden however as residents are predominantly employees or families of employees of Xstrata it is highly likely that the majority of the operations workforce for the project will need to be sourced from outside the town.

As outlined in the Workforce Accommodation Strategy (**Section 31.3.4**) Byerwen Coal intends to provide a range of accommodation options so that the workers sourced from outside Glenden have a genuine choice of where they would like to live – either locally or remotely in which case they will be able travel in and out of town for their shift rosters.

The percentage of workers who will choose to live in Glenden will not be known until the workforce is employed and the workers make their choice of whether to live in town or commute to work. For the purpose of assessing impacts relating to population demographic change it is assumed 30% of workers will choose to live in Glenden with the remaining 70% living remotely and commuting at the start and end of shift rosters.

It is assumed that the mix of households for those employees who choose to reside permanently in Glenden will exhibit similar demographic characteristics to that of the existing population, with:

- 45% being families with children (assumed 4 person household)
- 22% being in couples (assumed 2 person household)
- 33% being single.

Applying the assumptions outlined above, for the initial phase of operations, south operation phase (project years 1- 15), it is assumed 149 employees of the 495 total workforce will choose to reside locally. With the addition of family members and the partners of these employees, the initial phase of operations will result in a total resident population impact in Glenden of 383 persons. This represents an increase of approximately 21% to the 2011 population of Glenden.

When the project becomes fully operational during the operation south and north phase and the workforce comprises 545 personnel, it is assumed an additional 15 employees will choose to reside locally. Using the demographic characteristics above this will result in an additional 39 persons living in Glenden, when taking into account employee families and partners. Therefore the total predicted resident population impact associated with the operations workforce is 421 persons. This represents an increase of 23% to the 2011 population of Glenden.

In addition, the economic stimulation generated by the project as a result of wages along with additional demand for goods and services will generate additional ‘service’ employment and subsequent population growth. Employment multipliers associated with mining projects will vary according to the attributes of a particular locality. In the case of Glenden, it is expected that service population growth may be inhibited by the lack of an open housing market as housing is predominantly provided by mining employer organisations. This results in a very small supply of rental accommodation and uncertainty as to the true value of housing stock, which may serve to inhibit investment. Taking these considerations along with the remote locality of Glenden into account, a conservative multiplier of 0.3 is adopted (i.e., for each employee that resides in Glenden a 0.3 FTE will be created). Adopting the same demographic characteristics as those outlined above results in additional service population growth in Glenden of 116 (45 FTE positions) for the first phase of operations and 126 (49 FTE positions) when the project is fully operational.

A summary of expected population effects associated with the operations workforce is provided in **Table 31-21** below.

Table 31-21 Population Effects (Operations Workforce)

Operational Workforce	545 employees
% likely to reside locally	30%
% likely to be existing residents	0%
Number of operational employees re-locating to local area	164 employees
Number of multiplier FTE positions created in local area	49
Proportion of new residents with families	45% (96 families/ 384 persons)
Proportion of new residents in couples	22% (47 couples/ 94 persons)
Proportion of new residents single	33% (70 persons)
Total estimated population increase	548 persons

The estimated addition of 548 permanent residents represents a 31% increase to the existing population of Glenden. Population and demographic effects associated with the operations workforce have a moderate level of sensitivity and moderate level of magnitude and therefore a **moderate** level of significance.

Change to the present demographic characteristics of the resident population of Glenden through both the construction and operation phases is assessed as being of low sensitivity, low magnitude and thus is of a **negligible** social significance.

31.4.2 History and Heritage (Non-indigenous)

The project area extends into agricultural land and may thereby affect the heritage of agricultural land usage and properties. As outlined in **Section 31.2.6** a number of properties will be directly impacted from the project. Byerwen Coal is negotiating compensation arrangements with landholders that are directly impacted. For those properties within the project area but not directly within the project

footprint, Byerwen Coal will negotiate compensation arrangements with these landholders, if required. Impacts relating to historical cultural heritage are described in **Chapter 29**.

The social impacts relating to non-indigenous history and heritage correspond to impacts on history and heritage identity. Given that Glenden is an existing town in a rural community there is a likelihood of a sense of diminished rural and agricultural identity with the increase in the population of the town. This is an issue of high sensitivity but low magnitude and is thus assessed as being of **moderate** social significance.

31.4.3 Indigenous Community

A significant contemporary impact upon indigenous people will be the manner in which the native claim titles within the mining lease are resolved. In addressing this impact, Byerwen Coal will need to manage the relationships with the indigenous people in the area and seek opportunities to involve them in all relevant opportunities such as employment and skill development.

Thus the project has capacity to impact on indigenous people residing in Glenden and the broader region in a positive way via the provision of employment, education and training opportunities. The provision of such opportunities is assessed as being of moderate sensitivity and of moderate magnitude and thus is considered to be a positive impact of **moderate** significance.

The potential for the project to impact upon indigenous people's artefacts and sites in Glenden and the regional area is an impact of moderate sensitivity and moderate magnitude. Byerwen Coal has entered into Cultural Heritage Management Plans with the relevant Aboriginal Parties for the project area being the Birriah People and Jangga People. The impact is therefore assessed as being of **moderate** significance.

In addition, the project has the potential to provide increased business opportunities for Traditional Owners. This positive impact is assessed as being of moderate sensitivity and of moderate magnitude and thus is considered to be a positive impact of **moderate** significance.

31.4.4 Housing and Accommodation

The population effects associated with any project have the potential to impact upon the local availability and affordability of housing and accommodation. In Australian communities, housing typically carries levels of meaning greater than merely the provision of adequate shelter, although this is one of our most basic social needs. The concept of the home and home ownership carries cultural values and any threat to these values carries a concomitant degree of sensitivity.

The concept of home and home ownership is not of immediate relevance to Glenden because it is a mining town in which accommodation is provided to employees. As such the project will not have any material impact on the existing housing affordability. The existing housing and accommodation capacity in Glenden does not have the capability to meet project accommodation demands.

The need to provide temporary accommodation in Glenden to meet the needs of the construction phase is an issue of moderate sensitivity and moderate magnitude, and is thus assessed to be of **moderate** significance.

The requirement for permanent accommodation for employees entering the town and the broader region during operations is assessed as being of high sensitivity, moderate magnitude and therefore **high** social significance.

31.4.5 Residential Amenity

Residential amenity links with environmental health and refers to all aspects of the natural and built environment that may affect human health and wellbeing. This includes factors such as town facilities plus air quality, noise levels, contamination of land or water sources, offensive odours or lighting and

any other environmental factors which have the potential to alter the health status of members of the community.

