

China First Coal Project

Social Impact Assessment

Waratah Coal



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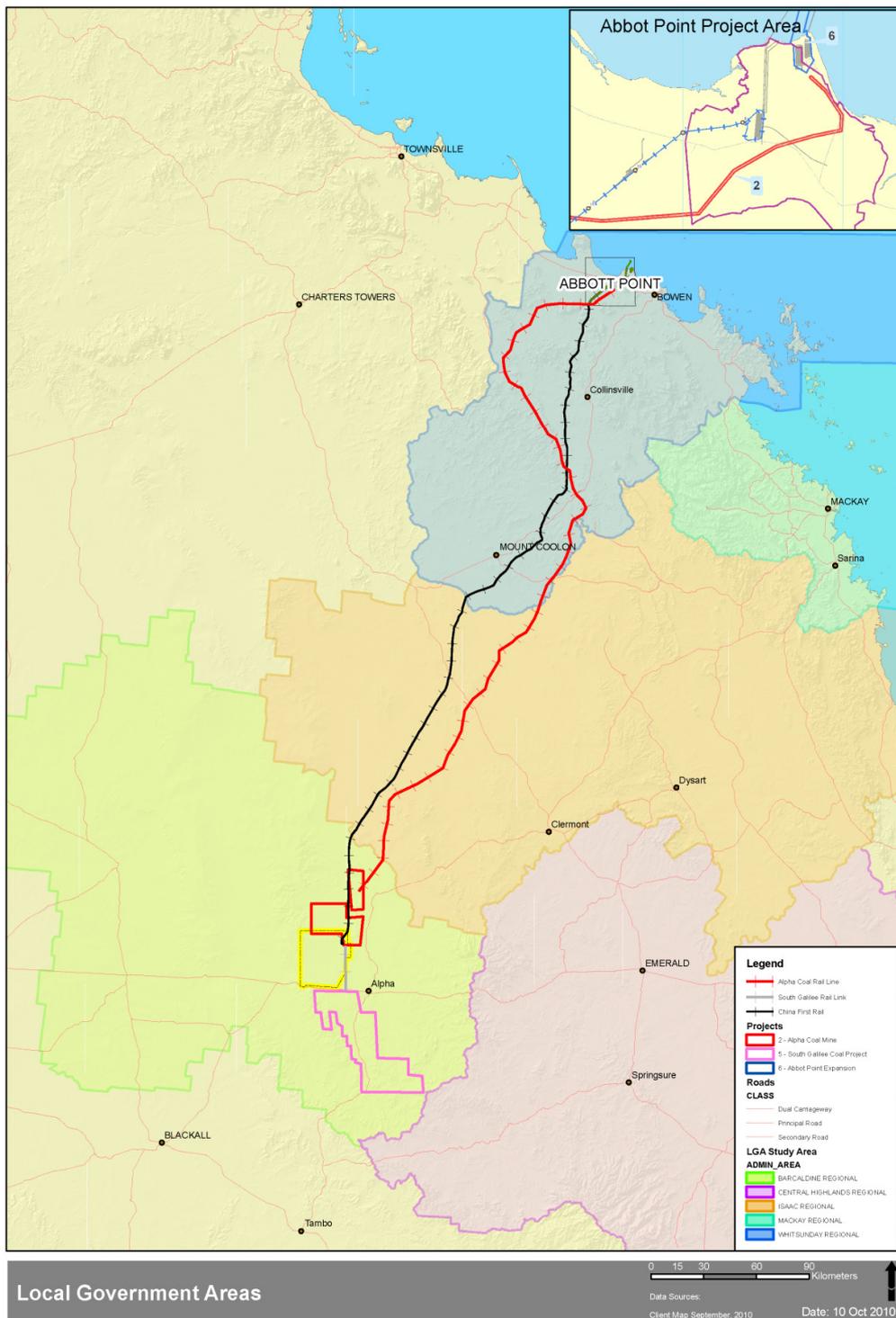
Cover photos: Alpha (main street), brolgas and cattle on the Alpha-Clermont road.

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Map 1: Project Location and Administrative Boundaries

Executive Summary

Waratah Coal Pty Ltd plans to establish a coal mine 30 km north-west of Alpha. The Queensland Government declared the China First Coal Project as 'significant' in 2008, triggering the need for an Environmental Impact Statement, and as part of the EIS, a Social Impact Assessment. The SIA has been conducted by Mike Finlayson of SIA & Development Pty Ltd.

Project Description

The China First Coal Project will export 40 million tonnes of coal annually for a period of at least 25 years. The project includes:

- Open cut and underground mining on a mining lease with an area of around 550 km²;
- Construction of a 447 km railway line from the mine to the Abbot Point State Development Area;
- The construction of a jetty¹ and expansion of stockyards and other facilities at Abbot Point;
- Workforce accommodation and other facilities in the vicinity of the mine (and temporary work camps along the proposed railway line during the construction period); and
- Supporting power and water infrastructure.

Construction is scheduled to occur over a three year period commencing 2011. The Metallurgical Corporation of China (MCC) has been engaged to undertake the engineering, procurement, construction and management of the project.

Method

The methodology for the SIA has been prepared in response to the TOR for the EIS (prepared by the State Government) and draws on guidelines and toolkits prepared by a range of international organisations. The social impacts of the project have been assessed at several different geographic levels:

- The local area, defined for the purpose of this study as the Alpha, Belyando and Bowen areas, as they shall contain the main project facilities (mine, railway and port);²
- The urban centres of Mackay and Rockhampton (with nearby centres of Yeppoon, Emu Park and Keppel Sands included with Rockhampton);
- The local region, defined as the area included in the Barcaldine, Isaac, Whitsunday and Central Highlands Regional Councils; and
- The State of Queensland.

Information is presented for Indigenous groups and impacts specified separately, as and when appropriate.

Social Baseline

An overview of the demographic and social conditions within the target areas is presented below:³

Alpha area: The area has a population of less than 1,000 people, most residing in Alpha (population 350) or Jericho (population 300). The population has declined over the past 25 years. Furthermore:

- The population is relatively old (a median age of 38);
- The Indigenous population comprises 3.6% of the total population, and the Wangan and Jagalingou People are traditional owners within much of the mine site area;
- There is a strong sense of community and a strong commitment to local organisations, including high levels of volunteering;
- The majority of the workforce is engaged in rural industries (predominantly beef cattle);
- There is high workforce participation and low unemployment (males 1.0%; females 1.4% in 2006), although average income levels are 8% lower than Queensland as a whole;
- The level of home ownership is high (47%) and there is only a relatively small rental market;

¹ A jetty will not be required if the Government builds the proposed Multi Cargo Facility, and this facility is made available to Waratah Coal.

² These areas correspond to the former shires of Jericho, Belyando and Bowen, which were incorporated into the larger regional councils of Barcaldine, Isaac and Whitsunday in 2008.

³ Baseline data has been derived primarily from the ABS, in particular, the 2006 Population and Housing Census. All information sources have been referenced in the main body of the report.

- House prices have risen sharply over the past three years but remain below urban areas or major rural centres (averaging above \$200,000 in 2010);
- Health and emergency services are limited (Alpha Hospital is old and does not have a resident doctor, and the ambulance is operated by hospital staff and a volunteer driver);
- Education facilities are limited (Alpha has prep to grade 10 and Jericho has prep to grade 6) and education levels relatively low; and
- Welfare indices developed by the ABS using 2006 census data indicate that Alpha contains a high proportion of relatively disadvantaged people and few people with high qualifications or highly skilled jobs when compared to Australia as a whole.

Belyando area: The area has a population of a little over 10,000 people, most residing in Moranbah (population 7,500) or Clermont (population 2,500). The population has grown significantly over the past 25 years, due predominantly to mining, and is expected to continue to grow over the next 25 years. Furthermore:

- The population is relatively young (a median age of 30);
- The Indigenous population is low (1.8% of the total population), however, the Wangan and Jagalingou People, Jangga People and Birri People are traditional owners within the area, including parts of the proposed railway route;
- Although a significant proportion of the population has settled in the district as a result of coal mining, there is still a strong sense of community and a strong commitment to local organisations, including high levels of volunteering;
- The majority of the workforce is engaged in the mining industry (predominantly coal mining); there is high workforce participation and low unemployment (males 1.5%; females 2.7% in 2006), with average income levels 49% higher than Queensland as a whole;
- The level of home ownership is low;
- House prices have risen sharply in Moranbah (since 2002) and Clermont (since 2004) and the average price in Moranbah (\$432,000 in 2009) now exceeds urban centres such as Mackay;
- Health facilities include hospitals in Moranbah and Clermont; while access to education facilities varies considerably (Moranbah and Clermont have high schools, but many areas are serviced only by small primary schools);
- Education levels are comparable to the state average; and
- Welfare indices indicate that Belyando has a low proportion of relatively disadvantaged people; above average level of access to economic resources; although relatively few people with high qualifications or highly skilled jobs.

Bowen area: The area has a population of around 13,000 people, most residing in Bowen (population 10,000) or Collinsville (population 2,000). While Collinsville's population has declined or stagnated, Bowen's population has increased recently and is expected to increase in the future. Furthermore:

- The population is relatively old (a median age of 41);
- The Indigenous population is relatively high at 6.5% of the total population, and the Birri People are traditional owners of inland areas (around Collinsville) while the Juru People are traditional owners of coastal areas;
- There is a strong sense of community and a strong commitment to local organisations, although a lower level of volunteering in comparison to many other rural areas in Queensland;
- The workforce is engaged in a range of industries (males predominantly agriculture, mining and construction; females agriculture, health care, retail, education and accommodation/food);
- Workforce participation and unemployment levels were similar to Queensland in 2006, while income levels were 12% lower than Queensland as a whole;
- The level of home ownership is above average (40%) and there is a growing rental market in Bowen, with house prices increasing consistently over the past decade to a level equivalent with Mackay (the average house price in 2009 was \$360,000);
- Collinsville has a high vacancy levels and a large proportion of houses for sale;

- The main health facility is Bowen Hospital, which provides general medical services;
- Education facilities in the district vary (Bowen and Collinsville have high schools, but some areas are serviced only by small primary schools);
- Education levels are relatively low; and
- Welfare indices indicate that the Bowen area has a high proportion of relatively disadvantaged people; below average level of access to economic resources; and very few people with high qualifications or highly skilled jobs.

Mackay: Mackay has a population of around 100,000 and has experienced strong growth over the past 25 years (averaging 2.3% per annum). Continued strong growth is expected in the future. Furthermore:

- The population characteristics are similar to Queensland as a whole in terms of age structure, sex ratio, household size, Indigenous representation and family composition;
- A similar proportion of males and females are volunteers when compared to Queensland as a whole (although noticeable less than in Alpha or Belyando);
- Workforce participation is slightly higher for males than for Queensland (and similar for females), however, Mackay has lower unemployment (males 3.0%; females 4.6% in 2006) and income levels were on average, 10% higher than for Queensland;
- Mackay has a diversified workforce, with male employment levels highest in construction and mining, and females employment levels highest in retail and health care;
- The level of home ownership (33%) is similar to the state average (32%);
- House prices rose sharply from 2002 to 2007 but have since stabilised (averaging \$350,000 in 2009);
- Mackay contains a base hospital (providing a full range of health services), along with two private hospitals;
- Mackay has a range of public and private schools and is a regional centre for education with campuses for both Central Queensland and James Cook Universities and various adult learning centres, however, education levels are lower than the state average; and
- Welfare indices indicate that Mackay has a low proportion of relatively disadvantaged people; above average level of access to economic resources; although relatively few people with high qualifications or highly skilled jobs.

Rockhampton and surrounds: Rockhampton and the Livingstone Statistical Local Area (which includes the coastal towns of Yeppoon, Emu Park and Keppel Sands) have a combined population of around 90,000. While Rockhampton has experienced modest growth over the past 25 years (averaging 0.5% per annum), Livingstone has grown at 3.6% per annum. These growth trends are expected to continue. Furthermore:

- Population characteristics are similar to Queensland as a whole in terms of age structure, sex ratio, household size and family composition;
- However, a higher proportion of the population was born in Australia than for Queensland as a whole (93% compared to 81%) and there is higher Indigenous representation (5.9% compared 3.3%);
- There are slightly more volunteers (males 20%, females 25%) than for Queensland as a whole (although noticeable less than in Alpha or Belyando);
- Workforce participation is similar to Queensland as a whole, however, Rockhampton and surrounds have slightly higher unemployment (males 5.1%; females 5.4% in 2006) and income levels were on average, 7% lower than for Queensland;
- Rockhampton and surrounding areas contain a diversified workforce, with male employment levels highest in construction, transport and retail, and female employment levels highest in health care, education and retail;
- The level of home ownership (35%) is similar to the state average (32%);
- House prices in Rockhampton are not as high as some other regional centres, but prices in nearby coastal locations such as Yeppoon, are very high and are expected to remain high;

- Rockhampton contains a base hospital (the main health facility in Central Queensland) along with two private hospitals;
- Rockhampton is a centre for education and is the home of the Central Queensland University, however, education levels are lower than the state average; and
- Welfare indices indicate that Rockhampton and surrounding areas have a high proportion of relatively disadvantaged people and relatively few people with high qualifications or highly skilled jobs; and while Rockhampton has below average level of access to economic resources, the population in the nearby coastal towns has above average level of access to economic resources.

Region: The Barcaldine, Isaac, Whitsunday and Central Highlands regions contain approximately 80,000 people (2% of Queensland's population). However, the demographic and social conditions within the region are highly variable:

- The main industries in each regional council are:
 - Barcaldine: cattle, sheep, wool and tourism;
 - Whitsunday: tourism, agriculture and cattle;
 - Isaac and Central Highlands: coal, agriculture and cattle;
- Barcaldine is experiencing a declining population, whereas the Whitsunday region's population has stagnated and both the Isaac and Central Highlands regions have experienced strong population growth;
- Employment in the mining industry is far higher than for Queensland as a whole (29% for males compared to 3% across the state, and 5% for females compared to 0% across the state);
- Workforce participation is noticeably higher for both males (84%) and females (67%) than for Queensland as a whole (73% and 60% respectively, in 2006), and unemployment levels noticeably lower (males 2.3%; females 2.4%);
- Income levels are 25% higher than for Queensland, but in general are far higher in the coal mining areas (Isaac and Central Highlands) and considerably lower in Barcaldine and Whitsunday;
- Access to health and education facilities varies: the larger regional centres generally have good health and education facilities, whereas those people living in or near smaller centres are particularly disadvantaged and must often travel long distances to a hospital or to high school;
- The Barcaldine and Whitsunday regions have a relatively high level of socio-economic disadvantage and limited economic resources, whereas the Isaac and Central Highlands regions have fewer disadvantaged people and greater access to economic resources; and
- The entire area, however, according to ABS data from the 2006 census, has a high proportion of people without qualifications or relatively unskilled jobs.

State: Queensland has a population of around 4.5 million and along with Western Australia, has for many years recorded the highest growth rate in Australia. Queensland has a slightly higher proportion of people born in Australia (81%) than in other states, and Queensland contains a slightly higher Indigenous population (3.3% compared to 2.3% nationally). Overseas immigration contributes around 42% of Queensland's population growth, although the majority of overseas immigrants chose to live in urban areas, and in particular, the greater Brisbane metropolitan area. There are some common demographic and social trends occurring in Queensland:

- The population is aging (rising from 33 to 36 between 1996 and 2006);
- The model family (consisting of two parents and often two or more children) is less common than in the past and the average number of household occupants is falling;
- The population is increasingly mobile (around 25% of households have relocated within the past year, and 50% have relocated within the last 5 years); and
- The level of home ownership is falling (from 40% in 1996 to 32% in 2006).

Workforce participation rates in Queensland are similar to that for Australia, but unemployment rates are marginally lower. Average income levels are marginally higher in Queensland, and have increased

from 98% of the national average in 1996 to 102% of the national average in 2006. Where many interstate immigrants were once attracted to Queensland's sunshine and relaxed lifestyle, immigration is now driven by employment opportunities, with the mining industry central to employment growth in the state.

Workforce

The China First Coal Project will require the following construction workforce:

- 2,500 employees for the mine (over a three year period);
- 1,000 employees for the rail infrastructure (over a three year period); and
- 2,500 employees for the port facilities (over an 18 month period).

The construction workforce is equivalent to 4,750 full time positions for 3 years. Direct employment during operations has been estimated as follows:

- 1,500 employees for the mine;
- 60 employees for the railway; and
- 150 employees for the port.

The majority of the mine employees will operate on a Fly In-Fly Out (FIFO) basis generally from Brisbane, Mackay and Rockhampton. The majority of the rail and port employees will reside in or near Bowen. In addition to direct employees, a range of goods and services will be procured locally, providing contracting opportunities for local businesses, which will generate additional (indirect) employment.

Social Impact of Existing Mining Operations

Studies in the Bowen Basin have identified a range of social impacts that have or are occurring as a result of coal mining:

- FIFO and Drive In-Drive Out (DIDO) workforces and increased mobility of local residents means that an increasing proportion of the economic benefits from mining is flowing to nearby regional centres (particularly Mackay);
- FIFO and DIDO workforces bring problems of fatigue, family isolation and community fragmentation, and limit growth in school enrolment and community participation in mining areas;
- Housing shortages and price spikes have also limited the potential for flow-on economic development and created pressures on non-mining businesses and disadvantaged groups;
- Unless sufficient housing is provided for employees and contractors, mining will increase local traffic and result in more accidents, and therefore an increase in the workloads for health, police and other emergency services; and
- Effective town planning can bring lasting benefits to a community, including enhanced community spirit, whereas unplanned growth resulting from mining can have a range of negative impacts.

Despite the above observations, mining in the Bowen Basin has led to employment and population growth, a substantial rise in average incomes, and generally has strong local support. However, evidence suggests that while average income levels have risen substantially, there is also greater income inequality as a result of mine operations, including greater income inequality between males and females.

Other Large-scale Resource Projects

An unprecedented number of large scale resource projects are planned for Central Queensland and are expected to be constructed in a similar timeframe to the China First Coal Project:

- Three coal mines are to be developed near Alpha in addition to the China First Coal Project (including the South Galilee Coal Project, which, unlike the other three mines, will be relatively close to the town);
- New coal mines are being developed in the vicinity of Moranbah and Collinsville;
- The wharf and loading facilities at Abbot Point are being expanded; and
- A number of Coal Seam Gas (CSG) projects are being developed in the Bowen and Surat Basins, with the construction of Liquefied Natural Gas (LNG) plants and expansion of port facilities at Gladstone.

Community Aspirations and Attitudes

Regional Plans

Alpha, Belyando and Bowen are located in the Central West, Central Queensland and the Whitsunday Hinterland and Mackay regions, respectively. Regional plans indicate strong support for mining and further mine development, providing it is undertaken in a consultative manner; promotes or contributes to social and economic development; and minimises adverse environmental impacts.

Community Plans

Community Plans have been prepared for Alpha and for the Isaac Region, but not for Bowen. The community plan for Alpha acknowledges the importance of mining for the future of Alpha, and indicates that local people want to see Alpha as a diverse economy where mining staff are integrated into the community. Concerns have been raised over the potential social and environmental impacts of mining, and the threat of Alpha becoming a 'mining town'. The Isaac community plan notes the challenges of the cumulative impacts of multiple mining projects, and outlines a 'place based' planning approach, such as the Clermont Preferred Future Project (described in Section 4.4).

Impacted Property Owners

The mining lease occupies an area of 550 km² and includes eight beef cattle properties, although three are run as a single operation and another is managed as 'a wildlife refuge with sustainable grazing'. The six property owners have had discussions with Waratah Coal since exploration commenced and have mixed opinions over the project. The final attitude to the project is likely to depend on the compensation offer tabled by Waratah Coal.

The major concern of property owners neighbouring the mine site has been the potential impact of the mine on groundwater, as bores provide the main source of water for cattle and domestic purposes. Dust, fences and access roads have also been raised as issues of concern. The property owners impacted by the railway were most interested in the actual rail alignment; whether both Waratah and Hancock would construct and operate separate railways; and what mitigation strategies may be considered to help overcome constraints to cattle operations impacted by the railway. Concern was also raised in the Collinsville area over the risk of fire from one or more new railway lines. The uncertainty over which railway line would be developed has caused substantial stress for property owners and has effectively prevented property development or the sale of these properties.

Community Attitudes

Community aspirations vary considerably across the study area. Barcaldine, Alpha and Jericho have not experienced large-scale mining activity and have suffered a declining population over an extended period. Heavily reliant on beef cattle and tourism, many people see mining as an opportunity to redress the declining population, provide employment opportunities, and in doing so, act as the catalyst for both improved infrastructure (particularly power and water) and services. In-migration is often seen as a positive outcome, although there is considerable interest in the origin of FIFO workers; the longevity of the mine; and the role of the Chinese construction companies, including whether Chinese staff would form part of the workforce.

Although the majority of people from Barcaldine, Jericho and Alpha support the development of the mine, concern has been expressed for the environment, and in particular, impacts on both surface and ground water, and potential problems resulting from unplanned (and unrestrained) growth, culminating in a mining town.

The Belyando area has a substantial mining industry and has experienced substantial in-migration in the past (including the establishment of Moranbah in 1971). The area has high employment and income levels and has benefited from improved public infrastructure and services. While generally supportive of mining development, local residents expressed interest in the proposed rail alignment, and expressed concerns over the environmental impact, particularly in relation to the source of water for the mine and the impacts that the mine would have on the Belyando, Suttor and Burdekin catchments.

The Whitsunday Regional Council and many Bowen residents appear to be supportive of mining development and the expansion of facilities and increased tonnage exported from the Abbot Point State Development Area, on the basis that the project will create additional employment and contracting opportunities and stimulate economic growth in the Bowen area. Again, this support is conditional on

adequate environmental practices, in particularly those in the vicinity of the wetlands near Abbot Point and the marine environment. Members of the Bowen-Abbot Point Community Consultation Group have expressed concern with rising house prices and rental costs, and the limited infrastructure and services available in Bowen.

Collinsville residents are less supportive of mine development, although this largely stems from issues relating to the existing coal mines on the outskirts of the town, and the existing railway line, which passes through the town. However, various people, including some at Collinsville, expressed concerns over adverse social impacts resulting from either FIFO operations or unplanned growth resulting in mining towns that are less attractive to reside in and erode community values.

An underlying attitude, particularly in the areas that have mining experience, is that mining predominantly benefits the people from South East Queensland, and Brisbane in particular, rather than people in the areas from which coal and other minerals are extracted. There is some awareness, and support for, the Western Australian model, in which 25% of mining royalties are distributed to regions other than the Perth metropolitan area. Similar distribution models have been introduced in a number of countries to enhance the contribution which mining plays to local development. Many people in Central Queensland would prefer to see a proportion of royalties, or other mining benefits, allocated specifically to the local area.

Despite providing the community with various options to request information or register a complaint about the project, no complaints were received by Waratah Coal outside the public consultations between June and September 2010. The main complaint during the initial public consultations concerned the process in which people were notified of the meeting and the need to more effectively raise awareness of public forums in the future. Outside the public consultations, the only contact with Waratah Coal was made in relation to the consultation process (ie. checking meeting dates and venues) and employment and contracting opportunities.

Social Impacts

The project's social and cultural area of influence includes the towns and nearby residents of Alpha, Jericho, Barcaldine, Emerald, Clermont, Collinsville, Bowen, Mackay and Rockhampton. Alpha is likely to be the most impacted community, followed by Bowen and Emerald. Impacts are expected to be greatest during project operations, when some 4,000 additional jobs are created, boosting wages by \$750 million annually.⁴ Around 25% of the additional jobs created are in the longer term expected to be filled from people living in Central Queensland.⁵ The remaining jobs will be filled by people residing in other parts of Queensland, interstate or overseas.

The impacts will extend for a prolonged period and accumulate over time. The cumulative impact of multiple large-scale resource projects being developed within a similar time frame include:

- Substantial growth in employment numbers and further reduction in unemployment levels;
- Increased demand for those locally available goods and services required for project construction and subsequently operations (contributing to higher price rises than in other parts of Queensland);
- Increased in-migration as a result of skill shortages in the construction and mining industries; and
- As a result of increased in-migration, further housing shortages (and higher house prices and rental costs), increased use of public infrastructure and increased demand for public and private services.

The type and extent of social impacts, however, will vary substantially, as summarised below.

Property owners of the proposed Mining Lease

Of the eight beef cattle properties, Waratah Coal is expected to acquire two properties in full and part of a third property. The remaining properties will be able to continue cattle operations despite underground mining and associated above-ground mine infrastructure. These properties will however be impacted, to various degrees, by dust, noise, vibration and visual amenity, but will be provided with improved telecommunications, 24 hour power supply, piped water and financial compensation.

⁴ While the project will directly employ some 1,500 workers during operations, a total of 4,000 new jobs are expected to be created as a result of indirect and induced employment.

⁵ Employment and migration estimates are derived from the project's Economic Impact Assessment.

Property owners along the proposed rail alignment

The rail alignment is expected to traverse 36 properties which vary in size from around 1,000 ha to almost 40,000 ha. Four houses are located with 2 km of the proposed railway route. Coal trains will increase the level of noise, dust and the risk of fire and decrease visual amenity. Until a decision is made on whether the Waratah or Hancock railways are to be utilised, many property owners will continue to suffer from anxiety and stress due to the uncertainty of whether their properties will be impacted or not, and due to the potential impact that a railway and trains will have. The actual area of land lost to the railway will be small in terms of the overall area of grazing land available (generally no more than 2% of any one property). However, additional time may be required to access some parts of the property and additional labour may be required to move cattle across the railway and check on new watering points, etc. Detailed discussions with each property owner will attempt to reduce landlocked areas and minimise disruption from the railway. Compensation for the disruption and loss of land to the railway may include financial payments, the realignment of fences and/or the provision of additional watering points, stockyards and farm roads. In addition, some property owners may have the opportunity to provide services during construction (eg. fencing) and operations (eg. weed or fire control within the rail alignment). This would supplement farm income in the future.

Alpha

The social impacts in the Alpha area will largely be determined by the extent to which the Barcaldine Regional Council can implement a plan for the development of Alpha. Council has proposed that mining royalties are used to fund a range of infrastructure projects in and around Alpha, including extending and upgrading the airstrip, improvements to water and power supply, the preparation and release of residential and industrial land, and a road which provides a more direct point of access from the airstrip to the Waratah and Hancock coal mines.⁶ There is no reason why the plan could not include other public infrastructure (if agreed by government), such as a hospital expansion or upgrade, a dedicated ambulance service, an expansion of the school, the construction of child care facilities, additional police vehicles and housing for public servants.

If a plan is developed and implemented for Alpha, as proposed:

- Alpha will be a relatively attractive location for families to live;
- Alpha's population will increase substantially (perhaps reaching 2,000 within a 10 year period) and will include mine contractors and some mine employees (who prefer to live locally rather than FIFO or DIDO), and many of the spouse of the mine workers/contractors will be able to find employment in Alpha;
- The quality and coverage of public infrastructure and services will be significantly improved;
- The private sector will expand and diversify, generating employment and training opportunities and providing a future for young people from the local area;
- Average income levels will rise substantially; and
- The above factors will contribute significantly to the vitality and sense of community within Alpha.

If Council does not receive support for the development of Alpha, the following impacts are expected:

- Fewer contractors or mine employees will base themselves in Alpha, and those that do are likely to be single men who FIFO or DIDO on a weekly basis;
- Alpha's permanent residential population will increase only marginally (eg. growing to around 500 within a 10 year period);
- Increased traffic on the Alpha-Emerald and Alpha-Clermont roads, coupled with fatigue, is likely to become a major problem and increase the demand on emergency services and health facilities;
- There will be a shortage of accommodation in Alpha, and a shortage of staff to fill public or private sector positions outside the mining industry;
- Issues typically associated with single men living together, such as alcohol and drug abuse, will become more common; and
- Due to the above, the local community is likely to be disenchanted with mining and may develop a feeling of 'lost opportunity' that may diminish the local sense of community.

⁶ Infrastructure required for mine operations will still be paid for by the mining companies.

Under both scenarios, house and land prices in and around Alpha will continue to rise. The South Galilee Coal Project is expected to have a greater impact on Alpha than the Waratah or Hancock mines in terms of environmental impacts (noise, dust, vibration and potentially visual amenity) and social interaction between the mine workforce and local residents, as the South Galilee mine workforce is expected to be located in a village on the town boundary.

As discussed further below, the timely development of Alpha should be a high priority for all parties involved in the development of coal mining in the Galilee Basin.

Clermont

While Clermont is located 180 km from Alpha, the Hancock and Waratah coal mines will be located around 130 to 140 km from Clermont. While Clermont is well placed geographically to provide employees and contractors to the mines, the Alpha-Clermont road has long sections of gravel road which can be very dusty and is narrow and winding in some sections. In its current form it is unsuitable for a large increase in traffic, and until developed, will limit employment and contracting opportunities. It will also result in more accidents, and this will increase the demand on emergency services in both Clermont and Alpha.