There are a number of aspects associated with construction of housing and accommodation that have the potential to affect the prevailing level of environmental health in the town of Glenden. Residential amenity is likely to be affected through increased vehicular movements in residential areas in Glenden, particularly during the proposed shift changeover times of 6am and 6pm, as well as changes to the existing urban design of Glenden, and increased demand upon municipal infrastructure such as roads and facilities.

These residential amenity issues have been ranked as being of moderate sensitivity and of moderate magnitude, and are thus assessed to be of **moderate** significance.

31.4.6 Employment, Education and Training

The construction phases will generate continued employment in Glenden and the broader region. This positive impact has been assessed as being of moderate sensitivity and moderate magnitude, therefore it is of **moderate** social significance.

The operations phases of the project will also generate and maintain employment in Glenden and the region. Due to the relative longevity of operations employment in comparison with construction work which is usually undertaken by contractors, this impact has been assessed as positive and as being of high sensitivity, moderate magnitude, and thus of **high** social significance.

Coupled with the creation of employment is the potential of the project to contribute to the creation of a regional skills shortage. This negative impact has been ranked as being of moderate sensitivity and of moderate magnitude, and is thus assessed to be of **moderate** social significance.

Associated with the creation of employment opportunities, is the stimulation of training and skills development, both locally in Glenden and in the broader region. Residents in the broader region will become aware of the employment opportunities which the project will create and will seek to develop the skills and capabilities required to attain such employment. Such a stimulation of demand for specialist training and skills development may be met by either public (schools, technical colleges etc.) or private sector providers, and training courses to be offered by the project.

Targeted training courses may be provided through Vocational and Educational Training organisations such as TAFE and or other private accredited training providers. Members of the regional communities most in need of training opportunities, such as unemployed persons and underemployed sectors of the community, stand to benefit if training is orientated so as to encourage participation. The stimulation of training and skill development opportunities is a positive social impact that has been ranked as being of moderate sensitivity and of moderate magnitude, and is thus assessed to be of **moderate** social significance.

31.4.7 Local Economic Conditions

The project will have a direct impact on local economic conditions in Glenden and the broader region through the creation of opportunities for local businesses, particularly during the construction and operations phases. Such positive project effects are assessed as being of moderate sensitivity and moderate magnitude, and thus of **moderate** social significance for the community of Glenden and the broader region.

In addition, the project is likely to produce an injection of wealth into the local and regional economy during the construction and operations phases. This positive impact has been assessed as being of high sensitivity and moderate magnitude, and thus of **high** social significance.

Due to numerous competing projects and existing high levels of demand for skilled labour, the project may contribute to the constrained availability of certain skills in the local and regional area. Such a

constrained labour market may affect local businesses in terms of attracting and retaining skilled staff. Despite the history of Glenden as a mining town, this potentially negative effect is considered to have a moderate level of sensitivity and a moderate level of relative magnitude and subsequently a significance rating of **moderate**.

Further negative effects are likely to arise due to the potential for an increase in the cost of living in the local area during the construction and operations phases. This negative impact has been assessed as being of moderate level of sensitivity and a moderate level of relative magnitude and subsequently a significance rating of **moderate**.

31.4.8 Health and Safety

The larger population drawn to Glenden via the project will have an effect on the community due to an increased number of shift workers living in the town that has the potential to create traffic-related incidents during the construction and operations phases. This negative impact has been ranked as being of moderate sensitivity and of moderate magnitude, and is thus assessed to be of **moderate** social significance.

Social health effects may be generated via an increase in challenges to family life particularly where workers are engaged in shift work and commuting arrangements. This negative impact has also been ranked as being of high sensitivity but of low magnitude, and is thus assessed to be of **moderate** social significance.

Due to the increase in population there is also likely to be an increase in real or perceived deterioration in the safety and security currently enjoyed by Glenden residents. This negative effect is considered to have a moderate level of sensitivity and a moderate level of relative magnitude, and subsequently a social significance rating of **moderate**.

31.4.9 Community Infrastructure and Social Services

Community health and wellbeing refers to influences other than direct environmental health factors that contribute to the way in which people interact with and enjoy the community they live in. Community health and wellbeing also relies on the provision of adequate community infrastructure and social services required to support a community. At a basic level this refers to feelings of inclusiveness and a sense of community connection. On the whole, people enjoy living in a community which is cohesive, resilient and provides an environment with community infrastructure and social services that are conducive to attaining a sense of fulfilment. Project impacts on community infrastructure and social services associated with the project are described below.

31.4.9.1 Health Services

The increase in population created by the project construction and operational workforces will have an effect on the demand for medical health services including allied health, mental and emergency health services located in Isaac LGA. This increased demand will therefore contribute to a shortage of supply of such services.

The increased demand on health services in Glenden has been assessed as being of high sensitivity and of moderate magnitude and thus of **high** social significance.

31.4.9.2 Essential Services

Essential services such as water supply, sewage, electricity, telecommunications and waste management will typically be limited in terms of the number of people it has the capacity to supply. In the case of Glenden, the capacity of essential services corresponds to a population of 5,000. As the current population of Glenden is 1,793 the current essential services have the capacity to handle the increased demand associated with the population increase due to the project construction and

operation workforces. Upgrades to the current essential services networks may however be required to service the permanent and temporary accommodation facilities associated with the project.

The increased demand on essential services in Glenden has been assessed as being of moderate sensitivity and of moderate magnitude and thus of **moderate** social significance.

31.4.9.3 Emergency Services

There is likely to be an increased demand on emergency services in Glenden during the construction and operations phases. For example, regional emergency services such as ambulance, police and fire services may incur higher call out rates. With respect to SES, the stimulation of population and economic growth will ensure that the Department of Community Safety continues to support SES volunteers in the community.

This has been assessed as being of high sensitivity and of moderate magnitude and thus of **high** social significance.

31.4.9.4 Education Services

The influx of additional permanent residents to Glenden is likely to result in additional patronage of Glenden State School. As Glenden State School has the capacity to handle this additional patronage the project is expected to have a positive impact in terms of the increased demand on educational services which in turn supports the additional state government provided resources, educational choices and facilities. This positive impact has been assessed as being of high sensitivity and of moderate magnitude and thus of **high** social significance.

31.4.9.5 Recreational Facilities and Services

Recreation and leisure is associated with the provision of community and municipal infrastructure. An increased local population is likely to result in a revitalisation of the involvement and participation of residents in community life and recreational activities in Glenden with an accompanying increased usage of local recreational infrastructure. Whilst Glenden provides some recreational infrastructure this may become utilised to a higher degree than present and subsequently require sufficient maintenance and upkeep. Other forms of recreational infrastructure such as increased sporting and leisure facilities may need to be supplied to cater to the differing needs of families in contrast to a predominantly young, male workforce. The project is likely to have an overall positive impact on the community due to increased usage of recreational facilities and services. This impact has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance.

31.4.9.6 General Community Infrastructure

The project is likely to have a positive impact on the community due to increased usage of general community infrastructure such as halls and meeting spaces due to increased participation by new members of the workforces. This positive impact has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance. At the same time, the project is also likely to have a negative impact on the community due to increased usage of general community infrastructure such as halls and meeting spaces, particularly during the operations phase. Increased usage is likely to result in insufficient space, and wear and tear on facilities. This negative impact has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance.

31.4.9.7 Land Allocation for Community Infrastructure and Social Services

A further consideration is land allocation for the provision of land for social and commercial services. This impact has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance.

31.4.10 Social Identity and Cohesion

New permanent residents in the community, particularly in a town of the size of Glenden, can alter the existing social balance. The project is likely to create a negative impact during the operations phase in terms of changing the existing social identity of Glenden. This impact has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance.

Changes to Glenden may have a positive effect over time. A new mine with an intended 50 year life will provide continuity of employment prospects and is perceived as a mechanism to keep families in the district. Residents advised during consultation that they would like the population to grow via the introduction of new industry accompanied by improved services and social infrastructure. There is likely to be a reinvigoration of the Glenden community with the influx of the project workforce. As discussed above the project is likely to have a positive impact on the town of Glenden with respect to the supply of social infrastructure and services as it will reinvigorate existing education and recreational infrastructure and stimulate an increase in the supply of medical and emergency services. This is a positive impact that has been assessed as being of moderate sensitivity and moderate magnitude, and thus is of **moderate** social significance.

The relatively large population increase associated with the construction and operations phases of the project has the potential to reduce community cohesion and negatively affect perceptions of safety and security, particularly if there is an associated increase in anti-social behaviour perpetrated by employees of the project. However, the staging of the project provides some relief from the potential development of an ‘us and them’ culture. While the influx of new residents to Glenden is predominantly a positive impact, such issues carry a moderate degree of sensitivity and moderate magnitude and have been rated as being of **moderate** significance.

31.4.11 Summary of Impacts

A summary of potential social impacts associated with the project is provided in **Table 31-22** below.

Table 31-22 Summary of Potential Social Impacts

Potential Impact	Phase	Positive/negative	Sensitivity	Magnitude	Significance
Demographics and demographic change					
Population growth associated with construction workforces	Construction	Negative	Low	Moderate	Low
Population growth associated with operation workforces	Operation	Negative	Moderate	Moderate	Moderate
Change to demographic characteristics of resident population of Glenden	Construction	Negative	Low	Low	Negligible
	Operation				
History and heritage (non-indigenous)					
Diminished rural and agricultural identity resulting from direct land use changes and development of a non-agricultural enterprise	Construction Operation	Negative	High	Low	Moderate
Indigenous community					

Potential Impact	Phase	Positive/negative	Sensitivity	Magnitude	Significance
Increased employment, education and training opportunities	Construction Operation	Positive	Moderate	Moderate	Moderate
Increased business opportunities for Traditional Owners	Construction Operation	Positive	Moderate	Moderate	Moderate
Loss or destruction of items or areas of heritage value	Construction Operation	Negative	Moderate	Moderate	Moderate
Housing and accommodation					
Increased temporary accommodation requirements	Construction	Negative	Moderate	Moderate	Moderate
Increased permanent accommodation requirements	Operation	Negative	High	Moderate	High
Residential amenity					
Amenity effects associated with increased traffic in residential areas	Construction Operation	Negative	Moderate	Moderate	Moderate
Changes to existing urban design of Glenden	Construction Operation	Negative	Moderate	Moderate	Moderate
Increased demand on existing municipal infrastructure	Construction Operation	Negative	Moderate	Moderate	Moderate
Employment, education and training					
Generation of construction employment	Construction	Positive	Moderate	Moderate	Moderate
Generation of operations employment	Operation	Positive	High	Moderate	High
Stimulation of training and skill development opportunities	Construction Operation	Positive	Moderate	Moderate	Moderate
Contribution to regional skills shortage	Construction Operation	Negative	Moderate	Moderate	Moderate
Local economic conditions					
Generation of opportunities for local businesses	Construction Operation	Positive	Moderate	Moderate	Moderate
Injection of wealth into local and regional economy	Construction Operation	Positive	High	Moderate	High
Difficulties attracting and retaining skilled staff	Construction Operation	Negative	Moderate	Moderate	Moderate
Increase to cost of living in local area	Construction Operation	Negative	Moderate	Moderate	Moderate
Health and safety					

Potential Impact	Phase	Positive/negative	Sensitivity	Magnitude	Significance
Traffic-related incidents due to increased population	Construction Operation	Negative	Moderate	Moderate	Moderate
Social health effects associated with commuting and shift work.	Construction Operation	Negative	High	Low	Moderate
Real or perceived deterioration of the safety of Glenden	Construction Operation	Negative	Moderate	Moderate	Moderate
Community infrastructure and social services					
Increased demand on health services	Construction Operation	Negative	High	Moderate	High
Increased demand on essential services	Construction Operation	Negative	Moderate	Moderate	Moderate
Increased demand on education services	Operation	Positive	High	Moderate	High
Increased demand on emergency services	Construction Operation	Negative	High	Moderate	High
Increased usage of recreational facilities and services	Operation	Positive	Moderate	Moderate	Moderate
Increased usage of general community infrastructure (halls, meeting spaces etc.)	Operation	Positive & Negative	Moderate	Moderate	Moderate
Lack of land allocation for provision of social and commercial services	Operation	Negative	Moderate	Moderate	Moderate
Social identity and cohesion					
Social identity of Glenden changed	Operation	Negative	Moderate	Moderate	Moderate
Reinvigoration of the Glenden community	Operation	Positive	Moderate	Moderate	Moderate
Social friction resulting from creation of an 'us and them' dynamic	Operation	Negative	Moderate	Moderate	Moderate

31.5 Mitigation Measures and Management Strategies

Byerwen Coal has developed five individual action plans based on key themes drawn from social research and stakeholder consultation. These action plans represent proposed measures to be undertaken once the project is approved to proceed. The actions plans are included as part of the SIMP provided as **Appendix 10**.