Upgrading the Clermont-Alpha road would significantly boost the Clermont economy.

Bowen

The project will provide some employment and contracting opportunities to Bowen residents. However, due to the skills required, most employees are expected to be sourced from further afield. Bowen's population is therefore expected to increase by up to 5% as a result of the project. The cumulative impact of multiple resource projects, and a growing tourist industry, will lead to far greater increases in Bowen's population over the next decade (annual growth is predicted to be around 1.8% per annum, considerably higher than the State Government's long term forecast of 1.2% annual growth). The forecast growth will:

- Increase employment and contracting opportunities;
- Increase average income levels;
- Cause labour shortages for some businesses (ie. when employees chose to work for resource projects);
- Continue upward pressure on house prices and rental costs;
- Limit access to public and private services, both due to increased demand for a broad range of services, and some tradesmen taking jobs in resource projects (reducing the supply of services from plumbers, electricians, etc); and
- Cause difficulties, particularly for disadvantaged groups, as a result of higher housing prices and rental costs, and an increase in the cost of private sector services.

Emerald

Emerald is 170 km from Alpha and is rapidly developing as a major service centre for mines and gas fields in the Bowen and Surat Basins. The council has released large areas of land for housing and industrial sites and is actively encouraging contractors to establish a base in Emerald and prepare for the development of mines in the Galilee Basin. The following impacts are expected:

- Emerald will become the main location for contractors providing services to mines near Alpha;
- The development of the Galilee Basin will result in a substantial increase in traffic on the Capricorn Highway from Emerald to Alpha, and initially between Rockhampton and Emerald, leading to an increase in accidents, and increased demand on police, health and emergency services;
- Emerald's population will continue to grow rapidly (possibly exceeding the State Government's long term projection of 2.5% per annum) and will continue to be relatively young;
- The quality and coverage of public infrastructure and services will continue to improve in line with population growth and the emergence of Emerald as a major regional centre;
- Employment levels will remain high and average income levels will continue to rise; and
- Emerald will continue to be an attractive place for people to live and have a strong sense of community.

Mackay

Mackay's population and economy are both expected to continue to grow rapidly. Although Mackay is the main service centre for mines in the Bowen Basin, Alpha is located 450 km from Mackay. While some

contractors are likely to establish a base in Alpha, contractors from Mackay are not expected to play such an important role in servicing the mines near Alpha as they do for the mines in the Bowen Basin. Mackay will, however, be the home for some of the project's FIFO mine workers. As Mackay has limited unemployment, and most of those people with skills are already employed, most FIFO workers residing in Mackay are expected to migrate to Mackay from other parts of Queensland or interstate. If 15% of the mine workforce eventually lived in Mackay, this would represent an increase of approximately 700 people (or 0.5% of Mackay's forecast population in 10 years time). The increase in population in Mackay, as a result of the China First Coal Project, will therefore be relatively minor. However, the high population growth rate forecast for Mackay will result in a number of changes, and these can be attributed, in part, to the cumulative impact of multiple resource projects being developed in Central Queensland:

- Strong employment growth and increasing income levels;
- Continued upward pressure on house prices and rental costs;
- Sustained demand for residential and industrial land and supporting infrastructure;
- Increasing demand on public and private services; and
- Growing problems associated with larger cities, such as homelessness and criminal activities.

Rockhampton and surrounds

Rockhampton and the nearby coastal towns are expected to be the home for some of the project's FIFO mine workers. As for Mackay, most FIFO workers that reside in the Rockhampton area are expected to migrate to the area from other parts of Queensland or interstate. The population increase directly attributed to the China First Coal Project is expected to be no more than 0.5% of the area's forecast population in 10 years time. The Rockhampton area can expect employment growth and increasing income levels; continued upward pressure on house prices and rental costs; sustained demand for residential and industrial land and supporting infrastructure; increasing demand on public and private services (including the police, health and emergency services as a result of increased traffic during the construction of mines); and growing problems associated with larger cities (eg. homelessness and crime).

While Rockhampton will remain the main centre for health, education and business, the coastal towns of Yeppoon, Emu Park and Keppel Sands will support an increasing proportion of the area's population.

Other locations

Residents of Jericho, located 55 km to the west of Alpha, are expected to benefit in terms of improved access to economic and social services as Alpha develops. Impacts at Barcaldine are expected to be relatively minor, although residents of both Jericho and Barcaldine may benefit from improved power and water supply, should any of the proposed mines for the Alpha area have surplus requirements and agree to channel a proportion of both to the local communities.

Other locations, including Collinsville, Blackall and Tambo, are expected to be impacted primarily as a result of employment and business opportunities, and simultaneously, the loss of some existing tradesmen and other workers from these communities.

Disadvantaged groups

The increase in the cost of living (housing and goods and services) will disadvantage low income earners, including the unemployed. However, unemployment levels are expected to fall as a result of the project.

The Indigenous population is not expected to be disadvantaged by the project or the development of multiple resource projects:

- Many employment opportunities will be created, and substantial training provided to both the Indigenous and non-Indigenous community; and
- The cultural heritage process, while potentially causing some anxiety due to potential land disturbance, will help Indigenous people access traditional areas; identify or reconfirm areas of cultural significance; and initiate measures to ensure culturally significant areas are recognised, protected and made known to younger generations.

Welfare agencies in the region are typically stretched to the limit in terms of facilities, staff and resources. The cumulative impact of multiple resource projects will significantly add to the burden on these agencies and without additional resources could result in a decline in their ability to provide services to the growing population.

Summary of Project and Cumulative Social Impacts

The key social impacts and their significance, resulting from both the project and from the development of multiple large-scale resource projects, are summarised in Table 1..

Table 1: Summary of Social Impacts and Significance

Impact	Description	Project Significance	Cumulative Significance
Positive: Employment and training	The project will create an additional 3,000 jobs during construction and 4,000 jobs during operations (when including direct, indirect and induced employment) and provide training to many staff, including Indigenous employees.	High	Extreme
Contracting and business opportunities	The project will procure a range of local goods and services, benefiting Emerald, Bowen, Mackay and Clermont businesses (some of which will establish bases and locate staff in Alpha).	Medium	High
Personal income	The project will increase average personal income levels in Alpha, Emerald, Bowen, Mackay and Rockhampton.	High	Extreme
Town infrastructure and services	The project will generate an additional \$300 million in revenue annually for the State Government. Some of this should benefit the region. If government agrees to develop Alpha, the Alpha community will benefit from improved transport and communication infrastructure, expanded social services and a wider range of commercial enterprises.	Medium	High
Rural infrastructure	Farmers in the vicinity of the mine will benefit from improved telecommunications, power and water supply.	Medium	Medium
Negative: Cost of living	Housing prices, rental costs and the costs of local goods and services are expected to rise. Shortages in accommodation and trade services are likely. Higher living costs will disadvantage low income groups (although increased employment provides opportunities to reduce unemployment).	Medium	High
Cattle operations	Two properties and part of a third property will be acquired by Waratah Coal, and around 40 additional properties will be directly impacted by the project in the vicinity of the mine and along the railway (increasing labour requirements and potentially reducing output).	Medium	Medium
Road traffic	Traffic disruptions will occur during project construction along the Capricorn Highway and roads crossing the railway (including the Bruce Highway). Increased traffic will occur on the Alpha-Emerald and Alpha-Clermont roads during operations, impacting local residents and tourists.	Medium	High
Public infrastructure and services	Population growth in Alpha, Emerald, Bowen, Mackay and Rockhampton will increase the demand for public infrastructure and services (eg. power, water, garbage collection and processing, health, education, police, rural fire brigades, etc).	Medium	High
Welfare services	Population increase, including mine employees/contractors and their families, will increase the demand on welfare agencies and potentially lead to a reduction in the coverage or quality of services provided.	Medium	High
Community values	If Alpha is not developed as proposed, it will have a transient population and drug and alcohol related issues. In a town which aims to preserve its way of life, this may fuel resentment towards mining, and impact adversely on community values.	High	High

NB: The significance is based on an assessment of the likelihood and consequence of an impact occurring. Additional details, including scores for the likelihood and consequence, are provided in Section 7.10

Conclusions

The four mines proposed for the Alpha area are expected to produce around 120 Mt of coal per annum. This compares to 190 Mt of coal produced throughout Queensland in 2008/9, and is indicative of the scale of benefits that will be provided to Queensland and Australia once these mines reach full production. The Galilee Basin, however, is a rich pastoral area, steeped in history, and is increasingly dependent on tourism. The development of mining in an area with minimal previous mining history will cause irreversible change to the physical landscape and the social fabric of towns and communities in the vicinity of the mine and much of the railway.

Research in the Bowen Basin indicates that coal mining results in a range of both positive and negative social impacts. However, the number of coal mines near a town, and the reliance on FIFO or DIDO workers, appear to be key factors determining the extent of social impacts.⁷ This does not auger well for Alpha, a small town of 350 people with an expressed desire to maintain its rural lifestyle and not become a mining town.

While the development of four coal mines in the vicinity of Alpha provides a unique opportunity for Alpha and surrounding communities to benefit from sustainable and socially acceptable development, these benefits will only be realised if mine development is accompanied by carefully prepared and effectively coordinated development plans and strategies.

The main impact of the China First Coal Project in the Belyando area will occur as a result of the railway, while the main impact of the project in the Bowen area will occur as a result of the expansion of facilities and capacity at Abbot Point. While the social impact of the project in the Belyando and Bowen areas will be far less than in the Alpha area, the same broad conclusion can be drawn: the potential benefits resulting from cumulative resource projects will only be realised if mine, rail and port development is accompanied by carefully prepared and effectively coordinated development plans and strategies. This is reflected in the following mitigation strategies.

Social Mitigation Strategies

1. Development of Alpha

In general, the local community sees mining as an opportunity to improve services and provide employment opportunities. However, they wish to retain their rural lifestyle rather than see Alpha become a mining town. Balanced and managed growth, perhaps resulting in a town like Clermont, is no doubt more preferable than a larger mining town such as Moranbah. For balanced and managed growth to occur, the mines will need to accommodate the majority of the 4,000 direct mine employees in purpose-built workforce camps. Most mine employees will therefore need to be engaged on a FIFO basis. Alpha's desired population growth will be achieved from mine contractors and a limited (and controlled) number of mine employees and their families.

If Alpha is developed as proposed by the Barcaldine Regional Council, it will be an attractive location for families to live. Improvements to health and education services and the provision of day care facilities will help attract families to Alpha. This in turn will enable the spouse of mine workers to enter the local workforce and minimise staff shortages in the public and private sector. Developing Alpha will therefore stimulate local employment, including jobs outside the mining industry, and provide an opportunity for young people to remain in Alpha rather than seek employment in the cities.

If Alpha is not developed as planned, few contractors are likely to move to Alpha on a permanent basis and very few families are likely to be attracted to the area. Under such a scenario, improvements to public infrastructure and services will be modest, commercial development will be limited, and issues such as alcohol and drug abuse are likely to be more common (stemming from single men with high income levels living together with few entertainment outlets). In addition, the Alpha and Jericho communities may become disenchanted with mining due to perceived lost opportunities and an erosion of their rural lifestyle, impacting adversely on their sense of community and community cohesion.

It is strongly recommended that the proposed development of Alpha is supported by all parties and a fully coordinated approach is initiated as a matter of priority. A number of steps will be required:

- Agreement on financing arrangements and project management;
- The preparation of a fully costed development plan;

⁷ Petkova, Lockie, Rolfe and Ivanova, 2009.

- The procurement and re-zoning of land in the vicinity of Alpha and Alpha's air strip;
- The appointment of a project manager (who reports to the Barcaldine Regional Council); and
- Legislative changes to support the above.

State Government will need to initiate the above process; arrange financing; and provide support to the Barcaldine Regional Council during implementation.

2. Employment

The majority of rail and port employees will be expected to reside in the Bowen area, while the mine workforce will predominantly be engaged on a FIFO basis. Preference will be given to employees from the local region, Queensland and Australia, in that order, before foreign workers. To attract and retain staff, Waratah Coal will provide training and engage apprentices as part of their normal operations and will provide individual accommodation for FIFO staff. It is recommended that Waratah Coal develops a human resource management plan aiming to enhance the skill levels of the workforce and local communities (maximising the number of apprentices from the local region and providing greater employment opportunities for Indigenous workers and women). Liaising with organisations such as the HiHo Group, established by Girudala, should help maximise the extent to which Indigenous people participate in and benefit from the project. It is also recommended that Waratah Coal considers a housing scheme for workers who wish to reside in Alpha or the Bowen area (and possibly other locations in the region). It is also recommended that Waratah Coal develop a Code of Conduct for employees and the employees of all contractors to help minimise behaviour which might offend local residents and contribute to animosity.

3. Contracting

While project construction must contain at least 50% Chinese content (in line with the debt financing agreement with the Export-Import Bank of China), MCC will give preference during both the construction and operational phases of the project to local contractors and local suppliers whenever possible. In particular, this should translate to clear preference to contractors and suppliers based in Alpha, Bowen and other nearby centres rather than those organisations based in South East Queensland or further afield. It is recommended that Waratah Coal provide assistance to local businesses to ensure they are aware of potential contracting opportunities and understand the required contract standards and conditions. Ideally, Waratah Coal should provide input to a regional business development strategy that aims to maximise local business opportunities from the development of the four mines at Alpha. Such a strategy should be prepared with the participation of the Barcaldine, Central Highlands, Isaac and Blackall-Tambo Regional Councils, Waratah Coal, Hancock Coal and AMCI, and local businesses/contractors.

4. Cattle operations

Those properties that shall continue operations on the proposed Mining Lease will be compensated financially for any inconvenience and lost productivity. These and some neighbouring properties will be provided with power, water and improved telecommunications. Properties impacted by the railway line will be compensated financially, and Waratah Coal will work with each property owner to minimise disruptions and reduce impacts on cattle productivity as a result of the mine and railway. This may entail the realignment of fences, provision of additional watering points, the construction of new farm roads and relocation or provision of new cattle yards.

5. Road traffic

Measures to minimise disruptions and accidents caused by the increase in the number of heavy vehicles, particularly during the construction period, will include:

- Minimising disruption from trains by building overpasses or underpasses wherever possible (and if necessary, boom gates over level crossings);
- Reducing local traffic in the Alpha area by having a predominantly FIFO (self-contained) workforce;
- Providing a bus service between nearby regional centres (such as Emerald) and the mine site for employees, should a sufficient number of employees reside in a nearby regional centre;
- Preparing traffic management plans in consultation with the Department of Transport and Main Roads, the relevant regional councils and Queensland Police Service; and

- Include safe driving and fatigue management strategies for employees and contractors who will drive to or from work.

6. Emergency services

Emergency services are currently very limited in the Alpha area. The development of four coal mines in the vicinity of Alpha will lead to rapid population growth in Alpha and to a lesser extent Jericho, and will result in substantially more traffic on all roads leading to Alpha. A strategy should be prepared to enhance the capability of emergency services in the Alpha area. The strategy should be closely linked with the proposed development of Alpha (mitigation strategy #1) and should be prepared in close consultation with council and emergency service providers in Alpha and surrounding towns (Jericho, Barcaldine, Emerald, Clermont, Blackall and Tambo), as employees and contractors are expected to drive in from all of these locations, and therefore impact on emergency services in these locations. The strategy should outline infrastructure, equipment, staff and operating cost requirements. Ideally, the four mines at Alpha would provide an initial financial contribution to meet infrastructure and equipment (which would be offset against subsequent royalty payments as proposed in mitigation strategy #1), plus an additional annual contribution to help meet salary and operating costs of additional emergency services. Any recommendation, however, for an annual contribution towards the cost of emergency services needs to be weighed up against the proposed Mining Resources Rents Tax (MRRT), if or when it is introduced.

7. Welfare services

A strategy should be prepared to enhance the capacity of welfare agencies in the Alpha area. The strategy must meet the needs of Alpha's future population, and that of the workforce and dependents residing in nearby towns (Jericho, Barcaldine and Emerald in particular). The strategy should be linked to the proposed development of Alpha (mitigation strategy #1) but extend beyond Alpha's boundaries to reflect the wider impact of the mines being developed. The strategy should be prepared in close consultation with council and existing welfare agencies and should include infrastructure, equipment, staff and operating cost requirements. Ideally, the four mines at Alpha would provide an initial financial contribution to meet infrastructure and equipment (which would be offset against subsequently royalty payments), plus an additional annual contribution to help meet salary and operating costs of additional welfare services. Again, any recommendation for an annual contribution towards the cost of welfare services needs to be weighed up against the proposed MRRT, if or when it is introduced.

8. Community support

Financial contributions from mining companies are increasingly seen as an important element of the social license to operate, but need to be coordinated with council, local residents and the other resource companies. Internationally, lessons indicate that an effective way to achieve sustainable local development is for mining companies to contribute to local development plans. In the project area, the first steps are to agree on a coordinated approach and then prepare local development plans (as existing plans do not reflect the current mine proposals or provide sufficient detail to prioritise or plan contributions from resource companies). Plans should be prepared by council, with input by the State Government, local communities and the resource companies. Plans should help prioritise infrastructure and services and provide a baseline from which social and economic impacts from multiple resource projects can be monitored and assessed on a cumulative basis. However, it is premature to predict the type or level of community support that Waratah Coal might provide in the future when four large mines are likely to be developed in the Alpha area; there is uncertainty over the Barcaldine Regional Council's development proposal for Alpha; two alternative railway lines are being assessed; and uncertainty remains over the development of Abbot Point (both in terms of the infrastructure being developed and the users of that infrastructure). The proposed MRRT adds another level of uncertainty when trying to predict Waratah Coal's future level of support for local communities. However, Waratah Coal remains committed to supporting local communities, and regards local community development plans as an effective way to allocate assistance. Waratah Coal should be involved in the preparation of plans for the Alpha and Bowen areas, at a minimum, and ideally, Waratah Coal's support for Alpha should build on the initial development plan for Alpha, as described in mitigation strategy #1, and the emergency and welfare service strategies proposed in mitigation strategies #6 and #7.

It is recommended that infrastructure developed by Waratah Coal, and any subsequent community contributions, are planned in coordination with local councils, service providers, local residents and other resource companies.

9. Mine closure planning

Mine closure should not trigger new social or economic planning initiatives. Instead, plans should be prepared from the onset and aim to capitalise on the opportunities provided by mining for social and economic development, taking into consideration at all times, the need to prepare the community for life after mining. As discussed above, an effective way to achieve sustainable local development is for mining companies to contribute to local development plans. It is therefore recommended that mine closure planning be initiated from the onset as part of any local community development planning exercises.

10. Stakeholder engagement

Waratah Coal will maintain effective dialogue with a range of stakeholders throughout all phases of the project:

- Participating in local community development planning processes (as discussed above);
- Inviting input to environmental and social monitoring programs (which shall be outlined in detail in the Environmental Management and Social Impact Management Plans); and
- Continuing the information hotline (1800 number) and managing a grievance mechanism for employees, contractors and external stakeholders.

In addition to the above recommendations, which directly involve Waratah Coal, government may wish to consider the following:

11. Housing

To counter housing shortages and rising accommodation prices and help ensure the availability of housing for a range of socio-economic groups in the future, it is recommended that government:

- Ensures adequate residential land is available for development, particularly in towns such as Alpha, Bowen and Emerald;
- Ensures a range of housing options are included in new residential developments; and
- Considers making finance available for new residential developments.

The State Government may consider the establishment of additional Urban Development Areas (UDAs) in locations such as Alpha, Bowen and Emerald: locations in which the projected population increase will be relatively large when compared to the size of the existing housing market. UDAs could potentially be funded under the State Government's Resource Town Housing Affordability Program, and for Alpha, should be coordinated with the proposed town development (mitigation strategy #1).

12. Emergency health services

Emergency health services for the Bowen Basin are provided from Rockhampton, Mackay and Townsville. The emergency response time will be significantly longer for incidents in the Galilee Basin. In addition to the expansion of emergency services in Alpha (as discussed under mitigation strategies #1 and #6), consideration should be given to the upgrading of emergency health services in Emerald. To effectively serve the Galilee Basin, this would require a helicopter, equipped for medical emergencies, based permanently at Emerald. Some funding could be available under the State Government's Sustainable Resource Communities Policy, which includes funding to improve local infrastructure.

13. Training facilities

Trade training is currently provided in Emerald, but accommodation for trainees is limited. Consideration should be given to the development of on-site accommodation at Emerald's TAFE campus in an attempt to boost the number of local apprentices and other trainees gaining trade skills. Funding could again be available under the State Government's Sustainable Resource Communities Policy, and would facilitate the training of local apprentices, as recommended in mitigation strategy #2.

Summary of Recommendations

Waratah Coal has already made commitments to give preference to employees, local suppliers and contractors from the local region, the rest of Queensland and elsewhere in Australia before overseas. In addition, Waratah Coal has indicated that it will provide those properties on the mining lease, and their

neighbours, with power and improved telecommunications, and water should there be any reduction in the quality or quantity of water as a result of mine operations.⁸ It is also recommended that:

1. Local development plans are prepared by council, with input from State Government, local residents and Waratah Coal, for Alpha and Bowen;
2. Waratah Coal ensures that infrastructure built in the vicinity of Alpha, and in particular power, water, airport and communication infrastructure, meets the growing needs of the local community;
3. Community infrastructure and any subsequent local development contributions from Waratah Coal are planned in coordination with local councils, local residents and other resource companies;
4. Mine closure planning is incorporated in the local development plans from the onset;
5. Waratah Coal works with each property owner to minimise disruptions and reduce impacts on cattle productivity as a result of the mine and railway;
6. Waratah Coal considers a housing scheme for staff who wish to reside in Alpha or the Bowen area;
7. Waratah Coal provides a bus service between the mine site and any nearby regional centre that contains a sufficient number of mine employees;
8. Waratah Coal develops a human resource management plan, aiming to enhance the skill levels of the workforce and local communities, ensure opportunities for Indigenous employment and maximise the number of apprentices from the region;
9. Waratah Coal monitors and reports on the origin and gender of all employees (including the employees of contractors) and the number and composition of staff trained, on an annual basis;
10. Waratah Coal develops a Code of Conduct for employees and contractors;
11. Waratah Coal provides assistance to local businesses to ensure they are aware of potential contracting opportunities and understand the required contract standards and conditions;
12. Waratah Coal contributes, as appropriate, to (i) a business development strategy, (ii) an emergency services strategy and (iii) a welfare service strategy, for the mine area. While focusing on Alpha, each strategy needs to consider the impacts of mine development on neighbouring towns, including Jericho, Barcaldine, Emerald, Clermont, Blackall and Tambo. The strategies should be prepared in cooperation with impacted councils and local businesses, emergency service providers and existing welfare agencies, with input from Waratah Coal, Hancock Coal and AMCI. The strategies should be linked to the proposed development of Alpha (recommendations 1 and 2), subsequent community contributions (recommendation 3) and support for local businesses (recommendation 11);
13. Waratah Coal monitors and reports on the origin of all contractors and the source of goods and services (by value), on an annual basis; and
14. Waratah Coal continues its existing information hotline (1800 number) and establishes a grievance mechanism for staff, contractors and other parties.

The proposed development of Alpha (recommendations #1 and #2) has been discussed at public meetings and has received strong support. While the other recommendations have not generally been presented by Waratah Coal in public meetings, several are based on suggestions received during the public consultation process (in particular, recommendations #5, #6, #7 and #11).

⁸ Commitments made by Phil McNamara, previous CEO of Waratah Coal, during the initial public consultations in Jericho and Alpha (8 June 2010).

Acronyms

ABS	Australian Bureau of Statistics
AMCI	American Metals & Coal International (Alpha) Pty Ltd
APSDA	Abbot Point State Development Area
BIBO	Bus In – Bus Out
BITRE	Bureau of Infrastructure, Transport and Regional Economics
BMA	BHP Billiton Mitsubishi Alliance Coal Operations Pty Ltd
CEO	Chief Executive Officer
CQU	Central Queensland University
CSG	Coal Seam Gas
DEEDI	Department of Employment, Economic Development and Innovation
DIDO	Drive In – Drive Out
DIP	Department of Infrastructure and Planning, Queensland Government
EIS	Environmental Impact Statement
FIFO	Fly In – Fly Out
FTE	Full Time Equivalent
HACC	Home and Community Care
IAIA	International Association for Impact Assessment
ICMM	International Council on Mining & Metals
ILUA	Indigenous Land Use Agreement
LNG	Liquefied Natural Gas
MCC	Metallurgical Corporation of China
MCF	Multi Cargo Facility
MGMG	Moranbah Growth Management Group
MLA	Mining Lease Application
MRRT	Mining Resources Rent Tax
Mt	Million tonnes
Mtpa	Million tonnes per annum
NQBPC	North Queensland Bulk Ports Corporation
OECD	Organisation for Economic Cooperation and Development
QCoal	QCoal Pty Ltd
RC	Regional Council
SEIFA	Socio-economic Index for Areas
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
TAFE	Technical and Further Education
TOR	Terms of Reference
UDA	Urban Development Area
ULDA	Urban Land Development Authority
UNEP	United Nations Environment Programme
WHAM	Whitsunday Hinterland and Mackay
X50	50 Mtpa export capacity
X80	80 Mtpa export capacity
X110	110 Mtpa export capacity

Glossary

Cumulative impacts	Within the context of SIA, cumulative impacts refer to the incremental or combined social impacts resulting from both the project that is being assessed <u>and</u> other projects, either existing or planned, now and in the future. The inclusion of cumulative impact assessment aims to ensure that potential impacts of a project are not considered in isolation to other changes that are, or are expected, to occur.
Family	The ABS define a family as two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering and who are usually resident in the same household.
Household	The ABS defines a household as one or more persons, at least one of whom is at least 15 years of age, usually resident in the same private dwelling.
Old age dependency ratio	The ratio of people aged 65 years and over to people of working age (from 15 to 64 years of age).
Precautionary principle	Within the context of social impact assessment, the precautionary principle infers that social impacts shall be identified, described and monitored even though the potential risk of a serious social impact may be low, or the actual impact difficult to predict or quantify.
SEIFA	SEIFA is a series of indices developed by the ABS to measure socio-economic conditions for geographic areas: <ul style="list-style-type: none"> ▪ The Index of Relative Socio-economic Disadvantage focuses on variables such as low income, low educational attainment, unemployment, and dwellings without motor vehicles. ▪ The Index of Relative Socio-economic Advantage and Disadvantage is a continuum of advantage (high values) to disadvantage (low values) which is derived from variables such as households with low income and people with a tertiary education. ▪ The Index of Economic Resources focuses on variables such as the income, housing expenditure and assets of households. ▪ The Index of Education and Occupation focuses on the proportion of people with a higher qualification or those employed in a skilled occupation. Additional details can be sourced from a SEIFA Technical Paper (refer ABS, 2006).
Sex ratio	The number of males per 100 females.
Social Impact Assessment	SIA is the process of analysing and managing intended and unintended consequences of planned interventions (projects or policies) and any social change processes invoked by those interventions, to bring about a more sustainable and equitable biophysical and human environment. ⁹
Volunteer	The ABS define a volunteer as anyone who has spent time doing unpaid voluntary work through an organisation or group in the 12 months prior to the census night.
Workforce	The ABS defines anyone aged 15 years and over and either employed or unemployed (but looking for work) in the week prior to the Census Night as part of the workforce. Those people not in the workforce are aged 15 years and above and usually studying on a full-time basis, retired or are either physically or mentally incapacitated and therefore unable to undertake work.

⁹ Refer Becker and Vanclay, 2003 (p. 2).

1. INTRODUCTION

Waratah Coal Pty Ltd aims to establish a new coal mine 30 km north-west of Alpha in the Galilee Basin (Central Queensland) for the export of thermal coal to China and other international markets.

Following the submission of an Initial Advice Statement to the Queensland Government in April 2008, the project, initially referred to as the Galilee Coal Project (northern export facility), was declared to be a 'significant project'.¹⁰ This triggered the need for an Environmental Impact Statement (EIS) to ensure the project's environmental, social and economic impacts are appropriately considered. The Department of Infrastructure and Planning (DIP) prepared TOR for the EIS, which specified the need to conduct a Social Impact Assessment (SIA).

The TOR for the SIA is presented as Attachment 1. SIA & Development Pty Ltd has been contracted by Waratah Coal to complete the SIA. The assessment has been conducted by Mike Finlayson.¹¹

1.1 Overview of the Galilee Basin

The Galilee Basin is located in Central Queensland and occupies an area of approximately 230,000 km². The main towns within or bordering the Galilee Basin are Winton, Richmond and Hughenden (in the northwest), Barcaldine (centre) and Blackall and Charleville (south). The other major centres in the region are Longreach (to the west) and Emerald (to the east). These towns and the surrounding areas are well known for their grazing activities and are steeped in history. Barcaldine, for example, is the home of the Australian Labor Party, and Winton is the birthplace of Qantas. In addition to sheep and cattle, tourism is now a major industry in the region. Longreach houses the Qantas Founders Outback Museum and Australian Stockman's Hall of Fame.

The Galilee Basin supports a population of around 21,000 and is sparsely populated (approximately 0.1 people/km²).¹² The area has generally experienced a decline in its population over the past 20 years.

Although coal exploration commenced in the Galilee Basin in the late 1950s, it is only recently that the level of exploration has intensified and a number of commercial entities have proposed or are investigating the feasibility of coal or coal seam gas (CSG) projects.

While there is a high level of awareness of the exploration activity currently underway, there is considerable uncertainty as to the likelihood of individual projects being developed or the social and economic impacts that these projects may have. However, the expansion of coal mining in the neighbouring Bowen Basin has contributed significantly to the perceived environmental, economic and social development impacts likely to occur as a result of coal projects in the Galilee Basin.

1.2 Project Description

The China First Coal Project will export 40 million tonnes of coal annually and includes:

- Open cut and underground mining;
- Construction of a 447 km railway line from the mine to the Abbot Point State Development Area;
- The construction of a jetty and expansion of stockyards and other facilities at Abbot Point;
- Workforce accommodation and other facilities in the vicinity of the mine (and temporary construction camps along the proposed railway alignment during the construction period); and
- Supporting power and water infrastructure.

The project location is shown in Map 1. The project is physically located within three former shire council areas, which were incorporated into regional councils in 2008:

- The Alpha area (known previously as Jericho Council), which now forms part of the Barcaldine Regional Council;

¹⁰ Following the acquisition of Waratah Coal by Clive Palmer's Mineralogy Pty Ltd in late 2008, the Galilee Coal Project (northern export facility) was renamed the China First Coal Project.

¹¹ An overview of Mike Finlayson's relevant experience is presented inside the back cover of this report.

¹² Based on ABS population estimates for July 2007 for the ABS statistical areas of Barcaldine, Blackall, Flinders, Jericho, Winton, Aramac, Tambo, Murweh (50%) and Richmond (50%).

- The Bowen area, within the Whitsunday Regional Council; and
- The Belyando area, within the Isaac Regional Council.

Project facilities will not be located in or adjacent to any existing urban areas or settlements. The land to be developed for the mine, along with the land identified for the railway corridor, is predominantly used for grazing purposes. The proposed Mining Lease occupies an area of 550 km² and straddles eight properties, although three are operated as a single unit. Of the six effective cattle operations, three will be substantially impacted (land on which open cut mining will be undertaken and/or infrastructure established) while three shall be able to continue grazing operations as the predominant activity will be underground mining.

The railway line shall be located in a fully fenced corridor generally no more than 100 m wide, and is expected to pass through 36 properties. Six train sets (each approximately 3.2 km in length) will deliver coal to Abbot Point each day.

The need to expand facilities at Abbot Point will depend largely on the expansion currently being considered by the Queensland Government for Abbot Point, which forms part of the State Government's Northern Economic Triangle Infrastructure Plan 2007 – 2012 (a Government initiative to see the emergence of Mount Isa, Townsville and Bowen as a triangle of industrial development and mineral processing over the course of the next half century).¹³ It is expected that the project will utilise land within the Abbot Point State Development Area for a stockpile and associated infrastructure, and will construct and operate a two berth jetty approximately 4 km in length. The coal will be exported in approximately 200 shipments annually (based on Cape sized vessels with 200,000 tonne capacity).

Mine dewatering will provide the majority of water required for the mine. Some additional water may be required and is expected to be sourced either from the upper Belyando (floodplain harvesting) or piped from the proposed Connors River Dam, a site located 110 km east of Moranbah. If water is provided from the Connors River Dam, the dam and pipelines will be constructed by SunWater.

Power is expected to be provided through a 275 kV power line from the Lilyvale substation, 50 km north east of Emerald. A new sub-station is expected to be built by Powerlink near the proposed mine site and will provide power to Alpha, Jericho and each of the new mines. It is expected that the power line will follow the corridor for the existing 135 kV transmission lines.

Project construction is expected to commence in 2011 and continue for a 3 year period. The investment cost is estimated at US\$8 billion. Production is expected to commence in late 2013 or early 2014; reach maximum production within three years; and extend for a minimum of 25 years. Coal exports are expected to generate A\$4.6 billion in revenue annually.¹⁴

The project is expected to require 6,000 workers during construction and 1,700 workers during operations. The majority of the mine workforce will be located at the mine, which will operate in two 12 hour shifts each day. The workforce will be accommodated on site and generally operate on a Fly In – Fly Out (FIFO) basis, working a seven day rotation. The majority of the workforce is expected to fly in from Brisbane, Mackay and Rockhampton. In addition to direct employees, a range of goods and services will be procured locally, generating employment and opportunities for local contractors and local businesses.

Waratah Coal has entered agreements with Chinese partners for the financing, construction and marketing of the project. The Metallurgical Corporation of China (MCC) has been engaged to undertake the engineering, procurement, construction and management of the project, although Waratah Coal will have a management team and will maintain a supervisory role during construction, operations and decommissioning. MCC will utilise the expertise and resources of a number of other major Chinese companies, including the China Railway Group, the China Communications Construction Company and the Sino Coal International Engineering Group.

Debt financing is being organised through the Export-Import Bank of China. As part of the agreements, the Export-Import Bank will provide US\$5.6 billion in debt finance; project construction will contain at least 50% Chinese content; and all production will be sold to China Power International Development. At the same time, agreement has been reached with MCC that preference during both the construction and operational

¹³ Coordinator General, June 2008, p. 8.

¹⁴ Assumes an average coal price of A\$115/tonne.

phases will be given to employees from the local area, Queensland and Australia, in that order, before foreign workers.

Additional details relating to the workforce, procurement and contracting are presented in Section 3, while a more detailed overall description of the project is included in the EIS.

1.3 Methodology

The methodology for the SIA has been prepared in response to the TOR for the SIA and after consideration of an SIA Information Sheet prepared by the Social Impact Assessment Unit, within DIP, and the Sustainable Resource Communities Policy relating to SIA.^{15,16} The methodology also draws on SIA guidelines or toolkits prepared by the International Association for Impact Assessment (IAIA), the United Nations Environment Programme (UNEP), the Organisation for Economic Cooperation and Development (OECD) and the International Council on Mining & Metals (ICMM).¹⁷

Objective

The overall objective of the SIA, as outlined in the TOR, is to prepare a report to the satisfaction of Waratah Coal and DIP which:

- Defines the project’s social and cultural area of influence;
- Summarises the community engagement process and outcomes of the community engagement process;
- Presents the results of a social baseline study for the people within the project’s social and cultural area of influence;
- Presents a profile of the workforce for the project and other nearby resource projects;
- Describes and assesses the type, level and significance of the project’s social impacts (both beneficial and adverse); and
- Presents social impact mitigation strategies and measures for identified social impacts.

The TOR also states that a Social Impact Management Plan (SIMP) will be prepared following the finalisation and approval of the SIA.

Process

The method for the study can be summarised as follows:

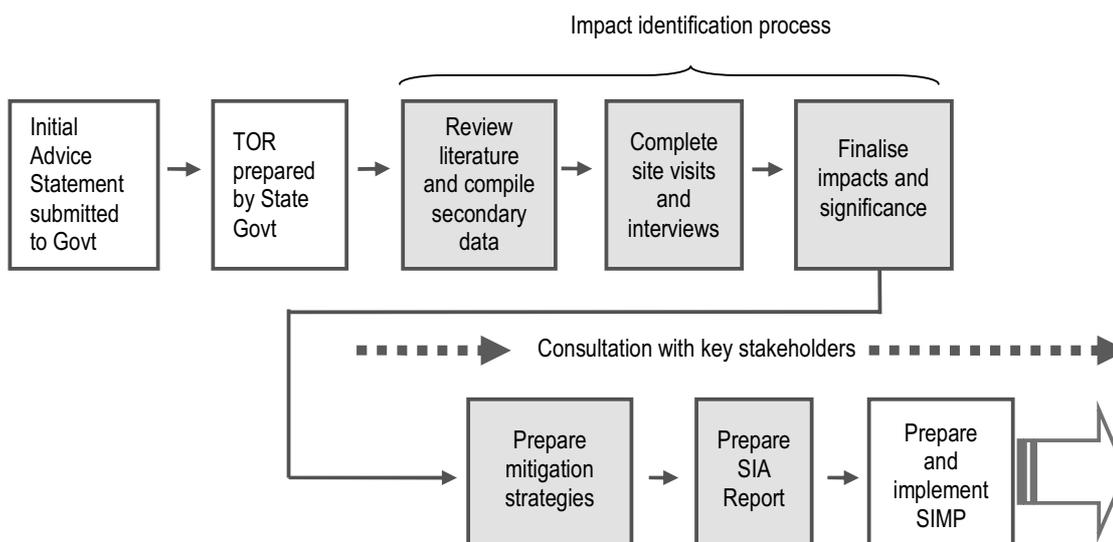


Figure 1: SIA Methodology

¹⁵ DIP, undated.

¹⁶ Queensland Government, September 2008.

¹⁷ Refer IAIA (Vanclay), 2003; UNEP (Abaza, Bisset and Sadler), 2004 (Chapter 3); OECD, 2006 (Chapter 4) and ICMM, 2005a,b.

In following international best practice for SIA methodology, the assessment:

- Analyses the social impact of other large-scale resource projects to help predict the likely social impact of the project;
- Integrates social, environmental and economic impacts;
- Integrates the cumulative impacts of other large-scale resource projects likely to be developed in a similar timeframe and in the same geographic area in which the project is located;
- Initiates a process of community engagement to both raise awareness of the project and identify and respond to social issues that communities or individuals have (laying the foundation for ongoing community engagement and participation, which shall be outlined in the SIMP); and
- Promotes sustainable development, by considering and where possible contributing to, existing development plans and priorities identified at state, regional and local levels.

The methodology has also adopted a precautionary principle, which means that an attempt has been made to identify and consider impacts even though the potential risk of an impact may be low, or the actual impact difficult to predict or quantify.

Study Area

The social impacts of the project have been assessed at several different geographic levels:

- Local area: A range of social impacts can be expected in the vicinity of the project's facilities (mine site, railway and port), which are located in the Alpha, Belyando and Bowen areas, and for the purpose of this assessment is referred to as the local area.¹⁸
 - The Alpha area is located in the upper catchment of the Fitzroy River and has a sub-tropical, semi-arid climate. The area includes 21,873 km² and has a permanent population of less than 1,000. The main settlements are Alpha (population 350) and Jericho (population 300). The dominant industry is beef cattle production.
 - The Belyando area occupies an area of 30,281 km² and has a population of a little over 10,000. The main towns are Moranbah (population 7,500) and Clermont (population 2,500). Lying in the northern half of the Bowen Basin, beef cattle has been joined by coal as the dominant industries. Moranbah was constructed in 1971 specifically to accommodate and service the coal industry.
 - The Bowen area occupies an area of 21,177 km² and has a population of around 13,000. The main towns in the district are Bowen (population 10,000) and Collinsville (population 2,000). Bowen is Queensland's oldest town (founded in 1861) and is well known for its agriculture, fishing and cattle. Collinsville was established in 1921 following the commencement of coal mining in the area. Bowen became a major export point when the deep water wharf facilities were constructed at Abbot Point in 1984.
- Nearby urban centres: The project is expected to have social impacts in Mackay, Rockhampton and Emerald, from where some materials and supplies will be sourced, and from where a considerable proportion of employees and contractors are likely to be based.
 - **Mackay** is the largest city in Central Queensland with a population of around 100,000. It is a major service centre for surrounding rural areas, a transport hub, a major port (particularly for the export of coal and sugar) and a tourist destination. Mackay has grown as a mine service centre since the development of the Bowen Basin.
 - **Rockhampton** is the second largest city in Central Queensland with a population of around 65,000. It is a major service centre and transport hub, and is well known for beef cattle production. Tourism and education are also important industries. The nearby coastal towns of Yeppoon, Emu Park and Keppel Sands have a combined population of around 25,000 and effectively function as suburbs of Rockhampton, and have therefore been included with Rockhampton for analytical purposes in the SIA.

¹⁸ The Alpha, Belyando and Bowen areas correspond to the local government areas in the 2006 population and housing census, which for Alpha, includes the towns of Alpha and Jericho.

- **Emerald** is located 170 km from Alpha and has a population approaching 12,000. Emerald is the main centre within the Central Highlands Region. While agriculture (cotton, grains and citrus) and gems have been the major industries in the past, tourism is growing, and Emerald is developing as a major service centre for nearby mines in the Bowen Basin and gas fields in the northern part of the Surat Basin.

While some employees are likely to originate from nearby centres such as Townsville (population 110,000), Longreach (population 3,700) and Charters Towers (population 8,400), the majority of employees are expected to reside in the greater Brisbane metropolitan area and to a lesser degree, Bowen, Mackay and Rockhampton. The majority of local contractors are expected to be based, at least initially, in Emerald, Mackay, Clermont and Bowen.

- The local region: Although many of the social impacts will be restricted to the local area, the cumulative impacts of other coal and CSG projects has the potential to be significant at a regional level. For the purpose of this assessment, the local region is defined as the Barcardine, Isaac, Whitsunday and Central Highlands regional councils. This includes three councils in which project facilities are located and 1 council (Central Highlands) due to its proximity to the mine site. The inclusion of the Isaac and Central Highlands regional councils will also help highlight some of the impacts that coal mining has led to in the Bowen Basin, and enable comparisons between areas with and without large-scale mining.
 - The regional councils of Barcardine, Isaac, Whitsunday and Central Highlands occupy an area of 196,279 km² (approximately 11% of Queensland) and has a population estimated at 80,000 (2% of Queensland's population). The main towns are Emerald, Bowen and Moranbah. The region includes the northern half of the Bowen Basin and the eastern most part of the Galilee Basin. The main industries are coal, beef cattle, wool and sheep, agriculture (sugar, grain crops, cotton and fruit), precious stones and tourism.
- State level: Although social impacts may not be discernable at state level, data will be presented and assessments undertaken at state level for comparative purposes. The greater Brisbane metropolitan area (encompassing the Brisbane, Gold Coast, Sunshine Coast and West Moreton regions) contains 66% of the State's population. The social impacts for Brisbane, which shall occur in response to employment and contracting opportunities for local businesses, shall therefore be incorporated in the assessment at state level.

Several Indigenous groups have traditional links to areas that shall contain project facilities, including the Wangan and Jagalingou People, in the vicinity of the proposed mine site; the Jangga and Birri People to the northwest, in the vicinity of the proposed railway line; and the Juru People along the coast, including Abbot Point. Information is presented for each Indigenous group, and impacts specified separately when appropriate. In other circumstances more general information is provided on a geographic basis which includes both the Indigenous and non-Indigenous populations.

While the study area encompasses several different geographic levels, the social and cultural area of influence will be described in more detail in Section 7, following the presentation of baseline data and assessment of impacts.

Cumulative impacts

China First is one of four large coal mines being developed in the Galilee Basin. Other coal mines in the vicinity of Alpha, all of which have been identified as 'significant' by the Queensland Government, include Alpha Coal, Kevin's Corner and South Galilee.¹⁹ In addition, Waratah Coal has submitted an Initial Advice Statement for the construction of the Galilee Basin Power Station (a proposed coal fired power station).

In addition to coal mines and power plants in the vicinity of Alpha, a number of other large scale projects are being developed, and are expected to have significant impacts within the same geographical area as that impacted by the China First Coal Project. These include:

- BMA Bowen Basin Coal Growth – the construction of three additional coal mines in the vicinity of Moranbah, being developed by BHP Billiton Mitsubishi Alliance Coal Operations Pty Ltd (BMA);

¹⁹ Both Alpha Coal and Kevin's Corner are owned by Hancock Prospecting Pty Ltd. The coal from both mines shall be exported from Abbot Point. The EIS for the Hancock mines includes a separate railway line to that proposed by Waratah Coal.

- Drake Coal Project – a new mine near Collinsville, being developed by Drake Coal (which is a subsidiary of QCoal Pty Ltd, which operates the Sonoma coal mine, 6 km south of Collinsville);
- Abbot Point Expansion (increasing the capacity of Abbot Point to 80 Mtpa or 110 Mtpa); and
- Abbot Point Multi Cargo Facility,²⁰ to facilitate the import and export of bulk commodities.²¹

In addition to the above projects, a number of Coal Seam Gas projects have been proposed in Central Queensland and generally involve the extraction of CSG in the Bowen and Surat Basins, the construction of gas pipelines to Gladstone, and the construction of Liquefied Natural Gas (LNG) plants and expansion of port facilities at Gladstone.

The cumulative social impacts of the China First Coal Project and other potential projects, identified above, are identified and assessed throughout the SIA. While basic information is presented for these projects in Table 2, including a sample of potential CSG projects in the Bowen and Surat Basins, the list is not intended to be exhaustive, but an indication of the number, scale and development timeframe of major resource projects planned for Central Queensland.

Table 2: Projects Included in the Cumulative Social Impact Assessment

Project	Location	Proponent	Capital Outlay (\$ billion)	Construction Workforce	Operations Workforce	Construction Period
China First	30 km NW of Alpha	Waratah Coal	9.4	6,000	1,500	2011-13
Alpha coal mine	40 km NW of Alpha	Hancock	5.5	2,500	NA	2011-13
Kevin's Corner	55 km north of Alpha	Hancock	6.5	2,500	NA	2011-13
South Galilee Coal Project	15 km SW of Alpha	AMCI and Bandanna Energy	1.5	2,000	750	2012-14
Galilee power station	30 km NW of Alpha	Waratah Coal	1.25	1,000	60	2012-17
Bowen Basin Coal Growth	Moranbah	BMA	5.0	2,550	NA	2010-20
Drake Coal	12 km south of Collinsville	QCoal	NA	400	300	2011-12
Abbot Point Expansion (Stage 3)	Abbot Point	NQBPC	0.68	950	50	NA
Multi Cargo Facility	Abbot Point	NQBPC	NA	NA	NA	NA
Connors River Dam and Pipelines	70 km south of Sarina	Sun Water	0.82	620	NA	2010-14
CSG/LNG projects:						
Gladstone LNG	Gladstone and Surat and Bowen Basins	Santos and Petronas	7.0	3,000	250	2010-14
Qld Curtis LNG	Gladstone and Surat Basin	British Gas	8.0	4,100	1,000	2011-14
Australian Pacific LNG	Gladstone and Surat and Bowen Basins	Origin Energy and ConocoPhillips	35.0	4,000	1,000	2011-14
Shell Australia LNG	Gladstone and Surat and Bowen Basins	Shell and Arrow	NA	3,500	200	2012-15

Source: DIP. <http://www.dip.qld.gov.au/coordinator-general-projects/index.php>

Although all of the projects listed in Table 2 will not necessarily proceed as planned, and some may not proceed at all, the 14 projects listed have a combined capital investment of \$80 billion and require over 30,000 workers during project construction, which focuses on the period 2011 to 2014. While discussed in further detail in Section 7, the impact of multiple large scale resource projects being developed within a similar time frame will include:

²⁰ Refer DIP. <http://www.dip.qld.gov.au/coordinator-general-projects/index.php>

²¹ DIP also included the East Coast Alumina Refinery and Port – which was to process bauxite from near Aurukun (Cape York) – as a significant project, but the Aluminum Corporation of China Limited (Chalco) recently indicated their intention to withdraw from the project.

- Rapid growth in employment opportunities;
- Increased demand for those locally available goods and services required for project construction (and subsequently project operation);
- Skill shortages;
- In-migration;
- Increased demand for housing;
- Increased use of public infrastructure; and
- Increased demand for public and private services.

Although communities typically change and evolve over time, the development of multiple large-scale resource projects will greatly accelerate the rate of social change occurring in Central Queensland. Cumulative social impacts are assessed within this context.

Information sources

A wide range of documents were reviewed as part of the SIA. While all external sources of information have been acknowledged and referenced, they can be categorised as follows:

- References on the methodology for conducting a SIA;
- Census and survey data from the Australian Bureau of Statistics (ABS), including but not limited to the 2006 community profile series, which summarise results from the national population and housing census and compares selected results with data from the 1996 and 2001 censuses;
- Data from other government departments and affiliated bodies;
- Research on the social impacts of mining; and
- Planning documents at state, regional and local levels.

Community engagement

The community engagement process for the project as a whole is described in detail in the EIS (refer Community Consultation Report). Following is a summary of the consultation process as it relates to the SIA:

Public consultations were held in Barcaldine, Jericho, Alpha, Emerald, Clermont, Collinsville and Bowen in June and September 2010 (and Mt Coolon in September), following initial meetings with the Barcaldine, Central Highlands, Isaac, Whitsunday and Mackay Regional Councils.

Public comments were invited at each public meeting (and a comment form provided in which people could document queries or comments and send to Waratah Coal). Comments could also be provided via email (info@waratahcoal.com) or phone (1800085915), while additional information was available on the Waratah Coal website (www.waratahcoal.com). A summary of the comments and queries received during the community engagement process is provided in Section 6.

Field work was completed between July and September and included further consultations with regional councils and other interested parties.

A list of people consulted during the study is presented as Attachment 2. Results from other community consultation processes have also been incorporated in the SIA as appropriate, including for example, the Bowen Abbot Point Community Consultation Group.

2. SOCIAL BASELINE

The social baseline provides information from which the social impact of the project will be assessed, and will provide data against which future impacts can be monitored.

2.1 Population

Queensland has a population of around 4.5 million. The population of the four regional councils and urban centres of Mackay and Rockhampton, in mid 2006, are illustrated in Figure 2.²²

²² Population data are based on the place of usual residence on the night of the census. Data for Mackay is limited to the local statistical area. Data for Rockhampton includes the ABS statistical area of

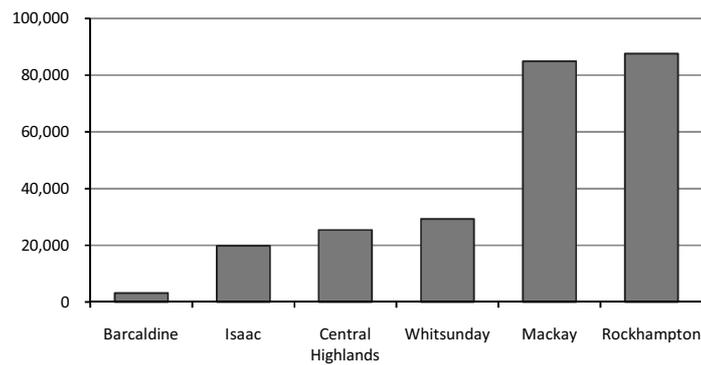


Figure 2: Population of Regional Councils, Mackay and Rockhampton, 2006

Source: ABS, 2007.

Queensland has experienced strong population growth over a prolonged period. Much of the increase has been in South East Queensland and the greater Brisbane area in particular, where around 66% of the state's population resides. In 2007/8 the population growth was attributed to net interstate migration (24%), net overseas migration (42%) and natural increase (34%).²³

Migration

Queensland was the home to 33,029 new settlers from overseas in 2008/9. This represented 21% of Australia's immigrant intake, and a substantial increase from 10 years earlier, when 17,286 migrants (or 19% of the Australian total) settled in Queensland. The origin of these settlers is illustrated in Figure 3.

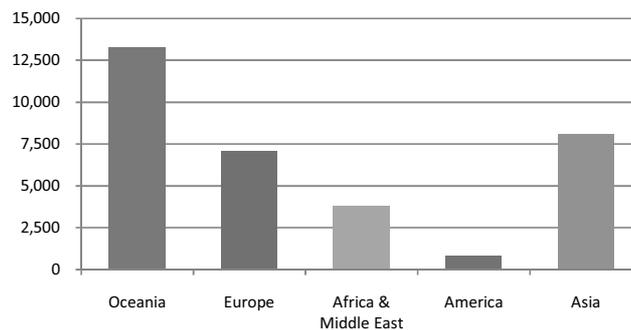


Figure 3: Origin of Queensland Overseas Migrants, 2008/9

Source: Office of Economic and Statistical Research, July 2009.

Australia's immigration program is contributing to a more diverse cultural society:

- Overseas immigration contributes around 42% of Queensland's population increase; and
- Around half of all migrants have a non-Anglo Saxon background.

Sixty percent of overseas migrants are between 20 and 49 years of age, and excluding New Zealand citizens and children born to Australian citizens overseas, 61% entered Queensland under the migrant skills program.

Interstate migration is also attracting working age people: in the year to 30 June 2008 Queensland gained 5,700 children aged 0–14, and 17,500 working age young people and adults (aged 15–64), but lost 60 people of retirement age (aged 65 years and older).²⁴

Population growth

In terms of growth rates, Queensland's population increased by 2.3% in the year to 30 June 2008. The population has increased most rapidly in South East Queensland and in selected cities and towns along the

Livingstone, which includes the coastal towns of Yeppoon, Emu Park and Keppel Sands.

²³ DIP, January 2009.

²⁴ DIP, July 2009.

east coast. Much of the remainder of Queensland, including rural areas and particularly the inland rural areas, have experienced a steady decline in their population over several decades. In general, this is resulting in an increasingly urbanised and coastal population.

As shown in Figure 4, the project area encompasses a number of vastly different population trends:

- Alpha, like the remainder of the Barcaldine Regional Council, experienced a decline in population over the 10 years from 1996 to 2006;
- Belyando, like a number of other areas that lie within or overlap with the Bowen Basin (eg. Broadsound, Nebo, Emerald and Peak Downs), has experienced considerable population growth over the same time period;
- Although Rockhampton has shown little growth, the nearby coastal towns have grown substantially and contributed to the positive overall growth pattern depicted; and
- Mackay has experienced sustained growth as a result of its industrialisation and growing importance as major education and service centres (which provides employment opportunities), and its popularity as an attractive (coastal) location in which to reside.

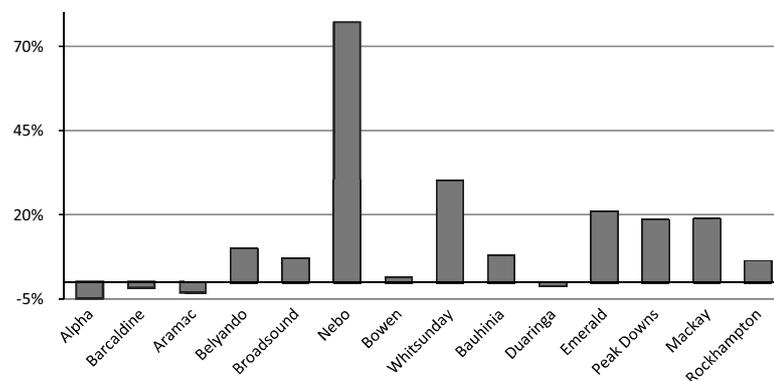


Figure 4: Percentage Population Change between 1996 and 2006

Source: ABS, 2007.

The positive population growth rates experienced for Nebo, Belyando, Broadsound and Emerald go against the decline experienced in most rural areas of Queensland and can be attributed to the development and expansion of coal mining, and the development of Emerald as a centre to service the coal industry.

Relatively high growth in Whitsunday reflects its popularity as a tourist destination and place to retire. Bowen had little growth over the decade to 2006, but is now showing signs of an increasing population due to its rising popularity as a tourist destination and the expansion of the Abbot Point export facilities.

The Planning Information and Forecasting Unit (within DIP) have prepared population projections for councils and districts throughout Queensland. Queensland's population is expected to grow by an average of 1.5% per annum to reach 6.3 million by 2031. Strong growth is also forecast for Mackay (1.9% annual growth), Belyando (2.0%) and Emerald (2.5%), and modest growth for Bowen (1.2%) and Rockhampton (0.8%), although the coastal towns adjacent to Rockhampton are forecast to grow by 2.3% annually.²⁵ In contrast, Alpha is expected to grow by 0.2% per annum (after experiencing a declining population over the past 25 years), while the population of Barcaldine is expected to continue to fall (-0.03% annual decline over the next 25 years). The extent of the difference in the population projections is highlighted in Figure 5

²⁵ DIP, December 2008

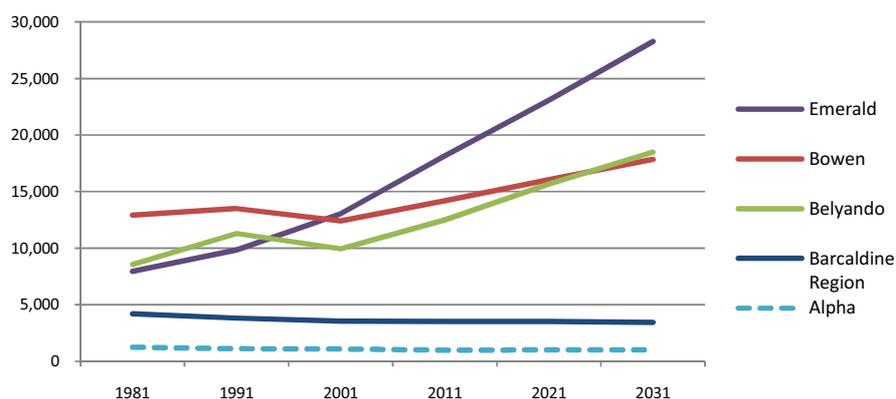


Figure 5: Past and Projected Population, 1981-2031

Source: DIP (Planning Information and Forecasting Unit), 2008.