The action plans are detailed under the following themes:

- Housing and Accommodation.
- Employment, Training and the Local Economy.

- Indigenous Community.
- Social Identity and Cohesion.
- Health and Community Infrastructure.

This section provides details of the mitigation measures, included as part of the actions plans, relevant to identified social impacts associated with the project assessed as having a moderate, high or major level of significance (as outlined in **Section 31.4**). Mitigation measures are presented in this section under applicable impact categories.

Details of the project management strategies are also provided in this section including the Workforce Management Strategy and Regional Procurement Program.

Key to the effectiveness of any mitigation measures and management strategies is implementation by the relevant responsible party or parties. It should be recognised some of the mitigation measures and management strategies will be required to be implemented by the contractor selected to undertake construction and operational activities.

Some of the mitigation measures and management strategies outlined below are detailed with reference to QCoal Pty Ltd (QCoal). It should be noted that Byerwen Coal is a joint venture between QCoal and JFE Steel. QCoal currently has two operational mines – Sonoma Mine and Jax Bulk Sample Project – and a number of mines under development in the Northern Bowen Basin, including the proposed project. As such references to QCoal are made throughout this section where activities have/will be undertaken for the project in conjunction with other QCoal projects. QCoal may also be referenced where QCoal is responsible for implementing initiatives such as the QCoal Foundation and industry presentations.

Mitigation measures and management strategies will also be further developed and implemented in partnership with local government, state government agencies and other proponents to enable the provision and maintenance of a healthy and functioning social environment. Specific key partnerships associated with the project are outlined in **Section 31.5.1** below.

31.5.1 Key Partnerships

31.5.1.1 Glenden Stakeholder Engagement Group

The Glenden Stakeholder Engagement Group (SEG) was initiated by Xstrata and operates with the objective of keeping the community and other stakeholders informed about the progress of industry and projects in the area. As a neighbouring project QCoal has been invited to join.

The SEG invites representation from government, industry and community and provides an avenue to address priority issues through effective partnerships. The SEG also provides local project updates to the broader community and has the opportunity to check the progress of mitigation and management measures being implemented to address any social impacts.

31.5.1.2 Health Services

QCoal is committed to the health of the communities in which it operates and will continue to engage with health care and emergency service providers in Glenden and surrounding areas to understand arising issues and strategies to address them.

One of QCoal's key partnerships is with the Royal Flying Doctor Service (RFDS). QCoal recognises the lack of access to oral health facilities in these regional communities and has developed a mobile dental initiative in partnership with the Royal Flying Doctor Service. QCoal is underwriting the funding of the service for at least the first three years, which the RFDS has estimated could be at a cost of between

\$600,000 and \$1,000,000 a year. The Australian Government provided over \$1,000,000 towards the funding for the dental truck and trailer in 2012 with the service expected to be launched in early 2013.

31.5.1.3 QCoal Community Grants Program

In addition to the rates that will be paid by the mine to the Whitsunday and Isaac Regional Councils, QCoal contributes to community support services through its Community Grants Program through Sonoma Mine. The program was established to encourage productive partnerships with the community of Collinsville and surrounding areas, enriching the lives of community members. With new QCoal mines under development and in operation and an ongoing commitment to support the community, the QCoal Foundation has been established. The Foundation, which will incorporate the Sonoma grants program and other giving initiatives, will provide financial contributions to improve and assist community services in the region. To date, through rates and this grants program, Sonoma Mine has contributed over \$2.9 million to council and the Collinsville and nearby communities. It has also contributed over \$140 million in royalty payments to the Queensland Government. A budget in line with this level of contribution will be set for the Glenden component of the QCoal Foundation's grants program once the project is approved.

31.5.2 Contractor Workforce Management Plan

QCoal encourages local and regional residents to take up employment opportunities at its mines to assist in staff retention and strengthen the local communities and economies in which it operates. QCoal's contractors employ the majority of the workforces and they will develop workforce management plans to outline their approach to workforce recruitment and management.

QCoal will generate new opportunities to assist with skills development, such as educational bursaries through its community grants program. Contractors are expected to enhance employment opportunities for all groups including underrepresented groups by providing training, skills development and employment organisations with regular updates about workforce requirements. Only contractors with a commitment to implementing skills and training programs will be considered in the selection for project operations.

The contractors' workforce management plans should include:

- likely locations from which the workforce could be sourced
- contact details for local recruitment and skills development organisations with which partnerships would be established to ensure awareness of requirements and opportunities
- equal opportunity employment policy
- details of opportunities for structured training (e.g. apprenticeships, traineeships, graduate support programs) related to the workforce needs of the project.

31.5.3 QCoal's Workforce Management Strategy

QCoal's workforce management strategy, which will be consistent with the selected contractors approach, includes consideration of the elements describes in the sections below.

31.5.3.1 Recruitment Strategy/Workforce Sourcing

Byerwen Coal's contractors will be responsible for the recruitment of the majority of the workforce. With respect to sourcing the workforce, the main populated area in vicinity of the work site is the town of Glenden. Glenden residents are predominantly employees or families of employees of Xstrata and while employment opportunities will be open to local residents it is highly likely that the majority of the workforce for both phases of the project will need to be sourced from outside the town.

Byerwen Coal intends to provide a range of accommodation options so that the workers have a genuine choice of where they would like to live – either locally or remotely in which case they will be able travel in and out of town for their shift rosters.

The broader region from which workers may be sourced include the surrounding towns of Nebo, Moranbah, Collinsville, Bowen, Proserpine, Airlie Beach, Ayr and Home Hill as well as population centres including Mackay and Townsville. It is anticipated that workers in these locations who do not choose to live locally will drive or be transported by bus into town at the start of their shift roster and stay in purpose-built, temporary accommodation villages for the duration of their shift.

In addition, Byerwen Coal will link with the Newland's Detailed Mine Closure Plan, which is to be completed five years prior to the proposed closure of that mine, to attract members of the workforce who will be leaving the Newland's project and searching for employment in the region.

Byerwen Coal's contractors will ensure relevant organisations such as Skills Queensland, WM&D, FIFO Coordinators and employment agencies have access to workforce profile information such as that contained within this report and will continue to liaise about other opportunities that could be developed to achieve a higher proportion of local and regional employees.