2.2 Demography

In addition to a rapidly increasing population, Queensland is experiencing rapid demographic change:

- The population is aging;
- Household composition is changing: the ‘model’ family (typically consisting of two parents and often two or more children) is less common than in the past, while couples that do not have children, single parent families or single person households are more common; and
- The average number of household occupants is falling.²⁶

Key demographic variables for the local area, local region and Queensland are summarised in Table 3.

Table 3: Demographic Summary

Administrative Unit	Population	Growth Rate (%)	Median Age (years)	Sex Ratio	Household Size	Population 18 yrs and above (%)
Alpha	919	-0.5%	38	113	2.4	76%
Belyando	10,456	1.0%	30	116	2.8	70%
Bowen	12,379	0.2%	41	111	2.4	76%
Mackay	84,889	1.7%	35	103	2.7	73%
Rockhampton	89,893	0.6%	37	100	2.5	75%
Regional Councils (4)	77,896	1.4%	34	116	2.7	74%
Queensland	3,904,534	1.9%	36	98	2.6	75%

NB: The population, median age, household size and population 18 years and above are based on 2006 census results.

The growth rate represents the average annual growth rate between 1996 and 2006.

The sex ratio is defined as the number of males per 100 females and is based on results from the 2006 census.

Source: ABS, 2007.

The demographic characteristics of the Indigenous population are substantially different to the non-Indigenous population within the four regional councils:

- The median age of Indigenous people is 21 (compared to 34);
- The sex ratio is 102 (compared to 116); and
- The average household size is 3.3 (compared to 2.7).

²⁶ Department of Local Government, Planning, Sport and Recreation, March 2007.

The four regional councils recorded modest population growth between 1996 and 2006, due primarily to the towns impacted by mining in the Bowen Basin. The four regional councils also had substantially more males than females (due primarily to the predominantly male workforce in mining and construction industries). The average age varies considerably: Alpha has a relatively older population while Belyando has a younger population. This is expected to reflect the nature of the work available (ie. Alpha has a high proportion of farmers, who are often older; Belyando has a high proportion of mining employees, who are often younger).

Table 4 shows the percent of males and females that have married in the past, and the percent that are divorced. A higher proportion of people in Alpha have married, and fewer have divorced, than the region, Mackay, Rockhampton or Queensland as a whole. This is expected to reflect a slightly older, more stable community.

Table 4: Marriage and Divorce

Administrative Unit	Males > 15 yrs age		Females > 15 yrs age	
	Married (%)	Divorced (%)	Married (%)	Divorced (%)
Alpha	71	18	76	10
Belyando	63	17	71	12
Bowen	66	23	73	19
Mackay	64	17	72	18
Rockhampton	63	19	67	21
Regional Councils (4)	63	21	71	18
Queensland	63	18	70	22

NB: The population who is married refers to both those people that are or have previously been married.

Source: ABS, 2007.

Table 5 summarises the change in the composition of families between 1996 and 2006. In all locations there has been a substantial decrease in the proportion of families with children, and in most locations, a small increase in the proportion of single parent families (most noticeably in Alpha).

Table 5: Family Composition

Administrative Unit	Parents with children (%)		Parents without children (%)		Single parent families (%)	
	1996	2006	1996	2006	1996	2006
Alpha	62	47	33	44	5	9
Belyando	64	57	28	35	8	8
Bowen	47	39	40	47	13	14
Mackay	52	48	34	38	14	14
Rockhampton	48	48	36	36	16	16
Regional Councils (4)	57	49	34	41	9	10
Queensland	48	44	37	40	15	16

Source: ABS, 2007.

Transient population

On the night of the 2006 national population and housing census, an additional 142,346 people were recorded in Queensland (from interstate and overseas), representing a 4% increase in Queensland's population. The proportion of people not in their usual place of residence at a particular point in time can be used as a measure of the transient population, and is often discussed as a factor which contributes to the 'sense of community'.

The proportion of people who did not usually reside in the project area, and comparative data for Queensland, is shown in Figure 6.

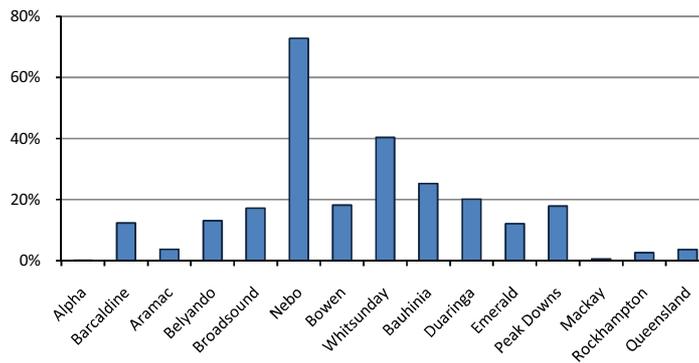


Figure 6: Proportion of Population who are Not Usual Residents

Source: ABS, 2007.

Within the four regional councils, an additional 17,912 people were present on the night of the census. Although this will not only include workers and their families, but tourists and other visitors, this represented an increase of 23% on the residential population. Whitsunday recorded a 40% increase, attributed predominantly to overseas and interstate tourists as the census was conducted on 8 August, the height of the tourist season in north Queensland. The high proportion of non-residents in Nebo (73%), Bauhinia (25%) and Duaringa (20%) is attributed primarily to mine workers who are engaged on a FIFO or Drive In-Drive Out (DIDO) basis, and is a stark contrast to the non-mining areas (with the exception of Barcaldine, where the relatively high proportion of non-residents is also attributed primarily to tourists).

Another measure of the degree of permanency of the community can be gained by assessing the proportion of the population that resided in the same residence in previous years. Census results are presented in Figure 7.

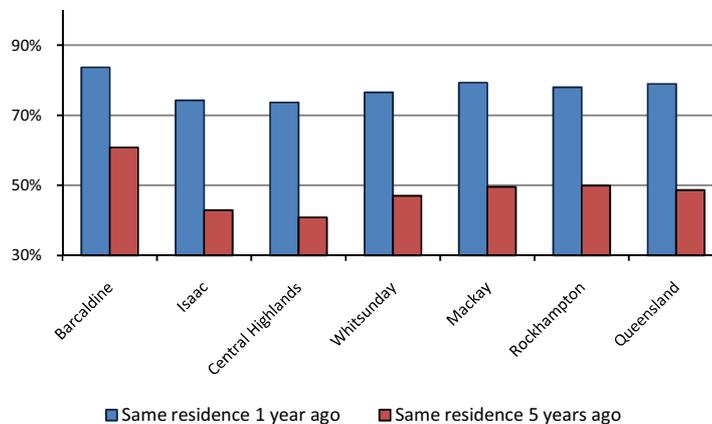


Figure 7: Proportion of Population in the Same Residence as Previously

Source: ABS, 2007.

Figure 7 indicates that the population is more stable in Barcaldine and less stable in Isaac and the Central Highlands, particularly when based on the proportion of the population that are in the same residence as five years previously. There is little difference between the Whitsunday Regional Council, Mackay, Rockhampton and Queensland. However, all locations exhibit relatively high mobility: around 25% of the population has relocated within the past year, and 50% has relocated within the last 5 years.

The impact that mining can have on a population is further highlighted by an ABS assessment of census data for the Bowen Basin: of 49,560 people from urban centres or localities within the Bowen Basin (including towns such as Emerald, Moranbah, Dysart, Blackwater and Middlemount), 17% (8,512) spent the night in a dwelling in which they did not usually live. Of these, 3% usually lived overseas, 4% had no fixed

address, 15% were from farms or small rural communities, and 78% were from urban centres, including Mackay (15%), Brisbane (8%), Rockhampton (7%), Gladstone (2%) and Yeppoon (2%).²⁷

2.3 Ethnic and Cultural Characteristics

Ethnic characteristics of the local area, local region and Queensland are summarised in Table 6: the majority of people in the local area were born in Australia; are Australian citizens; and speak only English. These characteristics are notably higher in Jericho and to a lesser extent, Belyando.

Table 6: Cultural and Ethnic Characteristics

Administrative Unit	Indigenous Population (%)	Born in Australia (%)	Australian Citizens (%)	Speaks only English (%)
Alpha	3.6	96	94	99
Belyando	1.8	92	88	98
Bowen	6.5	88	84	95
Mackay	3.9	89	87	97
Rockhampton	5.1	92	89	97
Regional Councils (4)	3.4	89	86	97
Queensland	3.3	81	86	92

Source: ABS, 2007.

Cultural characteristics of the local Indigenous groups and the communities of Alpha, Barcaldine, Clermont, Moranbah and Bowen are described below.

Indigenous groups

The 2006 census recorded an Indigenous population in the local region of 2,638. This represents 3.4% of the population and is roughly the same proportion as for Queensland as a whole. The local area includes four main Indigenous groups:

- The Wangan and Jagalingou People are the traditional owners of much of the proposed mining lease area;
- The Jangga People are the traditional owners of an area centred on the town of Mt Coolon;
- The Birri People are the traditional owners of land in the vicinity of Collinsville; and
- The Juru People are the traditional owners of coastal areas in the Bowen region.

Results from the census in 2006 indicate that 98% of the Indigenous population in the four regional council areas only speak English at home. While the Indigenous population are in this respect, more integrated within the broader community than many more isolated Indigenous communities, census results indicates significant differences between the Indigenous and non-Indigenous people in the local region:

- The Indigenous population is far younger;
- The unemployment rate is substantially higher (refer Section 2.5);
- Income levels are lower (refer Section 2.5);
- Health levels are lower (refer Section 2.7); and
- Education levels are lower (refer Section 2.8).

The Mabo Decision (1992) and recognition of traditional ownership of land under the *Native Title Act 1993* was intended to provide Indigenous Australians with the leverage to further their social and economic interests. Following is a brief summary of the main agreements entered into by local Indigenous groups:

- The Wangan and Jagalingou People registered a native title claim in 2004 and signed an Indigenous Land Use Agreement (ILUA) with Rio Tinto Coal Australia in May 2008. The ILUA covers an area of 30,274 km² (including much of the proposed mining lease for the Galilee coal project), but relates specifically to the Blair Athol and Clermont coal mines. As part of the agreement an Aboriginal Community Development Fund has been established. Rio Tinto provides

²⁷ ABS, 2008, p.3.

\$500,000 to the fund annually for grants aiming to achieve equivalent access and outcomes in education, training, employment and economic participation as that enjoyed by the community as a whole as well as retaining the unique heritage and traditions of the Wangan and Jagalingou People.²⁸

- The Jangga People are recognised as the traditional owners of 20,700 km² (centred on the town of Mt Coolon) and have signed an ILUA with the Charters Towers, Isaac and Whitsunday regional councils in early 2010. The ILUA focuses on infrastructure development, terms of access and consultation protocols: the councils agreeing to include the Jangga People in their decision-making processes about matters that could impact on their rights (including construction of roads and buildings, and providing services to the communities).²⁹
- In 2003 the Jangga People signed the Twin Hills ILUA with BMA Gold Limited which allowed mining to continue in an area of 365 km² located 120 km north-west of Clermont, in the then Belyando Shire.³⁰
- The Birri People registered a native title claim over an area of 14,901 km² in April 1998, including the northern parts of the Whitsunday Regional Council.³¹
- The Birri People entered an ILUA with the Queensland Government in December 2003 to enable mineral exploration, including an area of some 1,628.5 km² immediately north-west of Collinsville.³²
- The Birri People also entered a Cultural Heritage Agreement with Sonoma Coal (a mine 6 km south of Collinsville). The Agreement aims to preserve and manage cultural heritage. Sonoma Coal also indicated that it would provide support for Indigenous development and training.³³ The Birri People claim native title to the north, and have received compensation payments from the owners of the Pajingo mine (75 km south of Charters Towers) in 2001;³⁴ and
- The Juru People have entered agreements concerning dugong and turtle management, but no agreements concerning land issues.

The Girudala Community Co-Operative Society Ltd was established in 1974 (although known as the Whitsunday Community Co-operative prior to 1983).³⁵ Girudala is an Indigenous community controlled organisation that provides a range of services and promotes the welfare of Aboriginal, Torres Strait and South Sea Islander people in Bowen, Collinsville and Proserpine. Programs include Affordable Housing, Home and Community Care, Family Support, Health and Employment, Training and Support.

Girudala established the HiHo Group in February 2010. The HiHo Group aims to provide recruitment, training and contracting services to companies operating in the Bowen Basin, and includes HiHo Jobs, a recruitment company to be based in Mackay.

The Juru have also prepared an Aboriginal Knowledge booklet: '*Wadda Mooli - Welcome to Juru Country*'. The booklet is designed for school students and aims to help students and teachers to understand issues such as Aboriginal and Torres Strait Islander protocols, bush vegetation, their local ancestors' memorial and local Indigenous organisations.

Alpha

Alpha was established in 1884 during the construction of the railway line from Rockhampton to Longreach. The cultural characteristics of the Alpha community are similar to other small, rural areas of central Queensland:

- Much of the cultural identity is developed from the origin of the people (Anglo-Saxon) and their recent history, which is dominated by the development of grazing industries and commenced with the introduction of sheep in the Barcaldine area in 1863;

²⁸ Rio Tinto, undated, pg. 1.

²⁹ National Native Title Tribunal, February 2010.

³⁰ Refer <http://www.atns.net.au/agreement.asp?EntityID=1896>

³¹ Refer www.nntt.gov.au/Applications-And-Determinations/Search-Applications/

³² Refer <http://www.atns.net.au/agreement.asp?EntityID=1888>

³³ Refer http://www.qcoal.com.au/images/Sonoma_Info_Bulletin_5.pdf

³⁴ Refer <http://ntru.aiatsis.gov.au/newlet/may-june-01.pdf> (p.10)

³⁵ Refer <http://www.girudala.com.au/>

- There is a strong sense of community with high levels of participation in sport and cultural events;
- A strong commitment to local organisations, volunteering and helping neighbours and others;
- Many of the people will be independent and resourceful (a requirement for people managing and living on large grazing properties); and
- The physical landscape is an integral part of people's identity as it provides a source of income and recreation to many; it holds memories of events and family occasions; and it's vastness influences many daily activities, such as the time taken to travel to school or work.

This does not mean, however, that the cultural characteristics of the Alpha community are not changing. Traditional forms of entertainment, recreation and socialising are being replaced by TV, video games, the internet, email and mobile phones. People have less time for communal events and local organisations struggle from year to year. The aging and declining population and increased mobility are threats to both local organisations and local businesses.

Barcaldine

Barcaldine was initially a sheep grazing property, established in 1863. A segment of the property was allocated for the town and the town established in 1886. Barcaldine is steeped in history, and despite a relatively modest population (approximately 1,600), has been an important regional centre for well over a century. Barcaldine's cultural identity is similar to that described for Alpha. However, as a regional centre and important historical location, Barcaldine has a more diverse economy which includes government agencies, grazing and tourism. Barcaldine has more resources than what might be expected for a town with its population, but at the same time, faces the threats of an aging and declining population and the possible decline in government services or government funding.

Clermont

Clermont was established in 1864 following the discovery of gold in the area in 1861. Gold, copper and coal mining and sheep and cattle grazing have been the main industries ever since. Clermont has experienced large variations in its population, and experienced a steady decline more recently as government services were withdrawn to larger urban centres and many small businesses no longer remained viable once people increased their mobility and shopped in larger centres such as Emerald, Mackay and Moranbah. The Blair Athol coal mine, located 20 km north-west of Clermont, commenced in 1984 and resurrected Clermont's vitality. Although expected to close in 2016, production and employment levels will be maintained from the Clermont coal mine, which is located 12 km north-west of the township, and recently commenced production.

The majority of mine employees reside in Clermont. The SIA for the Clermont coal mine indicated that most local people thought that the mix of mining and agriculture was a positive feature of Clermont as both industries contribute to the attributes and atmosphere of the area (p.13)³⁶. The SIA identifies a large number of sporting and recreational facilities, and notes they have a high level of local support. The cultural backgrounds and cultural values of the local population must, however, have broadened since the Blair Athol mine, as many of the mine employees would not have had a rural upbringing, and may not necessarily attach the same values and importance to the surrounding environment or specific locations. However, Clermont has maintained its rural setting and has maintained a strong sense of community. In fact, mining – and more specifically the vitality from high income levels and community contributions provided by Rio Tinto – may have strengthened the sense of community in Clermont.³⁷ Additional details on the impact of mining on Clermont are included in Section 4.4.

Moranbah

Moranbah was constructed in 1971 as a mining town and has around a dozen coal mines within a 50 km radius. Census results from 2006 indicate that the town's resident population of 7,131 had:

- 124 males per 100 females;
- An average age of 29 (compared to 36 for Queensland as a whole); and
- An average income of double the average for Queensland.

³⁶ The SIA can be accessed at <http://www.dip.qld.gov.au/coordinator-generals-projects/completed.html> (Clermont Coal Mine).

³⁷ The social impacts of the Clermont coal mine are discussed further in Section 3.

An additional 1,129 census respondents were located in Moranbah on the night of the census who usually resided elsewhere. Many of these respondents were mine workers employed on a FIFO or DIDO basis. When adding this group to the Moranbah residents there were 158 males per 100 females and an average income level which is 2.25 times the Queensland average.

As the vast majority of the town's residents are from other parts of Australia, the cultural identity will not be closely linked to the physical landscape or the local history. However, 60% of families have two parents and children (compared to 44% for Queensland) and Moranbah is considered to be a good town to raise a family.³⁸ This attitude appears to be linked closely to high income levels and job security rather than the physical setting or cultural attributes. However, a study undertaken from 2005 to 2007 concluded that 'the deliberate attempt to plan Moranbah so as to feel like an established community appeared to have had lasting benefits in terms of the ability of the town to generate a sense of community and to attract service industries and permanent residents'.³⁹

Collinsville

The Collinsville area was initially settled by pastoralists in the 1860s. Although coal and other minerals were soon discovered, mining did not commence until 1919, when coal was produced and railed to Bowen, some 79 km to the north east. Mining led to the established of the town in 1921. Coal mining remains the most important industry (50% of the male workforce is engaged in mining), although Collinsville is also surrounded by beef cattle properties. The main mines in the area today are the Collinsville and Sonoma mines, operated by Xstrata and QCoal Ltd, respectively. A problem facing Collinsville is the high proportion of local coal employees who chose to live in Bowen and commute daily to Collinsville. This has led to a declining population, a reduction in local businesses and non-mining employment, and a loss of vitality in the community. Many of the remaining residents are clearly opposed to FIFO or DIDO practices. There has recently been a strike over employment conditions and protests over the existing railway, which passes through the town. A local group has been established (Mining Communities United) with the aim of lobbying the mines to increase the proportion of employees residing in Collinsville and increase the contributions from both companies to the local community.

Bowen

Bowen has a long and colourful history since being established in 1861 as the first town in north Queensland. It was the main point of entry for sea cargo in north Queensland following the construction of the town wharf in 1865, and accommodated a squadron of Catalina sea planes towards the end of World War II. However, Bowen's population has remained relatively stable over a prolonged period, despite the rapid development of Townsville to the north and Mackay and the Whitsundays to the south.

Bowen is well known for its mangoes, tomatoes and vegetables, and supports a significant population with Mediterranean heritage and a relatively high transient population. Bowen's economy suffered when the local meatworks closed in 1997, and the population has stagnated ever since. However, Bowen is a diverse but very relaxed town. It has a unique environment (located in a rain shadow it has a dry tropical climate with a myriad of nearby islands inside the Great Barrier Reef), and is experiencing growth in tourism. It is also becoming a popular location for mine employees to reside.

The development of Abbot Point has also contributed to local expectations (both in terms of the economy and population), but these were dampened by the recent decision by Chalco not to proceed with the construction of an aluminium refinery. Many of the longer term residents of Bowen will be used to the cyclical nature of the local economy, and its transient population, although there have been substantial developments in the past decade, and strong growth is projected over the next 25 years.

Volunteering

The proportion of volunteers can be used as a proxy for the sense of community. For Queensland as a whole, 20% of the population aged 15 years and above had indicated during the 2006 census that they had undertaken voluntary work during the previous year. The participation in voluntary activities was higher for females (23%) than males (17%), and was highest for males and females aged between 35 and 65.

³⁸ Refer <http://www.dip.qld.gov.au/projects/mining-and-mineral-processing/coal/bma-bowen-basin-coal-growth.html> (Caval Ridge SIA, p.17).

³⁹ Petkova, Lockie, Rolfe and Ivanova, 2009, p.226.

As shown in Figure 8, the participation in voluntary activities within the Barcaldine Regional Council is substantially higher than for the other areas. The participation in voluntary activities is also notably higher in the Isaac and Central Highlands regions than for Mackay, Rockhampton or Queensland as a whole. This implies that volunteering is more popular in rural communities than in cities, and while some rural areas may be dominated by coal mining, this does not necessarily mean that people are too busy or don't want to volunteer.

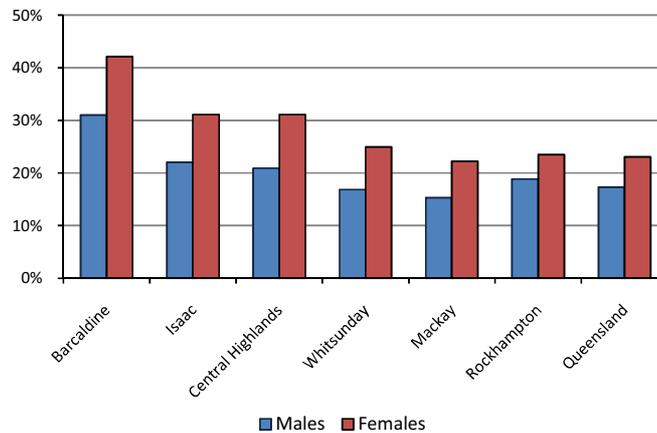


Figure 8: Proportion of Volunteers in the Population

Source: ABS, 2007.

It is not clear why the Whitsunday area has a relatively low level of volunteers in comparison to the Barcaldine, Isaac and Central Highlands regions, although it is similar to Mackay, Rockhampton and Queensland as a whole.

2.4 Land Use

Economic activities

Grazing beef cattle on natural vegetation is the main agricultural endeavour on the proposed mining lease, on properties neighbouring the proposed mining lease, and along the proposed railway corridor. Properties vary in size from 1,000 ha to 40,000 ha and are family operated. There are two intensive cattle operations (feedlots) in the vicinity of the proposed railway, and relatively small areas of cropping on some properties, generally limited to the floodplains on the Belyando and Suttor Rivers.

In addition to Waratah Coal's Mining Lease Application (MLA), the railway passes through a number of mineral and coal exploration permits and passes by several mining leases. The only active mining leases are for coal:

- The Collinsville coal mine is owned by Xstrata and Itochu Corporation and is managed by Thiess. Mining commenced in 2001. The mine produces around 6 Mt coal per annum and employs around 370 staff; and
- The Sonoma coal mine is owned by QCoal. Mining commenced in 2008. The mine produces around 4 Mt coal per annum and employs around 150 staff.

Conservation areas

One of the six properties in the proposed mining lease is managed jointly as a nature refuge with sustainable cattle production. This represents around 10% of the proposed lease area. The owners of 'Bimblebox' do not reside on the property.

The proposed railway alignment does not dissect any conservation areas, but does pass nearby several. The closest is Mt Aberdeen National Park, which is some 40 km south-west of Bowen and approximately 5 km to the east of the railway route.

The APSDA consist of 16,230 hectares, of which approximately 40% consists of marshes and wetlands and are recognised conservation areas.

Recreation

Some recreational shooting will occur on most properties within the proposed mining lease, and considerable shooting, both legal and illegal, occurs on properties in which the railway line will pass. While there is no shortage of alternative land where shooting could occur in the future, the railway line and adjacent access road will provide additional access points for illegal shooters. While not necessarily regarded as a high risk to project employees or contractors, illegal shooting is a problem faced by property owners and will need to be addressed by the project to ensure property owners are not adversely disadvantaged (eg. particularly from stock losses or damage to fences/gates).

The only type of recreation potentially impacted by the China First Coal Project will be those activities on or dependent on waterways that are in the vicinity of project facilities. Activities such as fishing, swimming and picnicking could be adversely impacted in those locations where the railway line passes by a waterway that is currently used by local residents. The most likely point of impact will be in the vicinity of Collinsville, where the railway could traverse or run parallel to the Bowen River. However, the railway route has been developed to minimise the impact on waterways.

Indigenous land use

Much of the MLA and proposed railway route are either subject to a Registered Native Title Claim or Indigenous Land Use Agreement. However, few Indigenous people reside near or regularly utilise land or resources on the proposed MLA or the upper part of the railway alignment. Culturally significant sites have been identified in previous studies at Abbot Point. While other significant sites may be identified during the course of the study, and these protected as appropriate, the local Indigenous groups are not expected to utilise areas which will be impacted by the project, other than recreational areas along some waterways in the lower half of the railway alignment, such as the Bowen River.

2.5 Employment and Income

Employment

In 2006, Queensland had a workforce participation rate of 73% among males and 60% among females of 15 years of age and above (which were both slightly higher than for Australia as a whole). The unemployment rate (males 4.4%; females 5.1%) was similar to Australia, as was the proportion of males and females in part time employment (males 18%; females 47%).⁴⁰

In comparison: with the exception of Bowen and Rockhampton, all districts in the four regions, and Mackay, exhibited a higher level of male full time employment, higher male workforce participation and lower male unemployment than for Queensland as a whole. Again, with the exception of Bowen and Rockhampton, all districts in the four regions, and Mackay, exhibited higher female workforce participation and lower female unemployment than for Queensland as a whole (refer Figure 9).

In comparison to 1996 data, the level of part-time employment has increased marginally for both men and women throughout the local area and local region, as it has for Queensland as a whole. Labour force participation has also increased since 1996, particularly for women (increasing from 56% to 67% within the region compared to an increase from 53% to 60% for Queensland as a whole). The unemployment rate has dropped substantially since 1996, both for men and women. While the region as a whole has low unemployment in 2006 (males 2.3%; females 3.4%) the level of unemployment in Alpha was even lower (males 1.0%; females 1.4%).

Despite a rise in unemployment as a result of the global financial crisis, employment levels have rebounded quickly. Unemployment levels are now only marginally higher than they were in 2006.

The workforce participation rate among the Indigenous population in the region (males 76%; females 60%) is marginally lower than the non-Indigenous population (males 84%; females 67%), but is higher than for the state-wide Indigenous population (males 67%; females 53%). Similarly, the unemployment rate within the Indigenous population in the region (males 6.9%; females 11.4%) is higher than the non-Indigenous

⁴⁰ The unemployment rate for Australia as a whole was 5.1% in June 2010. Although the unemployment rate has increased marginally since the 2006 census, analyses of 2006 data remain meaningful, particularly in highlighting differences in the workforce within the project area, and between the project area and Queensland as a whole.

equivalent (males 2.3%; females 3.4%), but lower than the state average for Indigenous people (males 12.6%; females 13.8%).

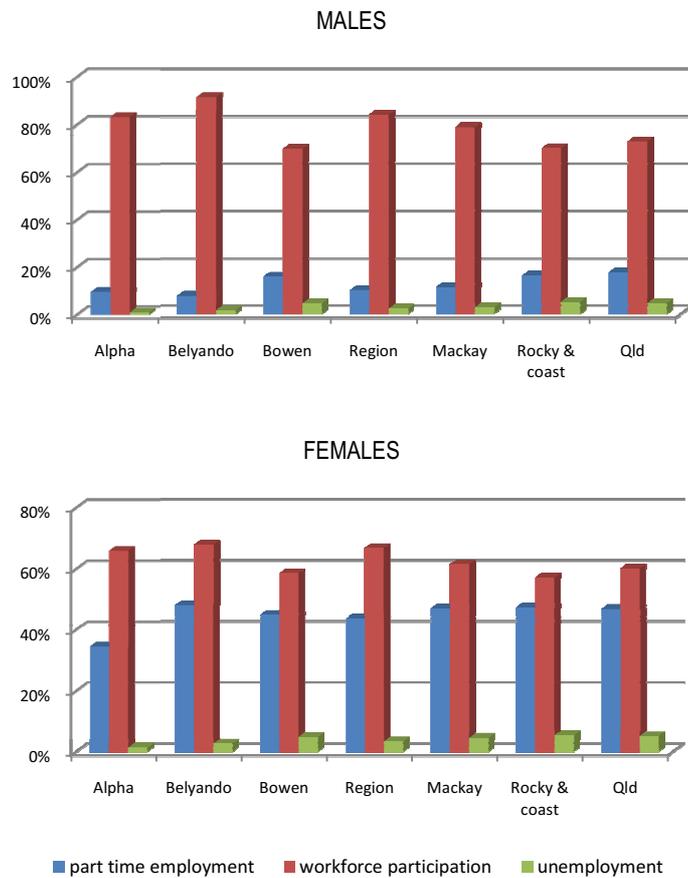


Figure 9: Workforce Participation (people aged 15 yrs and above)
 Source: ABS, 2007.

Youth unemployment is a challenge and a key social issue throughout Australia. The level of unemployment within the region for those aged 15 to 24 is 4.4% for males and 5.5% for females. This is almost double the unemployment rate for the total male or female workforce, but as shown in Figure 10, is considerably lower than the same age categories for Queensland as a whole.

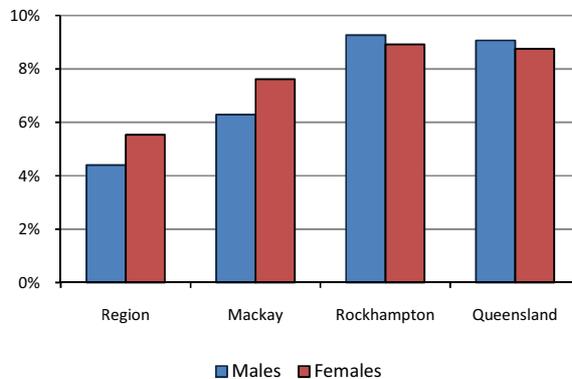


Figure 10: Unemployment Rate for Workforce 15 to 24 Years of Age
 Source: ABS, 2007.

While employment ratios are high throughout the local area and local region, the importance of particular industries varies substantially. As shown in Figure 11, 57% of males and 42% of females in Alpha are engaged in rural industries (defined as agriculture, forestry and fisheries). In Belyando, 55% of males are employed in the mining sector. In Bowen, employment is spread more evenly between several industries.

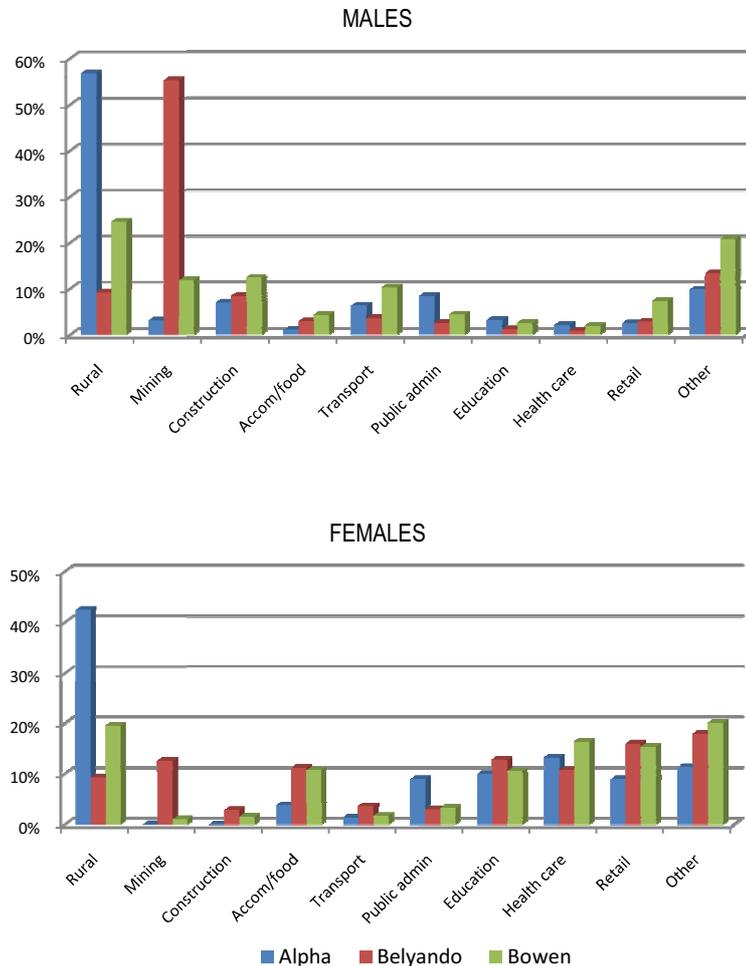


Figure 11: Industry of Employment (persons > 15 yrs of age)

Source: ABS, 2007.

Within the region, the majority of males are employed in mining (29%), rural industries (14%) and construction (12%). Females are employed in accommodation and food services (15%), retail (15%) and education and training (12%). In Mackay and Rockhampton the main industry of employment for males is construction, while females are employed in the health care, education and retail sectors.

Income

Although the local area and local region have relatively high employment and workforce participation rates, as shown in Figure 12, income levels vary substantially:

- Median income levels in Alpha and Bowen are 8% and 12% lower than for Queensland, respectively, due predominantly to the reliance on agricultural incomes;
- Median income levels in Belyando and the region as a whole are 49% and 25% higher, respectively, than for Queensland, due predominantly to higher wage rates in the mining sector;
- The median income level in Mackay is 10% higher, respectively, than for Queensland, due predominantly to higher workforce participation and lower unemployment rates; and
- The median income level in Rockhampton is 7% lower than that for Queensland, due primarily to lower employment levels.

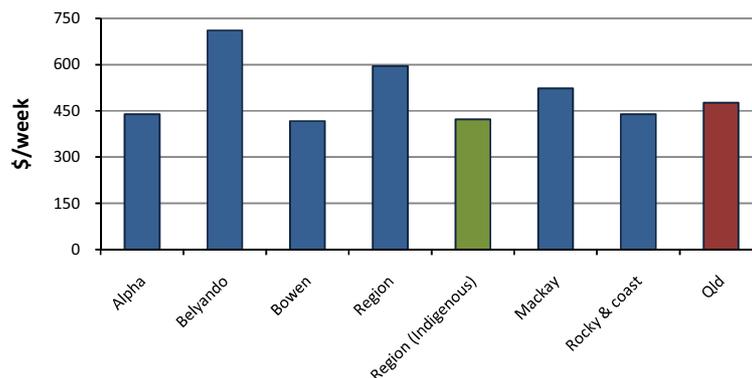


Figure 12: Median Individual Income Levels (males and females > 15 yrs of age)

Source: ABS, 2007.

As shown in Figure 12, the median income for Indigenous people over 15 years of age is \$422/week, which is 29% lower than the median income level for the region, but 33% higher than the median income level for the Indigenous population in Queensland.

The highest wage and salary level of any statistical division in Queensland from 2003/4 to 2006/7 was Broadsound (with the Isaac Regional Council), and was generally followed by Belyando, Peak Downs and Duaringa (the two latter located within the Central Highlands). Nebo (also located within the Isaac Regional Council) made the top five in 2003/4 and 2004/5.⁴¹ The average wage and salary levels for Broadsound, Belyando, Peak Downs, Duaringa and Nebo all exceeded the state average in 2006/7 by 43 to 56 per cent. The extent of the difference between income levels in Belyando, Alpha and Australia as a whole is illustrated in Figure 13.

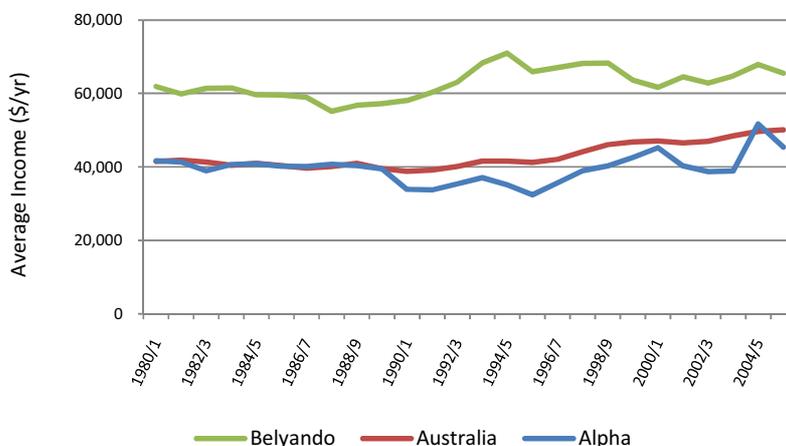


Figure 13: Average Income Comparison (Belyando, Jericho and Australia)

Source: Department of Infrastructure, Transport, Regional Development and Local Government (BITRE Regional Economic Growth Database), 2009.

Despite the above differences, income levels vary considerably, both within the local region and between males and females. As shown in Figure 14, the proportion of males with weekly income exceeding \$1,000 is far higher in the districts in which mining activities are concentrated (Belyando, Broadsound, Nebo, Duaringa, Emerald and Peak Downs). While there is substantial variation in the proportion of males with weekly income levels of \$1,000 or above, there are far fewer females earning \$1,000 or above per week, and far less variation (in the proportion of females earning \$1,000 or more per week) between areas.

⁴¹ ABS, March 2010.

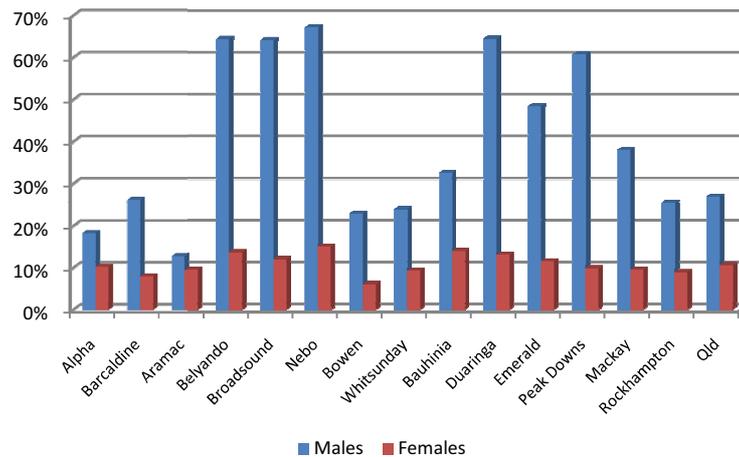


Figure 13: Proportion of Males/Females with Weekly Income Levels of \$1,000 and Above

Source: ABS, 2007.

Based on the above, it can be assumed that while mining activity greatly increases average personal income levels, it leads to greater income inequality within the local area, and also contributes to income inequality between males and females (although, as discussed in Section 7.1, the proportion of women working in the mining sector in Queensland is low, at 14%, but is increasing relatively quickly).

2.6 Housing

In 1996, approximately 40% of Queenslanders lived in their own house; 25% lived in a house they were buying; and 33% lived in rented accommodation. By 2006 only one third of all families owned their own house; one third were buying their own house; and one third rented. While the trend towards lower home ownership is occurring throughout the project area, the level of home ownership varies markedly:

- Home ownership is highest in the agricultural areas, including Aramac (51%), Alpha (47%), Barcaldine (42%) and Bowen (40%);
- Home ownership is lowest in the mining areas, including Nebo (17%), Peak Downs (21%), Duaringa (24%) and Emerald (25%);
- The proportion of families living in rental accommodation is highest in the mining areas, including Nebo (77%), Duaringa (73%), Broadsound (73%) and Peak Downs (65%); and
- The proportion of Indigenous families within the region that are renting is considerably higher (57%) than the non-Indigenous population in the region (41%).

The proportion of households that had moved in the year leading up to the 2006 census was much lower in the agricultural areas (Alpha 17%; Barcaldine 16%; Aramac 16%; Bowen 20%) than the mining areas (Emerald 28%; Nebo 28%; Duaringa 26%). However, Whitsunday also experienced a high level of households changing address in the previous year (26%), which is unlikely to be related to mining activity.

Median house prices for selected towns and cities from 1991 to 2009 are shown in Figure 14. Median prices have generally increased sharply in all centres over the past 5 to 10 years. While median house prices have doubled in Mackay over the past 6 years, the increase has been greater in all other centres shown. Moranbah has had the greatest increase in house prices, but has also experienced greater annual fluctuations.

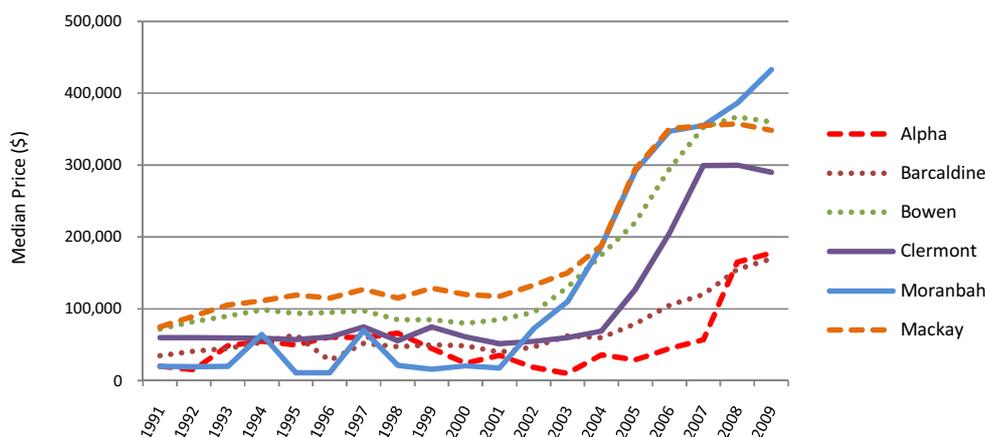


Figure 14: Median House Prices, 1991-2009

Source: www.pricerfinder.com.au

House prices peaked in Mackay and Clermont during the previous mining boom in Central Queensland (2007) and subsequently eased as global economic concerns emerged.

Median house prices for Barcaldine and Alpha remain far lower than those in other centres, around 50% of the value of 2009 house sales. Median prices for Alpha have increased most substantially in the last 2 to 3 years, due reportedly to speculation as a result of mining activities. The average house price in Alpha in mid 2010 is reportedly in the vicinity of \$220,000, continuing the rapid rise in prices since 2007.

House prices in Alpha may however, be lower than in other regions, as Alpha does not have sewerage and part of the town is lying in an area prone to flooding. Residents also indicate that the quality of drinking water in Alpha is not good, and power is unreliable.⁴²

Although not included in Figure 14, the median house price in Emerald in the September quarter of 2009 was around \$375,000, which is higher than other centres with the exception of Moranbah. House prices in Emerald have been relatively stable over the past three years.⁴³

As shown in Figure 15, median housing repayments vary considerably within the region. However, the median repayments are generally far lower in the agricultural areas (and Rockhampton) than the mining areas, which are generally on par with Mackay and Queensland as a whole.

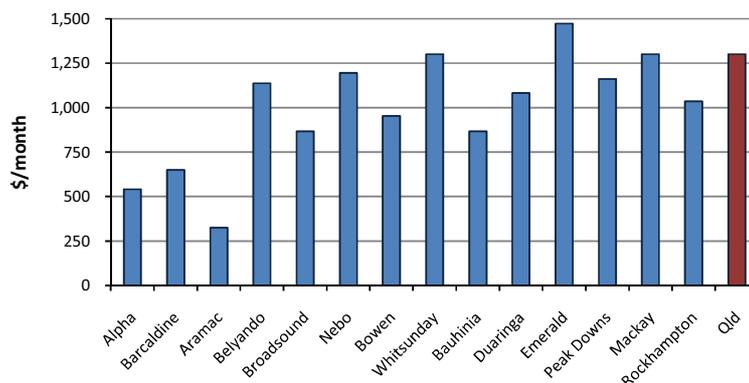


Figure 15: Median House Repayments, 2006

Source: ABS, 2007.

⁴² Cavaye, 2009, p.17.

⁴³ Central Highlands Development Corporation, 2010.

Median rental payments for 2006 are illustrated in Figure 16. Median rental payments were lower than the state average for most areas shown, and in particular, the agricultural areas. The median rent is surprisingly low, however, for some mining areas, including Nebo, Broadsound, Belyando and Peak Downs. Housing may be subsidised by mining companies in these locations.

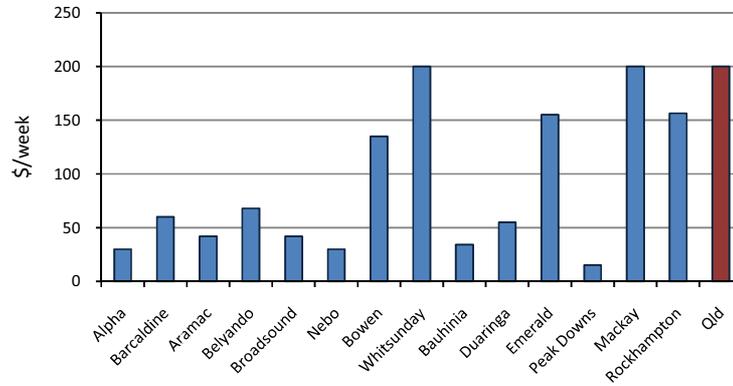


Figure 16: Median Rental Payments, 2006

Source: ABS, 2007.

While median rental repayments are considerably lower in the region, they have generally increased over the 10 year period from 1996 to 2006, particularly in Belyando. Figure 17 indicates a fall in median rental payments in Alpha to \$30/week; however, this is now expected to have changed substantially as a result of more recent speculation in the property market.

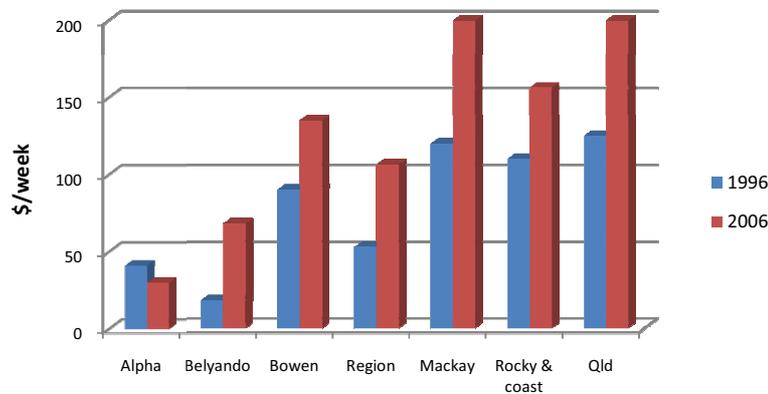


Figure 17: Median Rental Payments (1996 and 2006)

Source: ABS, 2007.

Figure 18 compares the median housing repayment, when expressed as a percentage of the family income, for 1996 and 2006. As shown, housing is far more affordable in Alpha (due primarily to rising income levels), and slightly more affordable in Bowen, Mackay, Rockhampton and Queensland as a whole. At the same time, the proportion of income allocated to housing repayments has increased in Belyando and the region as a whole, although housing affordability remains favourable in comparison to Queensland.

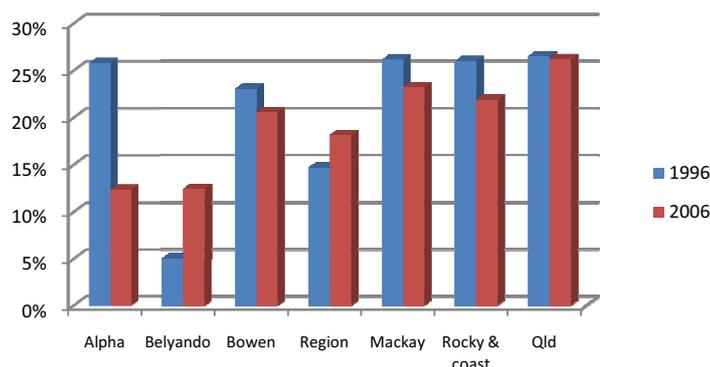


Figure 18: Median House Repayments as a Percentage of Family Income (1996 and 2006)

Source: ABS, 2007.

Bowen has experienced a substantial increase in the number of residential blocks available for development in the past few years. It has also experienced a rapid increase in rental costs, with a typical 3 bedroom house now renting for \$450/week. Mackay has also experienced a substantial increase in residential developments in the past couple of years. However, in both Bowen and Mackay, the lack of capital to finance residential developments was a limiting factor, particularly during the global economic downturn. Rents in Emerald have also surged in recent years, and are now around \$500/week for a 3 bedroom house.

Looking more closely at the type and availability of accommodation, based on 2006 census data, in the towns of Alpha, Clermont, Bowen and Emerald:

- Alpha had 144 living quarters, of which 92% were houses and 38% were being rented;
- Clermont has 922 living quarters, of which 92% were houses and 39% were being rented;
- Bowen had 3,469 living quarters, of which 71% were houses and 22% were townhouses or apartments, and 36% were being rented; and
- Emerald had 3,662 living quarters, of which 82% were houses and 15% were townhouses or apartments, and 42% were being rented.

There are relatively few townhouses or apartments in either Alpha or Clermont. All four towns (Alpha, Clermont, Bowen and Emerald) have a relatively high proportion of accommodation that is rented. However, a relatively high proportion of people reside in caravans, cabins or improvised shelters in Bowen (6%), Clermont (4%) and Emerald (3%) when compared to Queensland as a whole (1.4%). It is expected that a higher proportion of people will also live in caravans, cabins or improvised shelters in Alpha in the lead up to mine development.

Residential land in Alpha is currently being developed (approximately 30 blocks). While this is a significant increase to the housing market in Alpha, it will not meet future demand. The Whitsunday Regional Council has released a large number of residential blocks in the Bowen area over the past decade. These blocks, along with apartments along the waterfront, are more suited to the upper end of the market, and there is a possible shortage of more affordable accommodation options in Bowen. The Central Highlands Regional Council continues to release land for residential purposes in Emerald (1,000 blocks have recently been released), and is actively promoting a range of accommodation types to cater for both high and low income levels.

Details on social housing are presented in Section 2.10.

2.7 Health

The Chief Health Officer for Queensland has stated that the health of the people of Queensland is very good overall and continues to improve. However, the Chief Health Officer also stated that there is room for

improvement; some conditions and health risk factors are increasing; and the inequalities in health and the poor health of Aboriginal and Torres Strait Islander peoples require attention.⁴⁴

Over the next 15 years, the number of hospitalisations in Queensland is projected to double as a result of changes in the population (growth and ageing) and the increasing burden of (potentially avoidable) chronic disease:

- Type 2 diabetes is projected to become the largest cause of disease burden in 2023, principally due to substantial increases in the prevalence of overweight and obesity;
- Coronary heart disease is projected to remain a major cause of disease burden in Queensland despite continuing declines in mortality rates, as the effect of an ageing population becomes evident; and
- Ageing will increase the disability burden due to dementia, adult onset hearing loss and osteoarthritis, with each projected to double over the next 20 years.

Within the Queensland population there are substantial differences in health status and life expectancy. The health status of people in Queensland's urban areas exceeds, on average, the health status of those people residing in rural areas, and in particular, those people residing in remote areas and disadvantaged areas. However, it is not the location *per se* that determines health status but the lifestyle choices typical of those areas. For example, the main risk factors are:

- An unhealthy diet;
- Smoking;
- Being overweight;
- Inadequate physical exercise; and
- Misuse of alcohol.⁴⁵

The greatest burden of death and ill health is borne by the most disadvantaged populations, particularly Aboriginal and Torres Strait Islander peoples from both urban and rural/remote parts of Queensland. About one fifth of the total death and disability burden is due to socioeconomic inequality. Socio-demographic differences are seen in death rates from cancer and specifically lung cancer, coronary heart disease, diabetes, chronic obstructive pulmonary disease and asthma, and transport injury. People in areas of socio-economic disadvantage have about 50% higher rates of avoidable deaths and hospitalisations. Disadvantage takes many forms [and may include] fewer assets, having a poorer education during adolescence, having insecure employment, living in poor housing, trying to bring up a family in difficult circumstances, or living on an inadequate income.⁴⁶

The project area is not necessarily remote, although health services are limited in comparison to urban areas, but there is nevertheless a considerable distance to the main referral hospitals (Mackay, Rockhampton, Townsville and Brisbane). Within the local area, hospitals are located at Alpha, Bowen and Moranbah, while Clermont has a 'multi-purpose health centre'. Surveys undertaken by Queensland Health indicate little difference in self assessment results for Queensland with either the Central West or Central Queensland regions.⁴⁷ Information is not available for smaller geographic areas. Selected results are summarised in Table 7. Although there are not great differences between the survey results for Central West, Central Queensland and Queensland as a whole, many people do not eat sufficient fruit or vegetables; many people lack exercise; many people are overweight or obese; smoking is still relatively common; and high blood pressure, cholesterol and diabetes are significant health problems.

There is no evidence to suggest that the main forms of sickness and causes of death in the project area are any different to that for Queensland as a whole. While the development and operation of coal mines brings a range of work related risks, the Australian Coal Industry has very high occupational health and safety standards. Although mining substantially increases the local population, and this will inevitably result in an increase in the number of accidents and injuries, it is also likely that the high occupational health and safety

⁴⁴ Queensland Health, December 2006.

⁴⁵ Queensland Health, November 2008.

⁴⁶ Queensland Health, December 2006.

⁴⁷ Central West includes the Barcaldine, Barcoo, Blackall-Tambo, Boulia, Diamantina, Longreach and Winton council areas, while Central Queensland includes the Rockhampton, Gladstone, Banana and Central Highlands Regional Councils.

standards will not just apply to direct mine employees, but be adopted by contractors (for mine and non-mining work) and over time, adopted more broadly in the local community. Improved safety in the workplace and home can be attributed, in part, to high standards imposed in the mining industry.

Table 7: Key Health Indicators for Central West and Central Queensland Regions

Indicator (self-reported)	Central West	Central Qld	Queensland
Satisfied with health (%)	79	82	79
Mean daily fruit intake (serves/day)	1.6	1.8	1.9
Mean daily vegetable intake (serves/day)	2.4	2.7	2.5
Overweight or obese (%)	66	61	55
Smoke daily (%)	19	23	16
Psychological distress (high or very high) %	11	9	12
Insufficient activity for health benefit (%)	29	33	33
High blood pressure (%)	31	30	29
High cholesterol (%)	27	25	29
Prevalence of diabetes and high blood sugar (%)	9	8	8

Source: Queensland Health, 2009a,b.

There has, however, been considerable debate over the impacts of coal dust on the quality of drinking water and health levels. Although limited data are available, coal mines located adjacent to urban areas are more likely to impact on health levels than mines located a distance from the nearest urban centres, providing mine water is effectively managed. The lack of exercise by mine workers, and particularly those on extended shifts (eg. 12 hours) on a FIFO or DIDO basis, is well publicised. Activities aiming to boost the amount of exercise undertaken by mine workers in Moranbah have been initiated since 2005 and cite a range of benefits including reduced stress, fewer workplace accidents, fewer absentees, improved morale and reduced health costs.⁴⁸ Other health impacts, including the impact on FIFO workforces and issues relating to domestic violence, are discussed further in Section 4.5.

Disability prevalence

ABS data indicate that around 20% of Australians have a disability and 6% have a profound or severe disability.⁴⁹ Disability prevalence is slightly higher in Queensland (22%), and increases with age (17% prevalence in the 0 to 54 year age group; 58% for those aged 55 years and above). Unemployment rates are typically higher for those people with a disability (9%) and workforce participation rates lower (54%).

Around 14% of Queenslanders provided care to someone with a disability in 2003 and 3% provided primary care (ie. people who provided the majority of the informal help needed by a person with a disability). Survey results also indicate that workforce participation among primary carers is low (38%) and the median income level, at \$245/week, is little more than half that for Queensland as a whole. Although limited information is available on the prevalence of disabilities on a regional basis, a lower proportion of people indicated that they provided assistance to a person with a disability in the Alpha (7.3%) and Belyando (6.6%) areas during the 2006 census, than in Bowen (10.4%) or Queensland as a whole (10.6%).

2.8 Education

The Alpha, Belyando and Bowen areas contain 12 primary schools and 4 high schools. Other than for Bowen and Moranbah the schools are generally small, most having less than 200 students. The Alpha State School is the main school in the Alpha area, but only provides education up to Year 10. Senior high school students must either travel to Barcaldine (143 km each way) or enrol in schools with boarding facilities (eg. Clermont High).

Bowen offers education facilities to tertiary level. There are three State primary schools, one Catholic primary school, a State secondary school and a TAFE College operating in Bowen and nearby Merinda.

⁴⁸ Short, 2007.