Byerwen Coal will aim for a target of 80% of its workforce to live within the Mackay, Isaac and Whitsunday regions.

31.5.3.2 Indigenous Employment

Byerwen Coal will encourage its contractors to be culturally sensitive in terms of communication and process to the recruitment of indigenous people and to mentor, up-skill and retain indigenous employees. Byerwen Coal will require that the principal mining contractor provides the opportunity for two indigenous people to be employed at the project as well as adhere to the commitments set out in the Cultural Heritage Management Plans (CHMPs).

Byerwen Coal will continue to work in collaboration with relevant traditional owners to increase the number of indigenous workers at the mine and will establish a revised employment target once the mine is operational. This target will be set and amended based on a number of factors including:

- response levels by indigenous workers to advertised employment opportunities
- response and performance in relation to mentoring and training programs
- existing number of indigenous employees at the mine
- average duration of employment.

31.5.3.3 Employment of Women

QCoal is committed to supporting and encouraging its female workers to continue a career in mining and related disciplines. QCoal wishes to encourage more women into these careers and to increase the proportion of female workers at its mines by promoting career development opportunities for women.

Byerwen Coal will establish an employment target for women once the mine is operational. This target will be set and amended based on a number of factors including:

- response levels by women to advertised employment opportunities
- response and performance in relation to employee mentoring and training programs
- existing number of female employees at the mine
- average duration of employment.

31.5.3.4 Employment Opportunities for Persons with a Disability

Byerwen Coal will encourage its contractors to liaise with disability employment organisations to assist job seekers with disabilities, learning difficulties, injury or medical condition gain employment at the mine.

31.5.3.5 Workers Code of Conduct

A code of conduct will be developed for both the construction and operational workforce. The code of conduct will be linked to employee contract conditions and will include:

- compliance with relevant state, territory and Commonwealth laws
- 'zero tolerance' for drug and alcohol use whilst working monitored through mandatory drug and alcohol testing
- minimum workforce behavioural standards with consequences for non-compliance including dismissal for serious non-conformances or repeated offences
- being respectful of the communities within which they work and visit and refrain from any behaviour which could be harmful and/or result in negative impacts on the communities
- using work vehicles appropriately and in accordance with the company's policies regarding transportation to and from the site.

All workers will be required to adhere to the code of conduct when on shift, staying in contractor provided accommodation, travelling to and from accommodation locations and when undertaking work related responsibilities (e.g. when in uniform or attending work related functions). The code of conduct will be applicable to all employees, contractors, sub-contractors and consultants with penalties for non-adherence.

31.5.3.6 Worker Health, Safety and Wellbeing

In order to retain and attract workers and provide long term career pathways Byerwen Coal and its contractors will include conditions around worker health, safety and wellbeing strategies in their employment approach. These would include, but are not limited to:

- provision of medical services for workforce while at work
- provision of transport from airports/key locations to mine/accommodation facility at the start and end of shift rosters
- provision of transport between accommodation facilities and the mine for the daily shifts
- access to counselling services
- development and implementation of safety and health policies
- provision of information about programs such as:
 - financial planning and management
 - superannuation
 - housing or other financial investments
 - health and fitness programs
 - fatigue management
- health care providers and other representatives will be invited to make presentations to workers to educate on preventative health and wellbeing initiatives.

In addition to contractor responsibilities QCoal will support programs that address needs of the workers and their families who may choose to relocate to live locally. These programs will include:

- workforce integration and cohesion programs through increased support and partnership with local community organisations
- contribution to initiatives to improve the liveability of local towns for example providing assistance to organisations that organise and promote community activities and events
- provision of information in induction packs to enable workers and their families to collate their health records providing medical staff with critical information prior to any medical incident.

31.5.3.7 Education and Training

Byerwen Coal will maintain regular liaison with educational and training organisations about future workforce requirements to assist them in shaping their programs to respond to demand. There are numerous organisations and facilities offering educational and training services in the region, including in Bowen, Townsville and Mackay, such as the Barrier Reef Institute of TAFE and Registered Training Organisations. These facilities offer courses ranging from basic certification courses to apprenticeships and associate degrees. In addition federal and state government programs are available to assist with fees and other expenses. However, in order to attract and retain staff and ensure that an appropriately skilled workforce is engaged, Byerwen Coal will encourage the contractors to provide project-specific training opportunities.

The principal mining contractor will be required to:

- maintain regular contact with organisers of training programs for up-skilling workforce, obtaining appropriate health and safety education and appropriate certification
- provide the opportunity for at least two apprentices per year across their operations
- provide employee induction and toolbox meetings (covering aspects of worker behaviour, company expectations, community perceptions of behaviour, health record, etc.).

Byerwen Coal will aim to support trainees and graduate students in its operations as well as offer a target of two education grants per year for tertiary studies. QCoal currently supports eight students in the Collinsville area with education grants and this program will be expanded to include students from Glenden and the surrounding region. The program will include the opportunity for students to undertake vacation work to build their experience in readiness for graduation.

Pathways and initiatives to support the development of students from Glenden State School in particular will be one of the key ways in which Byerwen Coal will create education and training opportunities in addition to the education grants program.

31.5.3.8 Indigenous Education and Training

Byerwen Coal is committed to improving opportunities for indigenous people and its contractors will:

- maintain regular contact with organisers of indigenous training programs for up-skilling workforce, obtaining appropriate health and safety education and obtaining the appropriate certification
- investigate a pathway between indigenous school students in relevant areas and work opportunities at the mine
- provide employee induction and toolbox meetings (covering aspects of worker behaviour, company expectations, community perceptions of behaviour, health record, etc.)

- continue its existing Jangga educational grants program, with a target of awarding two education grants each year (there are currently two students on the program).

31.5.4 Regional Procurement Program

Along with increased local and regional employment opportunities the project will also provide local and regional business the opportunity to supply goods and services to construction and operations contractors.

31.5.4.1 Australian Industry Participation Policy

QCoal encourages its contractors to maximise local industry participation and give preference to suppliers of Australian-manufactured equipment that is competitively priced and complies with the relevant standards and specifications via best practice approaches.

Byerwen Coal will source contractors in line with its Australian Industry Participation Policy to construct and operate the mine and coal handling and preparation plant. Contractors will be required to outline how they will source sub-contractors with a focus on local and regional suppliers as part of the tendering process.