⁴⁹ ABS, 2003. Disability is defined by ABS as any limitation, restriction or impairment, which has lasted, or is likely to last, for at least six months and restricts everyday activities.

The Australian Curriculum, Assessment and Reporting Authority has developed a website which records information for each school in Australia, including annual assessments for various school years for five skill areas: reading, writing, spelling, grammar and punctuation, and numeracy. Results have been tabulated for 8 primary and 4 high schools within the districts of Jericho, Belyando and Bowen for 2009.⁵⁰ While there is some variation between schools:

- Year 5 assessment results are on average 3% below the Australian average; and
- Year 9 assessment results are on average 4% below the Australian average.

The comparison between the local schools and all schools in Australia is illustrated in Figure 19.

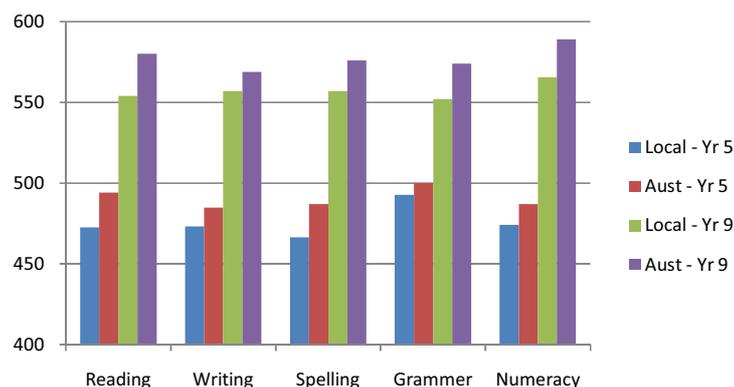


Figure 19: Average Results for Schools in the Alpha, Belyando and Bowen Areas Vs Australia, 2009

Source: My School website (www.myschool.edu.au/)

A report commissioned by the Queensland Department of Education concluded that Queensland students living in metropolitan and provincial centres significantly outperform students living in remote (and especially very remote) parts of the state.^{51,52} This appears to be supported by the data available on the 'My School' website.

Census data also show that fewer males and females living in the Alpha and Bowen areas, and the four regions combined, have completed Grade 12 than in Queensland as a whole. As shown in Table 8, results for Mackay and Rockhampton are similar to that of the region, while a relatively high proportion of women, in particular, have completed Grade 12 from Belyando. This may be a result of Belyando having a relatively younger population (a median age of 30).

Table 8: Formal Education Qualifications

Administrative Unit	Males > 15 yrs age (%)			Females > 15 yrs age (%)		
	Completed Grade 12	Bachelors degree	Post graduate qualification	Completed Grade 12	Bachelors degree	Post graduate qualification
Alpha	21	2	1	36	8	0
Belyando	39	6	1	47	11	1
Bowen	26	3	0	31	5	0
Mackay	36	5	1	39	9	1
Rockhampton	37	6	2	39	9	1
Regional Councils (4)	35	5	1	42	9	1
Queensland	45	9	2	46	11	2

Source: ABS, 2007.

⁵⁰ Year 5 data were not available for an additional 4 schools from within the area.

⁵¹ Masters, April 2009.

⁵² The 'My School' website classifies Clermont and Collinsville as remote, and Alpha as very remote.

The proportion of Indigenous males and females in the region who are over 15 years of age and completed Grade 12 is marginally lower than the total regional population:

- 28% of Indigenous males have completed Grade 12 (compared to 35%); and
- 33% of Indigenous females have completed Grade 12 (compared to 42%).

Tertiary education

The Central Queensland University is based in Rockhampton but has a number of other campuses, including at Emerald and Mackay. The University offers a range of graduate courses in engineering, geosciences, mine technology and mine operations management. Some courses are linked to nationally-recognised black coal competency standards to ensure appropriate qualifications for employment in Queensland's coal mining industry.

James Cook University, based in Townsville, is around 200 km north of Bowen. The University offers graduate courses in engineering, geology and environmental science and has a campus in Mackay.

Despite the relative proximity of the two universities, census data indicate that relatively few people in Alpha and Bowen have graduate or post-graduate qualifications in comparison to Queensland as a whole. However, the proportion of people with graduate and post-graduate qualifications in Belyando is higher than Alpha or Bowen or the average for the four regional councils.

Adult education

TAFE has campuses located at Barcaldine, Bowen, Emerald, Clermont, Mackay, Moranbah and Rockhampton. The closest centre to Alpha that offers trades that could be used in the mining industry is at Emerald. However, it does not have on-site accommodation and finding accommodation in Emerald can be both difficult and expensive. Further discussions will be held with TAFE institutes, in particular the institute in Emerald, to ascertain their scope for expanding trade training.

2.9 Law and Order

Almost 450,000 criminal offences were recorded in Queensland in 2002/3. An index of criminal offences in the project area is illustrated in Figure 20. Although the data is relatively dated (2002/3) and the incidence of crime is grouped into broad categories and expressed on a scale of relativity, it indicates that:

- The Alpha area has the lowest incidence of the major groups of crime (person, property and other);
- The incidence of crimes against the person (eg. assault, sexual offences, armed robbery and homicide) are higher in Belyando than other project areas or Queensland as a whole;
- The incidence of crimes against property (eg. motor vehicle theft, unlawful entry, property damage and stealing) is lower in the project area than Queensland as a whole, and within the project area, lowest in the rural areas; and
- The incidence of other crime (eg. drug and alcohol offences) is higher in Bowen and Mackay than other project areas or Queensland as a whole.

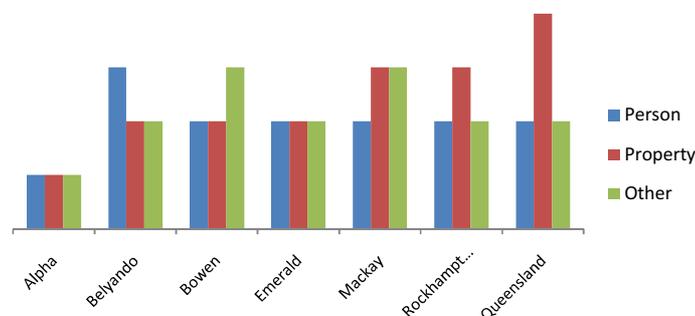


Figure 20: Incidence of Criminal Activities in the Project Area Vs Queensland, 2002/3

Source: Office of Economic and Statistical Research (www.oesr.qld.gov.au/)

Not only does Alpha have relatively low levels of criminal activity, but is in the lowest quartile for each crime category in Queensland.

Research on the incidence of domestic violence (and other non-physical forms of partner abuse) in the Bowen Basin is discussed in Section 4.5, and while indicating that the incidence of physical abuse is marginally higher in the Bowen Basin than nationally, mining cultures had little or no demonstrable association with women's experience of most forms of abuse.

2.10 Social Infrastructure

The level of social infrastructure within the project area varies substantially:

- As major regional centres, Mackay and Rockhampton contain a wide range of community facilities and services;
- Larger centres such as Emerald, Moranbah and Bowen have a range of service providers that are relatively easy to access, and while often struggling to fund their desired activities, provide family support, emergency relief, housing and material support; and
- Alpha and Jericho have relatively few community facilities or formal support services, although local volunteers provide a range of support.

As an example, the Salvation Army has community service centres in Bowen, Emerald, Moranbah, Mackay, Rockhampton and Yeppoon. These centres provide some assistance for low-income families and individuals who are struggling to make ends meet. However, the services concentrate on the larger population centres. At the same time, many social services in Australia are available by phone and therefore provide access from any location. While phone services will never replace the need for one-on-one advice or support, or emergency shelter, they provide a wide range of specialised services targeting different groups (eg. men, women, pregnant women, children, seniors, etc) or issues (eg. depression, domestic violence, gambling, alcohol addiction, legal aid, accommodation, etc).

Many welfare agencies are based in the larger urban centres, such as Emerald, and provide services over large geographic areas. Typically, these agencies are under-staffed and under-resourced and struggle to meet the demand for welfare services. The demand for welfare services is reportedly increasing due to population growth, the high cost of living (including high accommodation costs) and changes such as increased divorce rates, fathers working from home, etc.

Following is a closer examination of infrastructure and services in Alpha, followed by a review of social housing in the project area.

Alpha

Alpha has limited infrastructure and few services. The power supply is unreliable and bore water supply limited. The town does not have sewerage and part of the town is located in an area that is prone to flooding. The hospital is old and offers limited services, while the school provides an education up to Grade 10. The community has access to an ambulance that is staffed by hospital staff and a volunteer driver. Alpha has a park, library, skate park and swimming pool. Sporting facilities are, however, limited.

Home and Community Care (HACC) provides an important in-home health and aged care service. Aged care services are relatively good with services allowing the elderly to remain in their own town with their family. There is a multipurpose aged care centre at the hospital but limited to four places. HACC provides in-home care, outings, mobility equipment, etc. Home assist services are available from Barcaldine. However, there are several challenges: not having a doctor limits the health care that can be provided locally and aged people need to travel to larger centres for medical care.

Community services, provided by the Department of Communities, include Rural Family Support, Home Assist Secure and the 60 and Better Program, but are all based in Barcaldine. Volunteers run Alpha's meals on wheels program, and the Grey Nomad Volunteers Project provides inputs from predominantly retired but skilled tourists visiting the area to local community projects and services.

Emergency services are greatly limited in Alpha, and the response time from Emerald, Barcaldine or Clermont will generally exceed two hours.

Social housing

The quantity of social houses in the project area is shown in Figure 21.

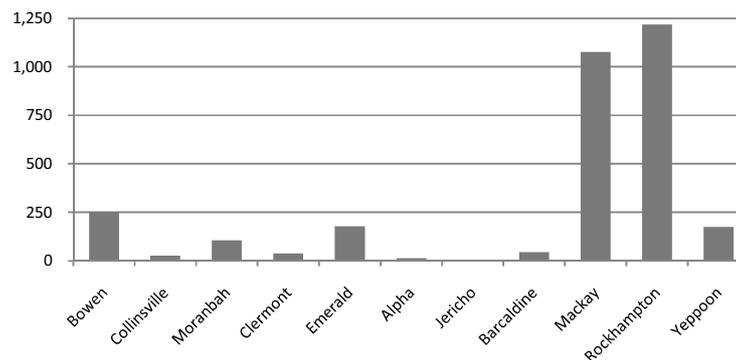


Figure 21: Quantity of Social Houses in the Project Area, 2008

Source: Department of Communities (www.public-housing.qld.gov.au/programs/ch/publications/regional.htm)

Reports by the Department of Communities on the availability of social housing indicate several common trends in much of Central Queensland:

- Private rental vacancy rates in 2008 were relatively low (Mackay 1.7%, Isaac 1.8%, Whitsunday 3.9%, Central Highlands 4.1%, Rockhampton 3.1%);
- Rental costs in the Mackay-Whitsunday region and in the Bowen Basin have increased substantially in the five years to 2008;
- The proportion of rental properties that are affordable for low income households has reduced markedly from 2003 to 2008 (falling from 68% to 18% in the Mackay-Whitsunday region, 88% to 46% in Rockhampton and 81% to 30% across the Bowen Basin);
- A high proportion of Centrelink clients who rent privately paid over 30% of their incomes in rent and were therefore deemed to be in housing stress (62% in the Mackay-Whitsunday region, 51% in Rockhampton and 70% across the Bowen Basin), which is significantly higher than Queensland as a whole (38%);
- The incidence of homelessness is higher in the Mackay-Whitsunday region (62/10,000), Rockhampton (51/10,000) and the Bowen Basin (70/10,000) than Queensland (38/10,000); and
- The quantity of social housing in the Mackay-Whitsunday region (451 dwellings per 10,000 occupied dwellings), Rockhampton (490/10,000) and Bowen Basin (344/10,000) is similar to that for Queensland as a whole (422/10,000).

Given the forecast for continued strong growth, particularly in Mackay and throughout the Bowen Basin, the demand for social housing is expected to grow as the population increases and rental costs rise.

2.11 Welfare Indices

The ABS has developed several socio-economic indices to compare various welfare measures between different geographic areas.⁵³ These are described below, and results presented for the project area.

The Index of Relative Socio-economic Disadvantage is derived from Census variables related to disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles. The index is designed to focus on disadvantage only. A low score on this index indicates a high proportion of relatively disadvantaged people in an area. Results of the Index of Socio-economic Disadvantage are presented in Figure 22, which indicates that the relatively remote agricultural areas of Alpha, Barcaldine, Aramac and Bowen, along with Rockhampton, have the highest proportion of relatively disadvantaged people, while Mackay and mining areas (Belyando, Emerald and Peak Downs) have a lower proportion of disadvantaged people.

⁵³ ABS, 2006.

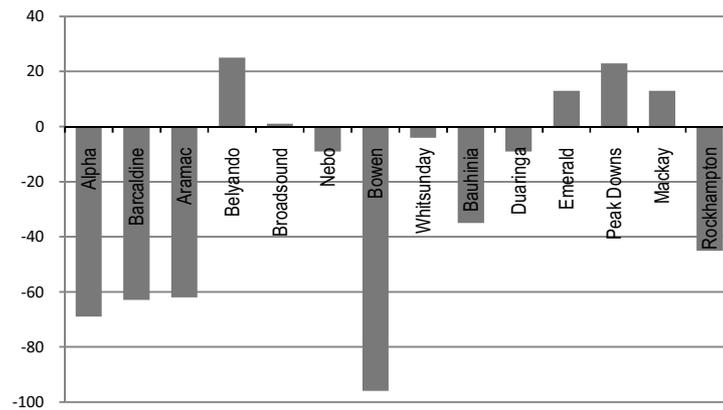


Figure 22: Index of Relative Socio-economic Advantage and Disadvantage, 2006

Source: ABS, 2008.

Although census results indicate that mining towns have relatively fewer disadvantaged people, welfare agencies indicate that the demand for their services can in fact be quite high. This apparent contradiction may be attributed to a number of factors, including the limitations of the census data, for example, the lack of indicators relating to intra-household relationships and individual conditions; the proximity of family and friends; and stress resulting from absenteeism.

The Index of Economic Resources focuses on Census variables like the income, housing expenditure and assets of households. Areas with higher scores have relatively greater access to economic resources than areas with lower scores. Figure 23 summarises the results of the Index of Economic Resources, and indicates that the most economically disadvantaged areas are Barcaldine, Bowen and Rockhampton, while the least disadvantaged are the mining areas, Mackay and Whitsunday.

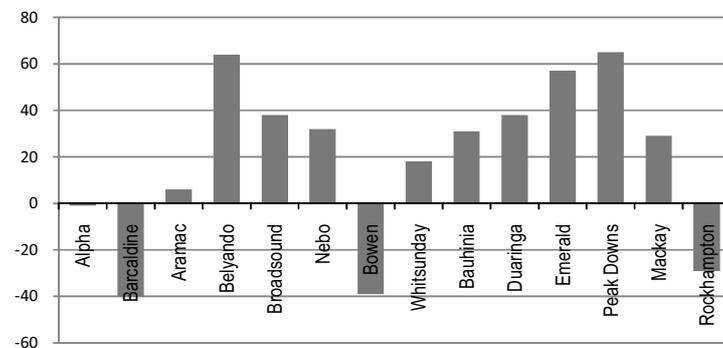


Figure 23: Index of Economic Resources, 2006

Source: ABS, 2008.

The Index of Education and Occupation includes census variables relating to the educational and occupational characteristics of communities, like the proportion of people with a higher qualification or those employed in a skilled occupation. A low score indicates that an area has a high proportion of people without qualifications, without jobs, and/or with low skilled jobs. A high score indicates many people with high qualifications and/or highly skilled jobs. Figure 24 summarises the results of the Index of Education and Occupation, and indicates that all communities in the project area, including Mackay and Rockhampton, are disadvantaged in terms of their skill levels (both formal qualifications and the skills required to perform different occupations).

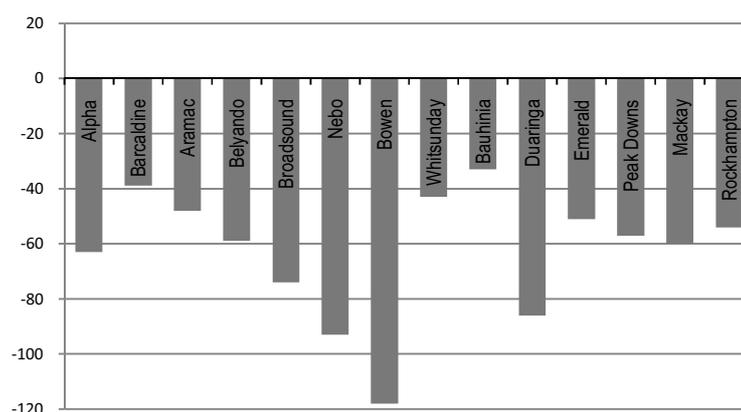


Figure 24: Index of Education and Occupation, 2006

Source: ABS, 2008.

The apparent contradiction in the results presented in Figure 24, given the high income levels in the mining areas, occurs as a result of many jobs in the mining industry being categorised as having low skill levels.

3. WORKFORCE

3.1 Workforce Profile

The construction period will extend for a three year period and require the following workforce:

- 2,500 employees for construction of the mine (over a three year period);
- 1,000 employees for construction of the rail infrastructure (over a three year period); and
- 2,500 employees for construction of the port facilities (over an 18 month period).

The construction workforce is equivalent to 4,750 full time positions for three years. Direct employment during operations has been estimated as follows:

- 1,500 employees for operation of the mine;
- 60 employees for operation of the rail infrastructure; and
- 150 employees for operation of the port facilities.

The majority of the mine employees will operate on a FIFO basis. The majority of the rail and port employees will reside in or near Bowen. In addition to the above direct employees, a range of goods and services will be procured locally, providing contracting opportunities for local businesses and generating additional employment.

Low coal prices in the 1990s led to a number of changes aimed at increasing mine efficiency:

- Increased use of contractors rather than employees;
- A shift towards FIFO workforces rather than permanently resident workforces; and
- More flexible industrial relations agreements which enabled a move to 12 hour shifts.⁵⁴

The move towards FIFO (and DIDO) has been accompanied by some controversy, largely focusing on the reduced economic benefits that mining provides to local communities. However, a FIFO workforce is now the norm for new mines, and particularly mines located in remote areas. Importantly, there is evidence that most employees also favour FIFO or DIDO arrangements: research conducted in 2008 indicated that 89% of mine workers surveyed in Moranbah and 88% of mine workers surveyed in Nebo supported FIFO or DIDO.⁵⁵

There are several reasons why the majority of mine workers prefer FIFO or DIDO arrangements. FIFO or DIDO offers the opportunity to:

⁵⁴ Lockie, Franetovich, Sharma and Rolfe, September 2008, p.181.

⁵⁵ Petkova, Lockie, Rolfe and Ivanova, 2009.

- Live in larger, urban areas, which provide access to better health, education and other services;
- Live in coastal locations with a more favourable climate and/or more attractive physical environment;
- Invest and live in a house where they can see a long-term future, rather than invest in housing in a mining community where they may be located for no more than 5 or 10 years;
- Change jobs without the need to sell a house and relocate; and
- Provide stability for their children and maintain relationships with friends and neighbours while potentially working at a number of different mine sites.

The range of skills required during construction and operation of the China First Coal Project is summarised in Table 9.

Table 9: Workforce Skills

Key Occupations During Construction	Key Occupations During Operation
Construction managers	Distribution and production managers
Engineering professionals	Engineering professionals
Building and engineering technicians	Natural and physical science professionals
Fabrication engineering trade workers	Building and engineering technicians
Bricklayers, carpenters and joiners	Fabrication engineering trades workers
Floor finishers and painting trades workers	Mechanical engineering trades workers
Glaziers, plasterers and tilers	Electricians
Plumbers	Contract, program and project administrators
Electricians	Logistics clerks
Electronics and telecommunications workers	Machine operators
Wood trades workers	Stationary plant operators
Accounting clerks and bookkeepers	Mobile plant operators
Machine operators	Rail operators
Mobile plant operators	Truck drivers
Construction and mining labourers	Construction and mining labourers

Source: Economic Impact Assessment, Waratah Coal.

The construction timeframe for the project will coincide with a period of unprecedented resource development in Queensland. Much of this development will focus on coal and CSG and be located in Central Queensland. It will lead to a substantial increase in exports from Bowen (Abbot Point), Mackay and Gladstone. Given the existing skills shortage in the mining industry and relatively low unemployment levels, particularly in Central Queensland, the development of a number of large-scale resource projects within a similar timeframe will require substantial in-migration of qualified workers.

In March 2010 the Natural Resources Sector Employment Taskforce predicted that advanced resource projects would require an additional 100,000 construction workers between 2010 and 2015 in Australia, and 30,000 permanent staff. Skills shortages were predicted to be highest in Western Australia and Queensland, particularly for:

- Electricians/electrical engineers;
- Drillers;
- Infrastructure engineers;
- Statutory officials, including mine managers and deputies;
- Geologists; and
- Welders.⁵⁶

Industry analysts have suggested that there may not be sufficient skilled workers to allow construction of all planned projects to proceed. This has already led to greater use of pre-fabricated materials and will

⁵⁶ Australian Government, March 2010 (pp.16-20).

continue to drive automation in the industry. However, it will also be important for resource companies to maximise potential employment from the region, and thereafter to retain employees. As suggested by the Natural Resources Sector Employment Taskforce, resource projects will need to:

- Encourage local participation;
- Improve the retention of existing employees;
- Entice skilled and unskilled people to move from other locations, including areas of high unemployment; and
- Bring skilled people in from overseas.

In addition to the above, it will be important to increase the employment of women in the workforce.

3.2 Recruitment Schedules and Policies

Due to the limited duration, the construction workforce will be engaged primarily on a FIFO basis. While the operational workforce for the mine will also, primarily, be engaged on a FIFO basis, the operational workforce for the rail and port will be expected to reside in or near Bowen.

A study conducted to explore staff turnover at mining operations found that annual turnover at seven FIFO sites ranged from 10% to 28% compared to 8% and 27% at two town-based sites.⁵⁷ The study found that turnover rates tended to be highest amongst professional and managerial staff, and in the mining operations area, and employee turnover rates were influenced by a number of factors, including:

- The FIFO roster structure - shorter rosters, such as 9-days on/5-days off (9/5) and 8/6 were generally associated with lower employee turnover rates, although one site demonstrated that the 14/7 could be managed with employee turnover of only 12%;
- The level of management commitment to employee training and skills development;
- The extent to which management had been successful in creating and maintaining a positive workplace culture; and
- The extent to which management perceived the present rate of employee turnover as inevitable.

The results of other research on FIFO employment is presented in Section 4.5.

While the operational workforce is expected to be engaged on a 7 days on 7 days off roster, much of the construction workforce will be contracted and likely to work a longer rotation (eg. 21 days on 7 days off). Although MCC will manage project construction, large construction contractors will be sub-contracted to build port facilities, sections of railway, workforce accommodation, etc. These contractors are expected to be large Australian based companies that will themselves govern the conditions of employment of their staff and sub-contractors, and actual work rotations will be governed by the nature of the work and overall construction schedule.

The operational workforce based at the mine site will work a 12 hour shift on a 7 days on 7 days off roster, and receive 4 weeks annual leave. It is expected that most staff will be recruited from the greater Brisbane area, with an increasing proportion of staff residing in Mackay and Rockhampton over time. However, skills shortages are expected (eg. welders), and may require recruitment from further afield, including overseas. Overseas workers are, however, expected to be engaged on short-term contracts and be required more during project construction than operations.

The workforce for the China First Coal Project is therefore expected to be sourced from both within Australia and overseas, but preference will be given to capable workers from within the local region, then the remainder of Queensland, other parts of Australia and finally overseas. Waratah Coal has also stated that while the majority of the workforce will be engaged on a FIFO basis, this will not exclude local employees, and where practical, transport arrangements will be tailored to facilitate local employment. This is discussed further in Section 8.

Indicative salary levels for the operational workforce are illustrated in Figure 25.

⁵⁷ Beach, Brereton and Cliff, 2003.

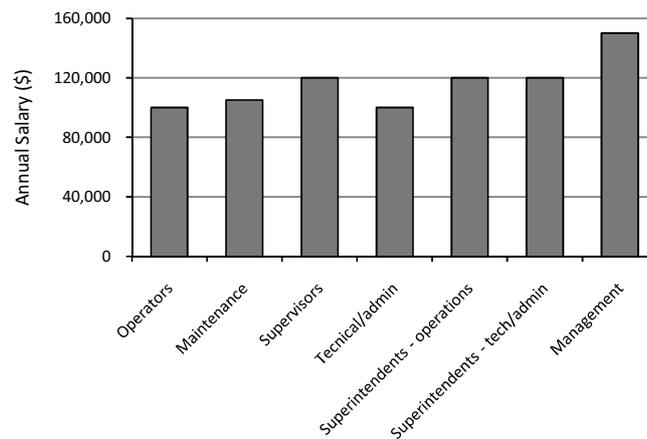


Figure 25: Indicative Salary Levels

Source: Hays 2009 Salary Survey (Mining and Resources)⁵⁸

Results from the 2006 National Census indicate that average income levels in Queensland are highest for those people working in the mining industry (\$1,722/week), which is almost twice the average income level across all industries in Queensland (\$877/week).⁵⁹

3.3 Workforce Accommodation

The construction workforce will be accommodated in:

- A purpose built camp on the MLA, which will subsequently be used during operations;
- An existing camp at Merinda (mid way between Bowen and Abbot Point); and
- Three temporary camps located along the proposed railway alignment, one near Collinsville, one near Mt Coolon and one mid way between Mt Coolon and the mine site.

The temporary construction camps will be located at 60 km intervals along the proposed railway route and are expected to accommodate around 150 contractors each. The camps are expected to consist of air conditioned rooms with individual toilet/shower facilities, TV and internet; dining and kitchen facilities; offices; recreational facilities including smoke-free and alcohol-free areas and gyms; medical facilities; laundries; waste collection facilities and parking areas. A more detailed assessment of camp locations, designs and operational procedures will be undertaken prior to construction.

Each FIFO worker at the mine site will have their own room,⁶⁰ so they can leave work clothes and personal items on site, and have a sense of permanency that is not provided when sharing rooms or being allocated different rooms during each rostered on period. The design of the quarters and associated facilities (mess, gym, entertainment facilities) are expected to give due consideration to gender requirements and facilitate employment of a culturally diverse workforce.

4. SOCIAL IMPACT OF EXISTING MINING OPERATIONS

The extent of social analysis of mining operations has increased rapidly over the past decade as many companies within the mining industry have responded to negative public perceptions and attempted to increase the level of awareness of the social and environmental impacts of mining; mitigate negative social and/or environmental impacts; and make positive contributions to local communities. Much of the existing literature focuses on the impact of mining on Indigenous communities in particularly remote areas, and is of limited relevance to mining projects in the Galilee Basin. However, studies have been conducted in the Hunter Valley and Bowen Basin, both of which are coal mining areas, and importantly, are areas that

⁵⁸ Refer <http://www.hays.com.au/salary/resourcesmining.aspx>

⁵⁹ ABS, 2006.

⁶⁰ Statement made by Phil McNamara, previous CEO of Waratah Coal, during the initial public consultations in Jericho and Alpha (8 June 2010).

contain a number of coal mines in relatively close proximity to one another. In addition, there is public information available on the social impact of both existing and planned mining operations in the vicinity of Moranbah and Clermont, which complements the above studies. These studies are therefore of relevance to the China First Coal Project, which is potentially one of several large coal projects that will be developed in the vicinity of Alpha in years to come. However, Alpha is located in a more remote area than the Hunter Valley or Bowen Basin, and Alpha is a town of just 350 people. It is important to recognise these differences when reviewing experience from the Hunter and Bowen Basin.

4.1 Hunter Valley

A study was conducted to assess the cumulative social, environmental and economic impacts of coal mining at Muswellbrook, in the Upper Hunter Valley.⁶¹ The results of community consultations are summarised in the following table.

Table 10: Cumulative Impacts Most Frequently Cited as Important by Stakeholders

Positive Impacts	Negative Impacts
Increasing employment – wealth, better lifestyle	Decreasing visual amenity
Increasing community benefits from mine expenditure	Adverse social changes (loss of community identity, weakened social networks, growing gap between 'haves' and 'have nots', etc)
Expanding mine-related businesses	Increasing noise and vibration due to blasting
Increasing knowledge of safety	Decreasing air quality/dust

Source: Brereton, Moran, McIlwain, McIntosh and Parkinson, February 2008, p.26.