Byerwen Coal and/or its contractors will implement procurement procedures to include the following provisions:

- promote supply opportunities to suppliers within the region and provide local industry with full, fair and reasonable opportunity to provide goods and services
- liaise with Industry Capability Network (ICN) Gateway and Whitsunday Industrial Workforce Development (WIWD) program to identify pre-qualified suppliers and to provide them the opportunity to submit expressions of interest and/or tenders
- promote the ICN Gateway and WIWD to local and regional suppliers
- provide notification of work packages to ICN Gateway and WIWD as they become available
- provide project progress updates to local and regional suppliers via email updates and presentations to industry groups (such as MAIN, Major Projects Summit, MESCA)
- continue to support economic development initiatives and work with relevant organisations that assist local businesses to identify and prepare for business opportunities
- monitor and evaluate the effectiveness of the program through a count of the number of suppliers from the local and regional areas.

31.5.4.2 Selection Criteria

Byerwen Coal and/or its contractors will engage product and service providers on the basis of the following criteria:

- safety - all products will be assessed in relation to compliance with the *Coal Mining Safety and Health Act 1999* (Qld) and all its regulations
- performance - assessed on capacity to match or exceed specification and/or performance standards
- environment - products will be assessed with regard to relevant environmental considerations
- life-cycle costing - analysis to ensure that optimum cost efficiencies are obtained for the projected life of capital equipment items

- capital cost comparison - assessed on capital cost considerations including manufacture, supply, installation and commissioning costs, and for imported goods in regard also to risk associated with transportation and currency exchange
- availability - assessed on availability of the equipment, parts and services for operation, repair and maintenance
- proven reliability and on-time delivery
- demonstration that they have the resources available to perform the work required
- best practice processes to deliver safe, efficient and socially responsible services.

31.5.4.3 Indigenous Business Opportunities

In addition to providing opportunities to the traditional owners as outlined in the CHMP, QCoal is improving business opportunities for indigenous people by supporting a Leighton Contractors' indigenous business development initiative. This initiative provides assistance to indigenous groups interested in establishing business processes and operations in order to be successful in securing sub-contracts on projects. Leighton Contractors is in the process of establishing the relationship for this initiative with Birriah People and Jangga People - the traditional owners of land associated with one or more QCoal projects.

QCoal's support for this program includes ongoing input into the development of the program, identification to Leighton Contractors of Birriah and Jangga people as potential beneficiaries of the program and coordination of site visits to QCoal's operations and developments for Leighton Contractors' senior management to assist in program development. QCoal will continue to liaise with program coordinators to inform them of business opportunities at the mines.

31.5.4.4 Contractors' Conditions of Engagement

Byerwen Coal's construction and mining contractors' contract documents will include the Environmental Authority, the SIMP and the relevant CHMP. Contractors will be commercially bound to comply with the conditions of these authorities and plans and will regularly report on their performance with respect to the requirements of these authorities and plans.

QCoal selects contractors with proven track record in successfully delivering mining contracts and with aligned values including a demonstrated commitment to best practice in workplace safety, training and development initiatives, workforce wellbeing and management, equal opportunity employment processes to be inclusive of under-represented groups, the local and regional economy and to being environmentally and socially responsible.

31.5.5 Measures to Address Potential Impacts

31.5.5.1 Demographic and Demographic Change

Negative impacts associated with population growth will be mitigated through the implementation of mitigation measures relating to housing and accommodation, residential amenity, social identity and cohesion and community infrastructure. These mitigation measures are outlined under the applicable impact category in the sections below.

31.5.5.2 History and Heritage

The potential diminishment in local residents' sense of rural and agricultural value and identity will be mitigated via a Social Identity and Cohesion and Health and Community Infrastructure Action Plan (refer SIMP – **Appendix 10**). In addition, QCoal will undertake to establish productive partnerships with the community through participation in the Xstrata initiated Glenden Stakeholder Engagement Strategy

(SEG) (which QCoal has been invited to join), to integrate the workforce into the community through involvement and participation programs, to establish the QCoal Foundation (which will implement a program to fund and contribute to community development initiatives) and to develop and apply an Urban Design Master Plan to guide residential development.

31.5.5.3 Indigenous Community

The potential the loss or destruction of items or areas of indigenous heritage value will be mitigated by the implementation of CHMPs as well as a cultural awareness program as part of the Induction program for relevant staff and contractors to the project, and a chance finds protocol to manage new finds or human remains.

A Byerwen Coal bursary program has been established to support educational goals of Jangga students, with two students currently studying under the Byerwen Coal bursary program. A target of four bursaries will be awarded through this program each year.

31.5.5.4 Housing and Accommodation

The increased demand for accommodation associated with the project will be managed through implementation of the Workforce Accommodation Strategy outlined in **Section 31.3.4**.

31.5.5.5 Residential Amenity

QCoal will manage traffic related project effects via a reduction in traffic through provision of bus services for non-resident workforce shift rotations and for shift rotation (e.g. Mackay- Glenden) and daily mobilisation (accommodation-mine site), establishment of a road maintenance contribution scheme with relevant authorities and provision of adequate accommodation for all members of construction and operational workforces. Mitigation measures for traffic impacts are further described in **Chapter 27**.

QCoal will manage changes to the urban design of Glenden via support for the Royalties for the Regions Program, specifically with respect to provision of funding to adequately maintain regional and local roads and with respect to provision of funding to enhance the liveability of Glenden.

QCoal will also implement their Workforce Accommodation Strategy, which includes formulation and application of a Glenden Urban Design Master Plan that provides the blueprint for residential growth and development in Glenden.

A code of conduct will also be developed for the project workforce and will be linked to employee contract conditions (refer **Section 31.5.3.5**). QCoal will also encourage integration of the workforce into the community through involvement and participation programs.

31.5.5.6 Employment, Education and Training

The project also has the potential to contribute to regional skills shortages and to draw skills from other businesses and to increase the cost of living in local area.

QCoal will work to mitigate the negative impacts associated with regional skills shortages via the implementation of a rigorous contractor selection process, assistance with skills development through provision of information to Skills Queensland and the promotion of employment opportunities. Byerwen Coal will also establish productive partnerships with the business community through the Glenden SEG.

31.5.5.7 Local Economic Conditions

QCoal will mitigate impacts associated with increased competition for skilled labour in the region and the potential for an increase in the cost of living in the local area, by assisting in skills development through provision of information to Skills Queensland and other educational and training organisations,

promoting employment opportunities and establishing of productive partnerships with the business community through the Glenden SEG.

Byerwen Coal will maintain regular liaison with educational and training organisations about future workforce requirements to assist them in shaping their programs to respond to demand.

31.5.5.8 Health and Safety

The project is likely to create increased challenges to family life for workers who commute to the mine site from Glenden, particularly where commuting is associated with shift work and additional commutes for non-residential workers.

Proposed mitigation measures on behalf of QCoal, in liaison with Queensland Health, to alleviate the magnitude of such impacts include:

- the provision on-site medical facilities for the project workforces
- development of a Safety Plan which implements preventative measures on and off site and includes an Emergency Management Plan to address emergency incidents
- support for the Royalties for the Regions Program (specifically with respect to provision of funding for adequate provision of health services)
- collection of accurate baseline information relating to increased demands on health services so as to enable appropriate planning and support
- development and implementation of workforce wellbeing programs
- sponsorship of the Royal Flying Doctors Service
- support of auxiliary services such as mobile dental units
- establishment of productive partnerships with health service providers participation in the Glenden SEG
- enhancement of inductions and the screening of applicants to assess workers for their suitability to the lifestyle of shift work and inclusion of material in induction kits and application packages targeted at families to assist in any commuting arrangements.

31.5.5.9 Community Infrastructure and Social Services

Negative impacts related to the increased demand on community infrastructure and social services are proposed to be mitigated by a broad range of actions which include:

- the provision of on-site medical facilities for project workforces
- the development of a Safety Plan which implements preventative measures on and off site and includes an Emergency Management Plan to address emergency incidents
- support for the Royalties for the Regions Program (specifically with respect to provision of funding for adequate provision of health services)
- collection of accurate baseline information relating to increased demands on health services so as to enable appropriate planning and support
- engagement of town planners to assess capacity of essential services networks in relation to project accommodation facilities with network expansion to be undertaken if required
- development and implementation of workforce wellbeing programs
- sponsorship of the Royal Flying Doctors Service
- support of auxiliary services such as mobile dental units

- establishment of productive partnerships with health service providers through participation in the Glenden SEG.

In addition, QCoal intends to establish the QCoal Foundation which will implement a program to fund and contribute to community development initiatives, education bursaries, and community development initiatives.

31.5.5.10 Social Identity and Cohesion

Impacts associated with changes to the social identity of Glenden and social friction resulting from creation of an ‘us and them’ dynamic will be mitigated by the development of partnerships between QCoal, Glenden SEG, the Isaac Regional Council and the relevant services such as the Queensland Police Service. The mitigations will entail the integration of the workforce into the community through involvement and participation programs, the establishment of the QCoal Foundation to implement a program to fund and contribute to community development initiatives, and the development and application of an Urban Design Master Plan to guide residential development.

QCoal will also support the Isaac Regional Council to preserve agricultural heritage and identity through the Isaac Region 2020 Vision Community Plan.

31.6 Residual Impact Evaluation

The purpose of the residual impact evaluation is to define the residual impact that remains after the assumed effective implementation of applicable mitigation measures and management strategies as outlined in the **Section 31.5** above. Only those negative impacts which are rated as being of a moderate or high level of significance are addressed in the assessment of residual impacts.

The results of the residual impact evaluation are shown in **Table 31-23** below.

Table 31-23 Residual Impact Evaluation

Potential impact	Phase	Positive/ negative	Impact significance without mitigation*	Residual impact significance
Demographics and Demographic Change				
Population growth associated with construction workforces	Construction	Negative	Low	-
Population growth associated with operation workforces	Operation	Negative	Moderate	Low
Change to demographic characteristics of resident population of Glenden	Construction Operation	Negative	Negligible	-
History and Heritage (Non-Indigenous)				
Loss or destruction of items or areas of heritage value	Construction Operation	Negative	Negligible	-
Diminished rural and agricultural identity resulting from direct land use changes and development of a non-agricultural enterprise	Construction Operation	Negative	Moderate	Low
Indigenous Community				
Increased employment, education and training opportunities	Construction Operation	Positive	Moderate	-

Potential impact	Phase	Positive/ negative	Impact significance without mitigation*	Residual impact significance
Increased business opportunities for Traditional Owners	Construction Operation	Positive	Moderate	-
Loss or destruction of items or areas of heritage value	Construction Operation	Negative	Moderate	Low
Housing and Accommodation				
Increased temporary accommodation requirements	Construction	Negative	Moderate	Low
Increased permanent accommodation requirements	Operation	Negative	High	Low
Residential Amenity				
Amenity effects associated with increased traffic in residential areas	Construction Operation	Negative	Moderate	Low
Changes to existing urban design of Glenden	Construction Operation	Negative	Moderate	Low
Increased demand on existing municipal infrastructure	Construction Operation	Negative	Moderate	Low
Employment, Education and Training				
Generation of construction employment	Construction	Positive	Moderate	-
Generation of operations employment	Operation	Positive	High	-
Stimulation of training and skill development opportunities	Construction Operation	Positive	Moderate	-
Contribution to regional skills shortage	Construction Operation	Negative	Moderate	Low
Health and Safety				
Traffic-related incidents due to increased population	Construction Operation	Negative	Moderate	Low
Social health effects associated with commuting and shift work	Construction Operation	Negative	Moderate	Low
Real or perceived deterioration of the safety of Glenden	Construction Operation	Negative	Moderate	Low
Community Infrastructure and Social Services				
Increased demand on health services	Construction Operation	Negative	High	Moderate
Increased demand on essential services	Construction Operation	Negative	Moderate	Low
Increased demand on education services	Operation	Positive	High	-
Increased demand on emergency services	Construction Operation	Negative	High	Moderate
Increased usage of recreational facilities and services	Operation	Positive	Moderate	-
Increased usage of general community infrastructure (halls, meeting spaces etc.)	Operation	Positive & Negative	Moderate	-

Potential impact	Phase	Positive/negative	Impact significance without mitigation*	Residual impact significance
Lack of land allocation for provision of social and commercial services	Operation	Negative	Moderate	Low
Social Identity and Cohesion				
Social identity of Glenden changed	Operation	Negative	Moderate	Low
Reinvigoration of the Gleneden community	Operation	Positive	Moderate	-
Social friction resulting from creation of an 'us and them' dynamic	Operation	Negative	Moderate	Low
Local Economic Conditions				
Generation of opportunities for local businesses	Construction Operation	Positive	Moderate	-
Injection of wealth into local and regional economy	Construction Operation	Positive	High	-
Difficulties attracting and retaining skilled staff	Construction Operation	Negative	Moderate	Low
Increase to cost of living in local area	Construction Operation	Negative	Moderate	Low

* as assessed in **Section 31.4.11**

The assessment found that the significance of the majority of residual impacts would be **low** following the effective implementation of mitigation and management measures. The residual impacts which retained a **moderate** level of significance related to the influx of the project workforce into the town. These moderate residual impacts included:

- increased demand for regional and local health services throughout the construction and operations phases
- increased overall demand on regional emergency services including ambulance, police and fire services.