Other key findings of the study are summarised below:

- Economic impacts - mining is clearly a very important part of the Muswellbrook economy:
 - Coal mining employs between 13 and 16% of the total Shire workforce (direct employment);
 - Coal mining also generates employment with suppliers and contractors (indirect employment) and in other sectors (such as retail and services) that benefit from the presence of the industry (induced employment);
 - A council survey indicated that 27% of businesses relied primarily on providing support services for the mining or power industries;
 - Mines pay more than \$1 million a year in rates (19% of total rates);
 - Various mines have also made substantial one-off infrastructure payments to the Council [including contributions to community projects] and monetary and in-kind support to a broad range of community groups, programs and activities.
- Visual amenity - quantitative analysis of areas disturbed by mining shows that over the last decade mining has become visible from more locations in the town.
- Water quality - mines in the Muswellbrook area have undertaken considerable effort with on-site water management to minimise their impact on the Hunter River.
- Social changes:
 - Population fluctuations appear to be linked to the level of employment being generated by the mining industry;
 - While Muswellbrook has benefitted from the recent general upsurge in economic activity, it has not performed as well over time as some other communities in the region;
 - While it is probable that some individuals who were re-located had their social networks and sense of place disrupted, the numbers involved would have been too small for this to have had a significant impact on social cohesion in the broader Muswellbrook community;

⁶¹ Brereton, Moran, McIlwain, McIntosh and Parkinson, February 2008.

- The mines were criticised for introducing rosters that made it more difficult for people to participate in organised community activities. However, while these changes may have made it challenging for some sections of the mining workforce to be involved in organised community activities, there is no evidence that this has adversely impacted on the broader community; and
- There are existing examples of local mines jointly sponsoring major community events.

The study concluded that further investigation is required to ascertain whether the rapid expansion of mining activity around Muswellbrook has adversely impacted on people's sense of place or community identity.

4.2 Bowen Basin

A research paper was prepared to examine the impacts of the coal mining boom in the Bowen Basin between 2004 and 2007.⁶² The authors noted that much of the economic advantage of the mining boom was actually transferred to regional centres and the state, due to factors such as:

- Increasing emphasis on the use of contractors; and
- Increased FIFO operations.

While noting that mine employees had more choice about where they and their families were located, the authors also highlighted that the mining boom had some negative impacts at a local level as a result of increased competition for employees and resources, and housing in particular. A more detailed study was subsequently undertaken by several of the authors to assess the social impacts of mining in six communities within the Bowen Basin (Blackwater, Moranbah, Nebo, Springsure, Rolleston and Coppabella).⁶³ Some of the main positive impacts of mining included:

- The relatively high incomes of people working in the mining industry and of business people servicing the mines;
- Population growth and diversification in communities;
- Increased financial support in towns;
- Developers, land and house owners benefiting from substantial increases in values;
- Education of the communities (e.g. popular open days at mine sites);
- Improved service levels in town (e.g. a mining company bringing out a physiotherapist);
- Improvements in infrastructure such as roads and communications;
- Mining companies and contractors lending out equipment to councils and communities;
- Town development through the building or renovation of houses by the mining companies or their employees; and
- Various landholders benefiting by having been able to access water from pipelines established by mining companies.

Overall, most stakeholders were positive about mining. However, some negative impacts were identified, and have been included in the study's main conclusions:

- FIFO workforces and increased mobility of local residents means that an increasing proportion of the economic stimulus from mining is flowing to nearby regional centres;
- Housing shortages and price spikes have also limited the potential for flow-on economic development and created pressures on non-mining businesses and socio-economic groups;
- FIFO workforces bring problems of fatigue, family isolation and community fragmentation, and limit growth in school enrolment and community participation (despite population growth);
- The number of coal mines close to a town, and the extent of the non-resident workforce, appear to be key factors determining the extent of social impacts;
- Community spirit and/or identity issues were associated with the loss of women and families from Coppabella and Blackwater; the lack of a clear town centre in Blackwater; and the largely

⁶² Rolfe, Miles, Lockie and Ivanova, 2007.

⁶³ Petkova, Lockie, Rolfe and Ivanova, 2009.

unplanned expansion of Nebo, Coppabella and Blackwater, all towns established for other purposes, in response to mining development; and

- By contrast, the deliberate attempt to plan Moranbah so as to feel like an established community back in the 1970s appeared to have had lasting benefits in terms of the ability of the town to generate a sense of community and to attract service industries and permanent residents.

The report also cited a substantial rise in the incidence of crime in several of the towns that have experienced rapid population growth. However, the results were not consistent between all towns and there is no discussion on the link between the level of mining and incidence of crime.

4.3 Moranbah

Moranbah is located 180 km south-west of Mackay and was constructed as a mining town in 1971. A joint venture between BHP Billiton and Mitsubishi (BMA) is in the process of submitting Environmental Impact Statements for three mines that are part of the BMA Bowen Basin Growth Project:

1. The construction of the new Daunia mine, 30 km south-east of Moranbah;
2. The construction of the new Caval Ridge mine, 20 km south of Moranbah; and
3. An expansion of the Goonyella Riverside mine, 30 km north of Moranbah.

An EIS has been completed for both the Daunia and Caval Ridge mines,⁶⁴ while the EIS for the Goonyella Riverside mine is still under preparation. The SIAs from the two studies referred to a survey of mining and contracting firms across the Central Highlands of Queensland undertaken in 2005, which found that the industry was experiencing a shortage of skilled labour across a range of occupations. The greatest shortages were for mining engineers, diesel fitters, open-cut examiners and various plant operators. The SIAs indicate that labour remains hard to source and a large percentage of the workforce is therefore expected to be sourced from outside the local area:

- The combined construction workforce is estimated to be 1,650 of which 90% would be engaged on a FIFO or DIDO basis; and
- The combined operational workforce is estimated at 800 of which 70% would be engaged on a FIFO or DIDO basis.

The housing shortage in Moranbah is expected to limit the number of families relocating to Moranbah. The majority of FIFO/DIDO workers are expected to be sourced from the Mackay area, and while on site will be housed in a mine village at Coppabella.

Some of the main social impacts anticipated from the Daunia and Caval Ridge mines are summarised below:

- Unless the housing shortage in Moranbah is addressed, the project will result in increased traffic on the Peak Downs Highway; the departure of many families from the area; an increase in the proportion of males in the population; and a drop in participation rates in sporting clubs and community organisations (although it has also been noted that 330 allotments were under construction in Moranbah at the time the SIAs were undertaken);
- Local and regional businesses likely to benefit financially from the construction and operation of the Project include:
 - Providers of accommodation (although most providers are already close to capacity);
 - Businesses contracted to provide goods and services to the Project; and
 - Businesses supplying perishable goods (such as dairy products, fruit and vegetables).
- However, local services and businesses will have increased difficulty in accommodating new employees;
- The project construction and operation would contribute to cumulative impacts through increased pressures on emergency services (eg. as a result of increased traffic and the use of heavy vehicles on the Peak Downs Highway), health care and housing;

⁶⁴ Refer <http://www.dip.qld.gov.au/projects/mining-and-mineral-processing/coal/bma-bowen-basin-coal-growth.html>

- Perceptions related to cumulative environmental issues associated with noise dust and vibration may also create concern for the community when combined with other nearby mining operations;
- The project will also compound the skills shortage in the local area, however, BMA has committed to a number of industry-wide and company specific programs that will increase the training and educational opportunities in the local area and region, which aim to:
 - Raise awareness of mining-related careers;
 - Ensure the accessibility of training and education; and
 - Improve skills retention with the company.

In 2006 the State provided assistance to the Belyando Shire to establish a Moranbah Growth Management Group (MGMG) and prepare a Mining Town Sustainable Management Framework. With support from Anglo Coal Australia and BMA, the main task of the Moranbah Growth Management Framework is to assist the Belyando Shire Council to prepare and achieve broad agreement to a master plan for short, medium and long term options for sustainable management at Moranbah.

A study was undertaken with assistance of Central Queensland University (CQU) in 2006 to clarify the social and economic challenges facing Moranbah, and the MGMT initiated a series of studies (floods, water demand, traffic, commercial centre and infrastructure). A strategic plan was prepared in 2007, outlining the infrastructure priorities to achieve a population of 15,000 within 15 years. Concerns at a lack of progress in implementing the Strategic Plan began to surface in late 2007 and culminated in the preparation of the Strategic Plan Implementation Project which detailed specific strategy projects, time frames, priorities and costs of implementation with proposed collective funding by the MGMT members. This was agreed to in December 2007.⁶⁵

The planning initiatives in Moranbah appear to have been short lived, as some key staff within the Isaac Regional Council have limited knowledge of the studies or strategic plans prepared three years earlier.

4.4 Clermont

Clermont is located 180 km north-east of Alpha. The Blair Athol coal mine, located some 25 km from Clermont, was developed by Rio Tinto Coal Australia in the 1980s. As the Blair Athol mine was approaching its closure, a joint venture led by Rio Tinto proposed to develop the Clermont coal mine to replace production from the Blair Athol mine. The Clermont mine is located 10 km from the town.⁶⁶

An SIA of the Clermont Coal Mine Project conveyed an impression that the new mine would help rejuvenate Clermont and turn around the recent population decline.⁶⁷ Although many staff and contractors were expected to be sourced from Blair Athol and other local mines, and the majority of new staff would not reside in Clermont, Clermont's population was expected to increase by 325 people from a base of approximately 2,100 (representing an increase of 15%). This would lead to a range of social impacts:

- Lower unemployment (in 2001 Clermont had 4.7% unemployment);
- Higher average wages;
- Upward pressure on housing and rental prices; and
- Increased pressure on some local services (eg. aged care facilities and domestic violence services).

In addition, the project would provide economic benefits to some local suppliers, and would improve skill levels among the workforce through direct and indirect training support. However, the increase in the mine workforce was expected to disadvantage some local businesses, which may either lose staff to the mine or find it difficult to attract and/or house staff in Clermont.

Rio Tinto subsequently partnered with the Belyando Shire Council to undertake the Clermont Preferred Future Project.⁶⁸ The project originated from the town's dependence on the Blair Athol Mine (in 2006 the

⁶⁵ McEwan and Jackson, September 2008, p. 6.

⁶⁶ The joint venture includes Queensland Coal (a fully owned subsidiary of Rio Tinto Coal Australia), Mitsubishi Development Pty Ltd and EPDC Australia Pty Ltd.

⁶⁷ Refer <http://www.dip.qld.gov.au/coordinator-generals-projects/completed.html> (Clermont Coal Mine)

⁶⁸ The description of the Clermont Preferred Futures Project is derived from a report by Miles, Reark,

mine accounted for 22% of the town's workforce) and aimed to help Clermont adjust to the closure of the Blair Athol Mine, capitalise on the growth that the new mine will bring, and consider a longer term post-mining future. The project was undertaken over a 12 month period, and resulted in a set of six themes:

1. Business, entrepreneurship and economic development;
2. Infrastructure, investment and transport;
3. Leadership and governance;
4. Liveability and lifestyle;
5. Natural capital and cultural heritage; and
6. Community health and wellbeing.

Although the issues identified were similar to those incorporated in regional planning documents (described further in Section 5), it was argued that Clermont provides a unique situation and requires a tailored approach. However, the Clermont Preferred Future strategy is designed to be used by the three tiers of government, industry and the community leaders as a starting framework to address key challenges, stimulate growth and remove the impediments or blockages confronting Clermont in achieving its preferred future.⁶⁹

The appointment of a permanent officer, charged with responsibility for implementing specific strategies, has been necessary to achieve progress. The achievements are complimented by an annual grants program. Funded by Rio Tinto, the Clermont Community Development Fund is used for a wide range of activities, as demonstrated by the following projects funded in 2009:

- Clermont oral and visual history project (\$112,500);
- Supporting tomorrow's leaders - Clermont State High School leadership scholarships (\$20,000);
- Future Rural Skilling Programme, Clermont Rodeo and Show Society (\$6,249);
- Clermont Gym business plan (\$6,723);
- Clermont Preferred Future Strategy Prioritisation workshop (\$14,630);
- Urban Design Master Plan, Isaac Regional Council (\$48,000);
- Clermont State School Parents and Citizens Association Business Plan (\$17,165);
- Professional training for the Clermont Community Consultative Committee and Clermont Community Development Fund (\$17,500);
- Isaac Regional Council Climate Smart Home Service Programme (\$60,000);
- Creative Writing culture, Kilcummin State School (\$6,400);
- Digital Regions Initiative - investigation and submission, Mackay Whitsunday Regional Economic Development Corporation (\$5,000); and
- Capacity Building Project, Clermont Community Housing and Other Services (\$55,833).

For the period 2009 to 2011 Rio Tinto has allocated up to \$1.5 million for the Community Development Fund. Additional project details are available in Rio Tinto's 2008 Community Development Fund Annual Report.⁷⁰

4.5 Research on FIFO Workers

In 2005 the Western Australian Chamber of Minerals and Energy conducted an assessment of FIFO operations on the 'triple bottom line'. The report concluded that long distance commuting offers a sustainable development solution in dealing with remote mining operations, and is also assisting the resources sector to deal with the problem of skills shortages. Furthermore, FIFO provides social benefits for workers who choose this form of employment, although there are issues associated with stresses on families that warrant further investigation.⁷¹

Kinnear, Howkins and Springer, 2008.

⁶⁹ Miles, Reark, Kinnear, Howkins and Springer, 2008 (p.12).

⁷⁰ Refer http://www.riotintocoalaustralia.com.au/index_ourapproach.asp (community development funds)

⁷¹ The Chamber of Minerals and Energy, January 2005, p.18.

Research was conducted at Kalgoorlie on the health of men engaged on a FIFO basis from 2003 to 2005. The research indicated significant problems associated with the relationship between work practices and the status of male workers health. Moreover, stressors including 12 hour work days and shift work are associated with concerning levels of psychological distress, chronic fatigue and disruption with sleep, social and domestic life. Workers are meeting the demands of these stressors by having emotional and behavioural reactions. Emotional reactions include fatigue and psychological distress. Behavioural reactions include decreased physical activity and increased smoking, caffeine and alcohol consumption.⁷² The report included a number of recommendations to improve men's health, largely focusing on employer-led initiatives.

Research contributing to a PhD at the University of Western Australia was conducted between March 2005 and June 2009 to investigate the impacts of FIFO arrangements on health and relationships.⁷³ The research noted that half of FIFO employees worked more than 50 hours per week, but produced results quite different to those from the research at Kalgoorlie. An extract from the report is presented below:

The main conclusion of this project is that for most employees and partners, FIFO and extended working hours had some negative impacts on their mining work satisfaction and lifestyles but did not affect other aspects of their life (i.e. stress levels, mood, relationship quality or health). Often under recognized are the positive aspects of FIFO and extended working hours, including relatively long blocks of leave to spend quality time with others and the relatively high income paid to FIFO employees that can provide employees with a comfortable lifestyle. The study findings collectively suggest that FIFO and extended working hours have fewer negative impacts than anecdotal evidence suggest.

A small proportion of employees and partners were highly dissatisfied with FIFO and/or extended working hours, however, it was possible to predict who was most likely to be dissatisfied and as such specific assistance may be tailored to these individuals (e.g. the use of shorter and less compressed rosters, and/or the use of FIFO social groups or support groups).

There are clearly different views about the social impacts of FIFO working arrangements. It appears that a relatively short work roster reduces the potential negative health and social impacts. However, people react differently to different work rosters and monitoring of staff is clearly an important aspect of maintaining a healthy workforce; minimising social problems resulting from FIFO arrangements; and reducing workforce turnover. There are a number of studies and a number of experts that can advise mining companies on these aspects. There are also related studies that could be useful, for example, a study by the Centre for Social and Community Research (Murdoch University) on how families, in which one member is engaged on a FIFO basis, copes with parenting of young children.⁷⁴

A study funded by the Criminology Research Council investigated the incidence of intimate partner abuse (defined as all types of physical and non-physical violence and acts of abuse between intimate partners) in the Mackay and Bowen Basin areas.⁷⁵ Anecdotal information suggests that women living in mining communities, particularly those whose intimate partners are working in the mining industry, are at high risk of experiencing intimate partner violence. The study concluded that the levels of physical abuse were marginally higher in the study area than comparable national studies: 11.5% of women reported physical abuse at some point in their current relationship, compared with 10% nationally, and 4% of women reported physical abuse in the past year compared to 3% nationally (p.77). However, and contrary to expectation, mining cultures had little or no demonstrable association with women's experience of most forms of abuse (p.77).

Other factors, such as drug and alcohol use (drugs having a greater magnitude of impact, but partner drinking habits affecting more women), were found to be more strongly and consistently associated with women's experience of abuse. Overall, this study suggests that if mining cultures have any influence, they are limited and must be seen in the context of influences that are much more significant (pp.77-78). The authors of the study highlighted the importance of prevention campaigns and programs that focus on

⁷² Keown, August 2005, p. 11.

⁷³ Clifford, August 2009, p.64.

⁷⁴ Refer Gallegos, undated.

⁷⁵ Nancarrow, Lockie and Sharma, 2008.

non physical forms of abuse, which also have significant mental health impacts, compromising the well being of women and children in their care.

While there are two Regional Domestic Violence Services in the Bowen Basin region, a range of issues affects their ability to deliver services to women affected by abuse, including that a substantial percentage of women (19.6%) in the study said that they did not feel the abuse was serious enough for them to seek help. The study also reveals a greater proportion of applications for Domestic Violence Protection Orders in the Bowen Basin, compared to such applications in Queensland, suggesting that there is less early intervention and less access to appropriate specialist support in the Bowen Basin region. A wider range of mainstream services, including health services, with staff trained to recognise and respond to intimate partner abuse is required to enable early intervention and appropriate support for women and children affected by intimate partner abuse (p.78).

5. GOVERNMENT PLANNING INITIATIVES

The Sustainable Planning Act 2009 resulted in a number of changes to Queensland's planning laws, aiming to improve and streamline land use planning and development frameworks and systems. The Act emphasises the coordination and integration of planning at the three levels at which it occurs in Queensland (state, regional and local levels). Relevant regional and local plans are identified and discussed in Sections 5.1 and 5.2.

5.1 Regional Plans

Jericho, Belyando and Bowen are not only located within three separate regional councils, but three separate regions of Queensland. Regional plans have been prepared for the Central West, Central Queensland and Whitsunday Hinterland and Mackay regions. The regional plans provide background information, a vision for each region and specific strategies to help realise the vision.

Each of the three regional plans acknowledges mining as a key economic (or future economic) activity, but offers a different perspective:

Central West:⁷⁶ The region, which covers seven local governments, including the Barcaldine Regional Council, has a strong agricultural base and has had limited mining activity to date. However, mining projects in the Galilee Basin are anticipated to be a primary driver of economic and social change in the future. As mining development lies ahead, the regional plan identifies the need for the resources sector to effectively engage communities and governments to maximise the economic and social benefits of development, and address community concerns over potential impacts. A number of mining-related issues have been identified in the regional plan:

- Road and rail weight and traffic capacity;
- Skill shortages and training options;
- Changes to social structure;
- Demand on the region's water, housing and electricity supply; and
- Alignment with state and national targets to reduce greenhouse gas emissions.

According to the DIP website (June 1010), 'progress on the Central West Regional Plan implementation is underway the department and Barcaldine Regional Council are undertaking strategic planning to manage new growth that may result from proposed mining and resource development in the Galilee Basin'.

Central Queensland:⁷⁷ The region, which covers four local governments and the cities of Emerald, Rockhampton and Gladstone, has a diverse industry base. The regional plan acknowledges the importance of mining and in particular, the production of coal and gas from within the region. The regional plan highlights the importance of effective planning to ensure the region maintains its competitive advantage through its world class infrastructure. The regional plan also emphasises diversification and value adding through mineral processing and manufacturing, and highlights the importance of education and skills development to support innovation and production. The regional

⁷⁶ DIP, September 2009.

⁷⁷ Central Queensland Regional Planning Advisory Committee, 2002.

plan also identifies the need to develop strategies to address the social and cultural needs associated with the population growth and changing demographics resulting from major industrial development, and the provision of adequate social services in small, rural communities.

Whitsunday Hinterland and Mackay:⁷⁸ The existing Whitsunday Hinterland and Mackay (WHAM) Regional Plan covers four local government areas and contains a clear goal and a number of strategies specifically addressing mining (and manufacturing). The goal is to support and enhance the region's mining and manufacturing industry by maximising economic benefits while managing social and environmental impacts. Those strategies relating to mining include:

- Protect access to extractive and mining resources for existing future use;
- Establish strong links between regional representatives of mining industries, local and state government agencies, business and industry and other stakeholders to ensure future industry needs are met in a timely manner, and to foster cooperative relationships and alliances to undertake initiatives to maximise the associated benefits for the region;
- Encourage research and development in environmental technologies and practices, such as carbon credit packaging, 'clean coal' technology, recycling, site reclamation and waste management;
- Improve sustainability of the mining industry through ensuring the return of rehabilitated mining sites for 'downstream' use;
- Investigate viable options for multi-use of mining infrastructure, transport and service facilities that do not compromise mining industry efficiencies; and
- Encourage the mining industry to collaborate and assist government and local communities to develop sustainable opportunities for employment and training and address accommodation, transport and business generation issues.⁷⁹

The current Whitsunday Hinterland and Mackay regional plan is not a statutory plan. As such, a statutory plan shall be developed and a first draft is expected by the end of 2010.

In summary, the regional plans are strongly supportive of mining and further mine development, providing it is undertaken in a consultative manner; promotes or contributes to social and economic development; and minimises adverse environmental impacts.

5.2 Community Plans

Two of the three regional councils in which Jericho, Belyando and Bowen are located have prepared community plans, which are intended to build on state and regional priorities and plans and provide additional details, including specific strategies, to realise local objectives:

Barcaldine: The Barcaldine Regional Council Community Plan⁸⁰ comprises three separate plans for each of the Alpha, Aramac and Barcaldine areas. The plan states that the ideas and suggestions of more than 100 people have been collated into a plan that will help these communities maintain their identity, develop their economy, and improve the assets and lifestyle of the region.

The Community Plan states that the Alpha area has a lifestyle that is safe, comfortable and ideally suited to families. People enjoy an easy-going small community lifestyle with basic services and facilities. However, the Plan also acknowledges the importance of mining to the future of Alpha:

- Mining will provide local employment and contracting opportunities (pp.13,18);
- Local people want to see Alpha as a sustainable community with a diverse economy where mining staff are integrated into the community (p.14) and environmental impacts are minimal;
- Mining provides an opportunity for employment, which can increase the population, and hence, justify the provision of improved services (p.13); and
- There are, however, concerns about the potential social and environmental impacts of mining, and the community hopes to receive sufficient information and engage closely on these issues to help maintain social cohesion (and avoid becoming a 'mining town'(p.22)) and minimise

⁷⁸ Department of Local Government, Planning, Sport and Recreation, June 2006.

⁷⁹ Department of Local Government, Planning, Sport and Recreation, June 2006 (p.48).

⁸⁰ Cavaye, October 2009.

environmental impacts (eg. protecting existing nature refuges and areas of remnant vegetation (p.18)).

Isaac: The Isaac Regional Council has prepared a strategic plan for the decade to 2019.⁸¹ The plan notes that mining is a significant driver of the local economy and provided 76% of total gross regional product in 2007/8. The plan gives considerable emphasis to a range of mine-related issues:

- The plan notes the high population growth forecast for the region (2% per annum) and the need to provide a range of affordable and alternative housing options to meet current and future needs;
- The plan notes that some people see single person's camps and FIFO work practices as a threat to community sustainability;
- The need to monitor and manage the cumulative impacts of mining on the natural and built environment is highlighted (noting noise, dust and vibration);
- The plan gives support for Clean Coal Technology initiatives;
- The plan indicates that the broader community will be engaged to prepare 'place-based' Community-Economic Development Plans; and
- A partnership between Rio Tinto Coal and the Isaac Regional Council has been initiated and is referred to as the Clermont Preferred Future Project (discussed in Section 4.4).

Whitsunday: Although a community plan has been prepared for the Whitsunday Regional Council, the plan was prepared prior to the council amalgamation, and therefore refers only to the former Whitsunday Shire, which excludes those areas previously included in Bowen Shire.⁸²

5.3 Proposal for Alpha

The Barcaldine Regional Council has proposed that Alpha be developed to facilitate growth resulting from the development of coal mines in the area. Although a detailed plan has not been prepared, a preliminary town plan has been drafted, and the proposal described at several state government planning meetings. Key aspects of the proposal include:

- Extending the existing airport and upgrading the airport facilities so that each mining company uses the Alpha airport rather than construct their own facility on the mining leases;
- Developing a road north of the airport to allow direct access to the Waratah and Hancock mines (and improving the Alpha end of the Alpha-Clermont road);
- Improving water supply (either through use of surplus water available to the mines or an alternative, new source);
- Improving power supply (building on the 275 kV lines from the Lilyvale substation);
- Releasing residential land (in addition to land currently being developed in Alpha);
- Releasing industrial land;
- Upgrading the sewerage system; and
- Improving telecommunications.

In the medium to longer term, the hospital and public school would also be upgraded and services expanded. Other services, in particular child care and an expansion of police and emergency services, are seen as essential to the proposed development.

Some costs, such as upgrading the airport and developing a road from the airport to the mine sites, would be funded by the mining companies as a direct construction cost. Other costs (not required for mine construction) would be provided up front by the mining companies in lieu of subsequent royalty payments. The Barcaldine Regional Council has estimated the costs to be in the order of \$120 to \$150 million. Should all four mines be developed, this amount is likely to represent less than 20% of the royalties paid to the State Government in one year.

The proposal is discussed further in Section 7.

⁸¹ Isaac Regional Council, undated.

⁸² Mackay Regional Council for Social Development Ltd, August 2008.

5.4 Abbot Point State Development Area

Abbot Point forms a key part of the Government's Northern Economic Triangle Infrastructure Plan 2007 - 2012. This plan is a Government initiative to "see the emergence of Mount Isa, Townsville and Bowen as a triangle of industrial development and mineral processing over the course of the next half century".

The North Queensland Bulk Ports Corporation (NQBPC) is in the process of expanding the coal export capacity at Abbot Point to 50 Mtpa (X50). The X50 expansion would effectively duplicate the existing terminal infrastructure and provide a second rail loop and dump station, a second in-loading and out-loading conveyor stream, a second berth, a second ship loader and additional stockyard capacity.

Investigations into the expansion of facilities to increase export capacity to 80 Mtpa (X80) and 110 Mtpa (X110) are also being undertaken. NQBPC endorsed proposals from BHP Billiton and Hancock Coal for the construction of two new coal terminals. BHP Billiton will utilise coal from the Bowen Basin and have an export capacity to 50 Mtpa. Hancock will utilise coal from the Galilee Basin and have an export capacity of 60 Mtpa.

NQBPC is also considering the construction of a Multi Cargo Facility (MCF) at Abbot Point. The MCF may reduce the need for new off-shore facilities. However, until further planning is completed and project timelines and costs are clearer, there is no guarantee that this will occur. As such the offshore component for the X110 approval has been kept in place until a decision on the MCF has been made.⁸³

In addition to increasing the export capacity of Abbot Point, the development proposals include improving water supply (from the Burdekin River) and upgrading power transmission lines.⁸⁴ In addition, DIP in partnership with the Whitsunday Regional Council, is undertaking the Bowen/Abbot Point Accommodation and Community Infrastructure Study. The study will investigate both temporary and permanent accommodation issues and address future planning to ensure best outcomes for existing and future communities. As part of this study, a Community Consultation Group has been established to facilitate the flow of accurate information between the community and infrastructure stakeholders and vice versa.⁸⁵ A draft report is to be prepared by August 2010.

5.5 Government Funded Mining Initiatives

In 2006 the State Government launched a number of initiatives to ensure Queensland could capitalise on the increased demand for export coal. The Coal Infrastructure Program of Actions, developed in partnership with the Queensland Resources Council, included funding commitments for physical infrastructure (including Abbot Point Stage 3 expansion to 50 Mtpa), skills, housing and planning.⁸⁶

Skills and training initiatives delivered under the Program of Actions include establishment of:

- The Mining Industry Skills Centre to address medium to long term training and skills issues; and
- The Queensland Minerals and Energy Academy to increase the number of students pursuing trades in the mining and energy sectors through apprenticeships, traineeships and work experience.

The Queensland Government recognised the need to provide planning support for towns within the Bowen Basin, which were experiencing rapid population growth as a result of the expansion of the coal industry. This expansion placed substantial pressure on social infrastructure, including housing and health, education and community services. Based in part on the experience at Moranbah (described in Section 4.3), the Queensland Government launched the *Sustainable Future Framework for Queensland Mining Towns*, which aimed to:

- Provide an overview of existing and potential growth management issues for mining towns situated in the Bowen and Surat Basins;
- Examine existing and proposed responses to growth management issues by the State of Queensland, local government and industry; and

⁸³ Bowen and Abbot Point Community Consultation Group, Meeting Minutes, 14 April 2010. Refer www.dip.qld.gov.au/resources/minutes/bowen-abbot-point/bowen-14-april-2010-meeting-notes.pdf

⁸⁴ The development of Abbot Point also included the East Coast Alumina Refinery and Port until the withdrawal of Chalco from the project.