31.7 Monitoring, Reporting and Review

The appropriateness of mitigation measures and management strategies will be monitored through the implementation of the monitoring, reporting and review processes for each of the action plans as outlined within the SIMP (**Appendix 10**). These processes are summarised in the sections below.

31.7.1 Monitoring

A variety of monitoring tools will be used to provide information on the full range of potential impacts and opportunities identified by the SIA.

The Glenden SEG may provide a useful vehicle for monitoring the mitigations outlined in project SIMPs if there is agreement from the group. This would achieve a shared understanding of community views while minimising consultation fatigue for the community by reducing the number of forums in which issues need be discussed. Byerwen Coal will provide independent reporting as required.

Byerwen Coal will consult with stakeholders to gather relevant data and feedback and will rely on Byerwen Coal and contractor internal management systems (such as human resources, safety and health) for the collection of data. Byerwen Coal will collate and report on the data collected.

Action plans outlined in the SIMP will be monitored to determine whether the actions contained therein are meeting the identified objectives. Robust monitoring and evaluation of activities will allow the project to:

- identify and respond to issues or challenges at an early stage
- conduct more effective forward planning
- record program inputs, outputs, outcomes and impacts
- understand and justify whether a program is meeting initial objectives
- increase accountability within project staff and teams
- understand if community and stakeholder expectations are being met
- increase levels of project transparency.

Key performance indicators have been developed based on the objectives under each action plan. These will be refined and adapted as the project progresses.

31.7.2 Reporting

Communicating the findings of the monitoring process is important to provide key stakeholders and the community of Glenden with information on how social management activities are progressing. Communication will be the responsibility of the Stakeholder Manager. Regular communication will help to generate knowledge of what works, what does not work and why, and thereby help the project team to appropriately manage impacts throughout the project life.

External reporting during construction will take place via an annual report on progress against the SIMP, which will be submitted to key stakeholders and the community of Glenden.

The reporting regime during operations will be agreed with Queensland Government during the approval process. Byerwen Coal understands that it is likely to report two years after commencement then every three years. Alternatively, Byerwen Coal recognises that reporting may be required two years after commencement then at key project milestones such as at the time of planned or unplanned increases or decreases in production levels.

Byerwen Coal will report on some key performance indicators more regularly through stakeholder engagement activities. Byerwen Coal will also distribute communication to provide the community of Glenden and other stakeholders with updated information about the project.

31.7.3 Review

The dynamic and evolving nature of the SIMP process requires that mechanisms be established for the adaptive management, regular review and update of the plan. As such, internal review of the project's SIMP will take place annually – through the reporting mechanisms described in the previous section. This internal review will be conducted in consultation with the Isaac Regional Council, Whitsunday Regional Council, the Mackay Regional Council, Queensland Government's SIA Unit and selected key community stakeholders.

External review could also occur two years after commencement of the construction stage. A final review will occur 12 months in advance of the commencement of the closure/decommissioning of the project.

External review will involve the commissioning of a third-party independent company or chairperson, who will audit the SIMP process undertaken to date, and will also report on progress against key

performance indicators and targets. The audit process will culminate in a report to the Office of the Coordinator-General that will include:

- an overview of the effectiveness of implementation to date
- an assessment of progress against nominated indicators
- an explanation as to why specific actions were not carried out, where applicable
- recommendations as to how Byerwen Coal can improve future performance.

Amendments and updates to the SIMP will be made if the strategies and actions described in the original SIMP no longer meet the desired outcomes, or if improvements to existing measures can be made. Amendments and updates will occur during the regular review process as described above.

Any proposal to amend the SIMP will be subject to negotiation between Byerwen Coal and the Queensland Government's SIA Unit. Amendments and updates will be communicated to key stakeholders for the project through existing community consultation mechanisms.

31.8 Conclusion

The project is located approximately 20 kilometres from the existing town of Glenden in Queensland's Bowen Basin. The town of Glenden is defined as the primary social and cultural area of influence relating to the project. As there are likely to be some broader project related effects, a secondary social and cultural area of influence has been defined as the Northern Bowen Basin.

The potential social impacts associated with the construction, operation and decommissioning of the project were defined through the assessment of project effects against the attributes of the existing social environment of the primary and secondary social and cultural area of influence.

The assessment of identified impacts was undertaken for the following social values:

- demographic and demographic change
- history and heritage (non-indigenous)
- indigenous community
- housing and accommodation
- residential amenity
- employment, education and training
- local economic conditions
- health and safety
- community infrastructure and social services
- social identity and cohesion.

The sensitivity of a social value to the effects of a potential impact was derived through consideration of the fundamental characteristics of the existing social environment along with an appreciation of the attachment or importance held by the community either to the value or the potential impact. The assessment found that the project is likely to have a range of positive and negative social impacts

Byerwen Coal has developed five individual action plans to address social impacts associated with the project. The actions plans are included as part of the SIMP provided as **Appendix 10**.

The action plans are detailed under the following themes:

- Housing and Accommodation
- Employment, Training and the Local Economy

- Indigenous Community
- Social Identity and Cohesion
- Health and Community Infrastructure.

The implementation of the mitigation measures included in these actions plans, along with project management strategies including the Workforce Management Strategy and Regional Procurement Program will help to minimise the potential negative impacts and optimise positive impacts associated with the project.

The significance of the majority of negative residual impacts were assessed as low following the effective implementation of mitigation measures and management strategies. The residual impacts which retained a moderate level of significance related to the influx of the project workforce into the town and included:

- increased demand for regional and local health services throughout the construction and operations phases
- increased overall demand on regional emergency services including ambulance, police and fire services.

The most highly significant positive impacts are:

- provision of employment opportunities
- increased demand on education services
- injection of wealth into local and regional economy.

On balance, it is assessed that following the application of mitigation measures and management strategies, the project will have a generally positive social effect on the local and regional area.

The implementation of monitoring, reporting and review processes will ensure the appropriateness of mitigation measures and management strategies by enabling review and amendment of the SIMP.