⁸⁵ Thorne, 2009.

⁸⁶ Queensland Government, July 2008.

- Outline a proposed framework for sustainable growth management of mining towns in Queensland.⁸⁷

A key feature of the framework is the establishment of local leadership groups: a local group consisting of representatives from government, developers and the community, with responsibility for the preparation and implementation of local development plans. Importantly, considerable community consultation was undertaken during the preparation of the *Sustainable Future Framework for Queensland Mining Towns*, including the identification of a wide range of impacts of mining industry development on local communities. These impacts, listed in Appendix 4 of the Framework, included:

- Skills shortages, particularly within traditional rural industries and government services;
- Housing shortages and increasing house prices and rental costs;
- Reduced housing affordability, impacting particularly on young people, low income groups and the unemployed; and
- A shortage of temporary accommodation (eg. motel rooms and caravan parks).

In addition, the Framework noted that improved population projections were required; improved infrastructure planning; and improved coordination between state and local government and mining companies.

The Queensland Government subsequently launched the *Sustainable Resource Communities Policy*, which built on and expanded the *Sustainable Future Framework for Queensland Mining Towns*, both in terms of its geographic coverage (including the Galilee Basin) and participation. The *Sustainable Resource Communities Policy* includes a Partnership Agreement between the Queensland Government, the Queensland Resource Council and the Local Government Association of Queensland, and aims to develop and implement regional resource development initiatives that enhance the benefits and address the negative social and economic consequences associated with resource development to local communities through:

- Targeted and coordinated responses to current issues in the Bowen Basin, for example and in the first instance, through the *Sustainable Futures Framework for Queensland Mining Towns*;
- Comprehensive regional planning and infrastructure coordination particularly in emerging resource areas;
- Improved social impact assessment;
- Innovative solutions to the provision of affordable housing, and high quality health and education services; and
- Improved communication and collaboration between sectors.

The Moranbah Growth Management Group, discussed in Section 4.3, was instrumental in shaping the *Sustainable Resource Communities Policy*. The Sustainable Resource Communities Policy includes funding of \$100 million for improving local infrastructure, which may include:

- Child care centres;
- Affordable accommodation;
- Trade training centres;
- Community centres / pools;
- Emergency services facilities;
- Road safety improvements;
- Health related accommodation; and
- Aged care facilities.⁸⁸

The State Government has responded to housing shortages through the Urban Land Development Authority's Resource Town Housing Affordability program. The program was initiated in July 2010 when the State Government announced that Urban Development Areas (UDAs) would be established in Moranbah, Blackwater and Roma. Premier Anna Bligh said the UDAs would result in more than 900 new homes and

⁸⁷ Department of Local Government, Planning, Sport and Recreation, February 2007.

⁸⁸ Pollard, June 2010.

include a range of housing styles from one bedroom apartments to larger family homes. Furthermore, the Premier said that being able to buy or rent a home gives people a chance to put down roots, gives them a sense of belonging, and helps foster community spirit, which is an important part of the State Government's regionalisation strategy.⁸⁹ During the same announcement, the Planning Minister stated that the Urban Land Development Authority will be responsible for planning and assessing development applications in these areas, and in some instances act as developer. The ULDA has the resources to enable faster planning decisions and get affordable land and homes to market much faster. The announcement follows previous announcements for other Urban Development Areas in Mackay (May 2010), Townsville (June 2010) and Gladstone (July 2010).

In addition to the above policies and programs, several planning studies have been initiated:

- The State Government, Barcaldine Regional Council, Central Highlands Development Corporation and Central Western Queensland Remote Area Planning and Development Board have initiated an Economic and Social Impact Study in the Galilee Basin. The study aims to help the region prepare and manage the impact of a number of mining projects being developed in the area.⁹⁰ The report has not been released publicly and has not therefore been utilised in this SIA.
- The Industrial Land Analysis and Planning Branch of DIP also plan to conduct a study on industrial land requirements in the Galilee Basin in 2010. This study should also assist the local councils plan for future growth.

6. COMMUNITY ASPIRATIONS AND ATTITUDE TO MINING

6.1 Property Owners

The six property owners within the proposed MLA have had discussions with Waratah Coal since exploration commenced. The response to mine development has varied between families and individuals and has changed over time. The final response, to be articulated during negotiations between Waratah Coal and individual property owners, will to some extent depend on the agreed level of compensation. It is too early to predict this response.

The major concern of neighbouring property owners has been the potential impact of the mine on groundwater, as bores provide the main source of water for cattle and domestic purposes. Dust, fences bordering the mine site and access roads were also raised as issues of concern.

Property owners potentially impacted by the railway line were interested in the proposed rail alignment; whether there would be one or two railway lines; and the mitigation strategies that may be considered to help overcome constraints to cattle operations. While some potentially impacted property owners were clearly against the project, others hoped the Hancock railway would be chosen in preference to the Waratah Coal railway as it would 'save their property'. Others could see the potential for mutual benefit, either through some form of compensation or potential contracting opportunities (such as weed or fire control within the railway alignment). However, all potentially impacted property owners showed considerable interest in how the railway alignment was developed, and specific project details such as the size, speed and frequency of trains; the timeframe for construction and operations; the type of compensation that would be provided and the approach that Waratah Coal would take in dealing with property owners. Fire was also raised as a serious issue: a large fire was thought to have started from a coal train in 2009 near Collinsville and caused considerable damage. Rural fire brigades are staffed on a voluntary basis, predominantly by property owners, and a second line in the area would add substantial burden on property owners at a time when they are traditionally busy mustering and doing other stock work.

6.2 Local Communities

Community aspirations vary considerably across the study area, but can be generalised as follows. The Barcaldine Region has not experienced large-scale mining activity and the towns of Alpha, Jericho and Barcaldine have suffered a declining population over an extended period. Heavily reliant on beef cattle and

⁸⁹ Queensland Government, July 26 2010.

⁹⁰ Tim Mulherin, quoted in the North Queensland Register, April 2010.

tourism, many people see mining as an opportunity to redress the declining population, provide employment opportunities, and in doing so, act as the catalyst for both improved infrastructure (particularly power and water) and services. In-migration is generally regarded as a positive outcome, although considerable interest was shown in the origin of FIFO workers, the longevity of the mine, and the role of the Chinese construction companies, including whether Chinese staff would form part of the workforce.

Although the majority of people from Barcaldine, Jericho and Alpha support the development of the mine, concern has been expressed for the environment, and in particular, impacts on both surface and ground water, and potential problems resulting from unplanned (and unrestrained) growth, culminating in a mining town.

In contrast, the Belyando Region has experienced substantial mining development, which has led to substantial in-migration, including the establishment of Moranbah, and high employment and income levels and improved public infrastructure and services. While generally supportive of mining development, particular interest was expressed in the proposed rail alignment, and similar concerns were expressed on the environment, particularly in relation to the source of water for the mine and the impacts that the mine would have on the Belyando, Suttor and Burdekin catchments. Concern was also raised over the condition of the Clermont-Alpha road, which in its present state, would greatly limit the potential for contractors based in Clermont to provide services to the mine.

The Whitsunday Regional Council and many Bowen residents appear to be supportive of mining development and the expansion of facilities and increased tonnage exported from the Abbot Point State Development Area, on the basis that the project will create additional employment and contracting opportunities and stimulate economic growth in the Bowen area. Again, this support is conditional on adequate environmental practices, in particularly those in the vicinity of the wetlands near Abbot Point and the marine environment. Members of the Bowen-Abbot Point Community Consultation Group have expressed concern with rising house prices and rental costs, and the limited infrastructure and services available in Bowen. Increases in the population were seen as fuelling further increases in housing prices and rental costs, and making public and private sector services more difficult to access (including for example, dentists, child care and social services). Dust from coal trains was also raised as an issue.⁹¹

Some people from Collinsville expressed a desire for employees working on the railway to be based in Collinsville. FIFO arrangements for mines near Collinsville were not viewed favourably, as staff invariably lived in Bowen, and Collinsville's population and the number of businesses in town were both in decline. Concern was also raised on the potential impacts of the railway on the Bowen River, which is a major source of recreation for the people of Collinsville. Collinsville residents are less supportive of mine development, although this largely stems from issues relating to the existing coal mines on the outskirts of the town, and the existing railway line, which passes through the town.

Various people expressed concerns over potential adverse social impacts resulting from either FIFO workforces or unplanned growth resulting in mining towns that are less attractive to reside in and which may therefore erode community values. Some people called for an end to FIFO operations, although others (including some current mine workers) stated that they would not work in Alpha unless engaged on a FIFO basis.

Emerald has benefited substantially from mining and is now a major service centre for mines in the Bowen Basin. The Central Highlands Regional Council sees Emerald as also servicing mines in the Galilee Basin, and public feedback confirms a genuine interest in the potential benefits that the mine will have in terms of employment and contracting opportunities for residents of Emerald.

An underlying attitude, particularly in the areas that have mining experience, is that mining benefits South East Queensland, and Brisbane in particular, rather than the areas from which coal and other minerals are extracted. There is some awareness, and support for, the Western Australian model, in which 25% of mining royalties are distributed to nine regions in the state, with the exception of the Perth metropolitan area. Similar distribution models have been introduced in a number of countries. The World Bank reviewed these models in 2006:

Historically, royalties have been largely retained by the central or provincial government, with little going to the regions or communities where mining occurs. The result is that host communities

⁹¹ Bowen and Abbot Point Community Consultation Group, Meeting Minutes 19 May 2010. Refer www.dip.qld.gov.au/resources/minutes/bowen-abbot-point/bowen-19-may-2010-meeting-notes.pdf

*seldom benefit and instead bear the brunt of mining-related impacts. Although most nations still place royalty receipts into the general fund for distribution through the budgeting process, a growing number, particularly in Latin America, target distribution more narrowly. In today's operating environment, companies are increasingly concerned about issues relating to sustainable development, community involvement, and how to pay for these. Most mining companies would prefer that a royalty, if imposed, go at least in part to either affected communities or identifiable public infrastructure.*⁹²

Clearly, many people in Central Queensland would also prefer to see a proportion of royalties, or a proportion of other direct mining benefits, allocated specifically to the local area.

Despite providing the community with various options to request information or register a complaint about the project, no complaints were received by Waratah Coal outside the public consultations between June and September 2010. The main complaint during the initial public consultations concerned the process in which people were notified of the meeting and the need to more effectively raise awareness of public forums in the future. Outside the public consultations, the only contact with Waratah Coal was made in relation to the consultation process (ie. checking meeting dates and venues) and employment and contracting opportunities.

6.3 Indigenous Response

Indigenous representatives participated in public meetings in Collinsville and Bowen. While the general response of these participants is not intending to represent the Indigenous community in any way, the project appeared to be viewed as a potential opportunity for providing Indigenous employment, contracting opportunities and other benefits. At the same time, as for the wider community, concerns were evident over the potential environment impacts.

7. FORECAST CHANGE AND SOCIAL IMPACTS

7.1 Economic Impacts

As described in the project's Economic Impact Assessment, the project will:

- Increase industry output in Queensland by \$232 million annually during the 3 year construction period, \$5.2 billion annually during the first five years of operation, and \$5.7 billion thereafter;
- Create an additional 2,975 Full Time Equivalent (FTE) positions annually over the 3 year construction period,⁹³ an additional 4,464 FTE positions throughout the first 5 year period of operations, and 3,954 FTE positions thereafter;⁹⁴
- Generate additional wages and salaries of approximately \$453 million annually during the construction period, and \$776 million per annum during operations; and
- Generate \$365 million revenue annually, on average, for the State Government (during both construction and operations) and \$710 million annually for the Commonwealth Government.

As noted earlier, wage and salary levels in the mining industry are already substantially higher than any other industry, but will increase further:

- There is low unemployment levels at present and a skills shortage (limiting supply); and
- The mining and construction workforce will increase substantially as a result of the large number of very large resource projects being initiated within a similar timeframe (increasing demand).

The cumulative impacts of multiple resource projects will see continued strong growth in income levels in the Isaac, Central Highlands and Whitsunday regions, and in Mackay and Rockhampton, and boost income levels in the Barcaldine region. While men dominate the mine workforce (approximately 86% in

⁹² World Bank, 2006, p. 274.

⁹³ This is lower than the 6,000 positions required during construction because port construction will occur over an 18 month period, and some of the other construction employees will leave other jobs to work on the China First project.

⁹⁴ This exceeds the estimated mine workforce because it includes direct employment, indirect employment (through the provision of goods and services to the mine) and induced employment (resulting from an increase in population and higher incomes, which increases the demand for local goods and services).

Queensland), there has been steady growth in female employment, and in particular, the proportion of women working in non-traditional roles in Queensland's mining sector.

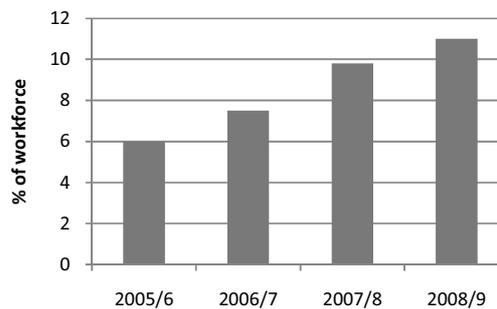


Figure 26: Women Working in Non-Traditional Roles in Queensland's Resource Sector

Source: Queensland Resources Council, December 2009

While more males will be employed than females with the China First Coal Project, it is likely that female employment shall continue to rise over time, in part due to near full employment in the region, and in part due to the continual breakdown of cultural barriers limiting female training and employment in particular trades and industries. The Queensland Resources Council is actively promoting female employment, pay equality and improved workplace conditions for female employees.⁹⁵

Local business opportunities will predominantly benefit suppliers in Emerald and to a lesser extent those from Mackay, Clermont and Bowen, including those contractors that establish a base in Alpha or Jericho.

The project will also cause some negative economic impacts. These include:

- A decrease in cattle production (and/or cattle productivity) in those areas in which project facilities are located;
- The loss of employees from existing business activities as they take jobs in the project;
- Increases in the cost of living (including increases in the cost of housing and an increase in the cost of goods and services resulting from higher wages);
- The potential loss in economic benefits from a downturn in the industry; and
- Increasing income inequality.

The reduction in cattle production is not expected to be significant at an industry level, either when considering the project (as described in Section 2.4) or the cumulative impact of multiple resource projects. However, the loss of economic activity (across a range of industries) is expected to be significant when considering the loss of current employees to cumulative resource projects. Given the low level of unemployment in the region, skilled workers will have a good chance of gaining a job on a resource project and receive a considerable boost in pay. This will continue to put upward pressure on wage and salary levels, which will to various degrees, be passed onto customers. Thus, the prices of many goods and services will be higher in the region than in other parts of Queensland due to the need to pay workers a higher wage to compete with the mining and CSG industries.

As discussed in Section 7.6, upward pressure will also occur on house prices and rental costs, which will contribute to the relatively high cost of living in the region. This will have a greater impact on those people with low incomes, such as retirees, single parents and the unemployed (refer also Section 7.9).

The potential loss in economic benefits from a downturn in the industry is considered as unlikely in the short to medium term as output from the China First Coal Project has already been sold to China Power. However, a major downturn in the coal industry would impact severely in Isaac and Central Highlands, as these are areas that are heavily dependent on mining. Mackay and the Whitsundays would also be impacted, but to a lesser degree, as they have more diverse economies. A downturn could increase unemployment, reduce incomes, lead to a reduction in house prices and result in a reduction in the level of support provided by mining companies for community infrastructure and services. It should be noted,

⁹⁵ Refer <http://www.qrc.org.au/> (resourceful women).

however, that the outlook is for exponential growth of coal exports to both India and China, based on the rapid increase in new coal fired power stations in both countries. The risk of a major downturn in the industry is considered to be relatively low, despite the potential introduction of an Emissions Trading Scheme in Australia and internationally. Queensland mining towns, and in particular, those near coal mines, will therefore have a strong medium to long term economic future.⁹⁶ Higher coal prices, which have been experienced since 2006, are expected to be maintained.

While the project will cause some negative economic impacts, the positive economic impacts are expected to greatly outweigh the negative economic impacts.

7.2 Population and Demographic Change

The construction workforce is expected to be engaged on a FIFO basis and have minimal impact on the permanent, residential population within the project area. However, the operational workforce will impact on local populations:

- The majority of the operations workforce for the rail and port are expected to live in the Bowen area. However, due to the skills required, most employees are expected to be sourced from further afield. As a result, the project is expected to lead to an increase of up to 500 people, or a 5% increase in Bowen's current population.⁹⁷
- The remainder of the direct operational workforce will be engaged on a FIFO basis from Mackay, Rockhampton and Brisbane, and while housed in purpose-built accommodation while on-site, will lead to an increase in the population of Mackay and Rockhampton. Should 15% of the mine workforce reside in each of these centres in 10 years time, an estimated 700 additional people will reside in both Mackay and Rockhampton, representing around 0.5% of their forecast populations.⁹⁸

Unlike Bowen, where project employees will generally be based from the onset, the number of mine employees choosing to reside in Mackay or Rockhampton will increase gradually over time.

Should Alpha be developed as proposed, the permanent residential population of Alpha will increase substantially as a result of indirect and induced employment opportunities (ie. mine contractors and other jobs resulting from the higher population and higher income levels). If Alpha is not developed as proposed, contractors are more likely to reside in Alpha on a temporary basis and contribute little to Alpha's permanent, residential population. Alpha's permanent residential population in 10 years time could therefore range from as little as 500 to at least 2,000.⁹⁹

DIP has predicted a growth rate of 2.5% per annum for the Central Highlands between 2006 and 2031. This equates to a population for Emerald of around 15,500 by 2020. Given the emergence of Emerald as a significant regional centre, including a mine and CSG service centre for parts of the Bowen, Surat and Galilee Basins, Emerald's future population is predicted to be in line with or above State Government forecasts.

DIP has predicted a long term growth rate of 1.2% per annum for the Bowen area. Higher growth in the short to medium term results in an estimated population for Bowen of around 12,000 by 2020. Given the additional employment created as a result of the development of Abbot Point, and subsequent induced employment resulting from the increase in population and higher income levels, this projection is considered to be too low. Bowen's population is expected to grow at a faster rate than projected, and is estimated to be at least 13,000 by 2020 (implying annual growth of around 1.8%).

DIP has predicted long term growth rates of 1.9% per annum for Mackay, 0.8% for Rockhampton and 2.3% for the nearby coastal areas of Livingstone (which includes the towns of Yeppoon, Emu Park and Keppel

⁹⁶ Department of Local Government, Planning, Sport and Recreation, February 2007, p. 21.

⁹⁷ Based on 160 workers with average family size of 3.

⁹⁸ Based on 225 workers with average family size of 3. Note: employees who choose to relocate to Mackay or Rockhampton are generally expected to be married.

⁹⁹ In addition to the population varying according to the level of infrastructure in Alpha, estimates of contracted workers varies substantially for coal mines, making it difficult to predict the number of contracted positions required for the mines being developed near Alpha.

Sands). This compares with a long term growth rate for the greater Brisbane metropolitan area of 1.8% per annum.¹⁰⁰ The SIA concurs with these projections.

The China First Coal Project will result in a relatively small increase in the population of most centres, with the exception of Alpha and Bowen, and therefore have a relatively small direct impact on population. However, the cumulative impact of multiple resource projects will have a far greater impact on population in the region. Given the near-full employment levels in Queensland at present, and the well publicised skills shortage within the construction and mining industries, considerable in-migration will be required to satisfy the workforce requirements of the China First and other resource projects currently being developed. While many workers are expected to move to Queensland from inter-state, the sheer number of new projects being developed in Australia, and their scale, means that some workers will need to be sourced from overseas. Although subject to increasing debate in Australia at present, either an increase in the number of workers entering Australia with mining and construction skills will be required, or Queensland will need to accommodate a much larger share of Australia's skilled migrants.

While it is likely that construction of some of the proposed resource projects will be delayed, in part due to workforce shortages, it is likely that a number of projects will be constructed on or near schedule, and as a result, more foreign workers will either be granted temporary work visas or will migrate to Queensland. Overseas workers are expected to originate from a range of locations, but are likely to include China (given the involvement of MCC) and countries with high levels of competency in English, such as New Zealand, the Philippines and Papua New Guinea.

The project itself will not have a huge impact on demographic characteristics, however, the cumulative impacts of multiple resource projects in the Bowen, Surat and Galilee Basins will result in significant demographic change:

- There will be a higher proportion of non-residents (and in particular young and middle aged working males) in Alpha, and to a lesser extent, in Bowen;
- Inter-state and overseas immigrants will in general be younger and many will have or will establish young families. Thus, immigration will slow the aging of the population and slow the reduction in family size that would otherwise occur in Mackay, Emerald and to a lesser extent, Bowen and the Rockhampton area.

The reason why resource projects counter the demographic change occurring in Australia is a result of several factors:

- Young workers are more likely to be prepared to travel to find a job (hence, the mine workforce is typically younger);
- High income levels in the mining sector provides the economic means to buy a house and have children (whereas for most others, escalating house prices in urban areas means that children are living with their parents for longer; high living costs will delay or reduce the number of people getting married or having children; and for those young families that buy a house delaying or reducing the number of children is a coping strategy to counter high loan repayments).

Although resource projects may attract younger families, the mining and construction workforce employs 29% of males and 6% of females in Mackay, and lower percentages in Rockhampton, Bowen and Queensland as a whole. Thus, mine-related immigration will only slow (not redress) the aging population and reduction in family size in these centres. The demographic changes occurring in Australia, as described in Section 2.2, shall therefore continue.

7.3 Environmental Impacts

Although covered in detail in the EIS, some of the main environmental impacts – directly impacting people in the local area – are summarised here as they contribute to the social impact of mining. Environmental impacts are minimised as a result of the following:

- The railway model minimises the length of rail that crosses floodplains on the Belyando, Suttor and Bowen Rivers, and near Bowen avoids the Don River and Euri Creek; and

¹⁰⁰ Includes the Brisbane, Gold Coast, Sunshine Coast and West Moreton Statistical Divisions.

- The railway avoids national parks and other high conservation areas (the nearest national park to the railway is the Mt Aberdeen National Park, a national park with an area of 1,840 ha, located midway between Collinsville and Bowen), and which is located approximately 5 km from the proposed railway).

As stated in the EIS, the main direct environmental impacts will occur in the vicinity of the mine and will affect a relatively small number of landowners who reside on or in close proximity to the mine site. The environmental impacts are expected to include dust, noise, vibration and visual amenity. Only two properties on the MLA will have resident owners once operations commence. Additional families live on properties neighbouring the mine site, and downwind from the mining area, but given the relatively large size of the properties, relatively few families will be directly impacted from noise, vibration or visual amenity. Additional properties will be impacted by dust, particularly during periods of relatively strong wind, although Waratah Coal is considering a range of options to reduce dust from mine operations, including watering of stockpiles and roads and progressive rehabilitation of mined areas.

The main concern expressed by local property owners is the impact of the mine on groundwater. As discussed in the EIS, a comprehensive groundwater management plan will be implemented to minimise impacts on groundwater. This will include diversion banks to ensure mine water is recycled and used in the mine rather than released in the Belyando catchment. At the same time, neighbouring property owners shall be provided with piped water from the mine to be used for both stock and domestic purposes where a net deficit occurs due to mining activities, or there is a surplus in the mine catchment. A more reliable source of water will help overcome one of the main constraints to grazing activities in the area.

The impact of noise, vibration, dust and visual amenity along the railway line will be determined primarily by the distance that townships and rural residences are located from the final railway alignment, along with the quantity of train traffic. The nearest residential centres to the proposed railway are Mt Coolon (approximately 10 km) and Collinsville (approximately 12 km). At this distance the urban centres should not be impacted by noise, vibration or visual amenity. However, 4 rural residences are located within 2 km of the railway and a number of families will therefore be able to hear and/or see the railway from where they live and may be impacted by dust and/or visual amenity. However, options to reduce coal dust from the trains will be assessed.

The China First Coal Project is expected to require six trains each day (in each direction). However, if one railway is constructed for the Waratah, Hancock and AMCI mines, up to 18 trains (in each direction) may be required: which would generate noise, vibration, dust and visual impacts on a regular rather than periodic basis.

The Abbot Point area is 25 km from Bowen and relatively isolated, and as such, environmental impacts on local people should be minimised.

7.4 Impacts on Rural Properties

Mine site

The proposed mine site is located on eight beef cattle properties, each with an average area of around 70 km². Three of the properties are managed as a single entity, and one is jointly managed as a wildlife refuge with sustainable cattle grazing. The property owners live on three of the six entities.

Project infrastructure and open cut mining would be located on three of the eight properties. It is anticipated that Waratah Coal will acquire two properties in full and part of the third.

Underground mining would occur on the remaining five properties and contribute 64% of total mine production. The physical impacts on these properties will be far less. Access roads and power lines will be built to each long-wall panel, where bores will be drilled and submersible pumps used to extract mine water. Channels will be constructed to transfer the water to a central water preparation plant. Power lines and water channels will generally be adjacent to the access roads. Mine staff will check the pumps, test the water and monitor environmental conditions (eg. dust and subsidence). For these purposes, mine staff will use light 4WD vehicles. Subsidence is not expected to cause any discernable change on the surface: a drop of around 1 metre is expected across a 470 metre long-wall panel. This is not expected to impact on vegetation, fences, power lines or roads, although water tanks, pipes and creek beds will need to be checked after subsidence occurs. Some repairs or earthworks may be required. All ongoing cattle enterprises on the mining lease, and immediate neighbours, will be provided with 24 hour power supply and

improved telecommunications, and piped water should there be any reduction in the quality or quantity of water as a result of mine operations.

Compensation will also be provided to properties on the mining lease, although the exact compensation quantum is yet to be discussed and will not be publically available.

On an individual basis, the mine is expected to impact as follows:

- Three properties (one with a resident owner and two with non-resident owners) shall continue cattle operations while supporting underground mining activity.
- One property (with resident owner) will be acquired in full.
- Approximately one third of the jointly managed cattle/conservation property would be acquired. As the owners are not resident, it is expected that this property could continue to be managed as a cattle operation. Waratah Coal is expected to meet any costs that may be required for the property to continue cattle operations (eg. fencing, watering points, stockyards and farm access roads).
- One of the three jointly managed properties would be acquired in full. The homes of the resident owners will be relocated and cattle operations continued on the remaining two properties. The owners will be provided with improved telecommunications, power and piped water, and offered some financial compensation. In addition, Waratah Coal is expected to meet any costs that may be required for the property to continue cattle operations (eg. fencing, watering points, stockyards and farm access roads).

Neighbouring properties

Neighbouring properties will, to various degrees, be impacted from dust, noise, vibration, visual amenity and the presence of mine staff involved in environmental monitoring activities. The prevailing wind is from the north-east, indicating that those properties to the south-west of the mine site will be most impacted from dust. As previously discussed, those in relatively close proximity to the mine, and downwind, could exhibit a decline in pasture productivity. However, efforts will be made to reduce the level of dust (eg. lowering the height of stockpiles, spraying water and progressive rehabilitation of mined areas). These same properties may be provided with improved telecommunications, power and piped water, and offered some financial compensation.

Rail alignment

The rail alignment for the China First Coal Project is expected to traverse 36 properties. These properties vary in size from around 1,000 ha to almost 40,000 ha. The majority of properties are leasehold. Two properties support cattle feedlots and some have relatively small areas of cropping land (generally limited to areas on the floodplains). The remaining properties support beef cattle grazing operations on native pasture. Four houses are located with 2 km of the proposed railway route (although the rail alignment has not been finalised). The nearest house is located 300 metres from the railway, but at the same time, is located within a kilometre of an operational open cut coal mine near Collinsville.

Coal trains will increase the level of noise, dust and visual amenity and increase the risk of fire. Until a decision is made on whether the Waratah or Hancock railways are to be utilised [on the assumption that only one will be approved by Government, and will be open to all parties developing coal in the vicinity of Alpha], many property owners will continue to suffer from anxiety and stress in part due to the uncertainty of whether their properties will be impacted or not (particularly those people with houses relatively close to the proposed railway route), and in part due to the potential impact that a railway and trains will have.

The actual area of land lost to the railway will be small in terms of the overall area of grazing land available (generally less than 1%, but around 3% for some of the smaller properties). Unless some grazing areas are land-locked (ie. isolated from the remainder of the property and therefore not easily accessed), the railway will not therefore lead to a significant loss in the area of grazing land. However, dust from the coal trains, if not controlled, will reduce the willingness of cattle to graze on pasture near the train tracks, and potentially reduce the carrying capacity. Given the extended dry season, this could potentially impact a relatively large area in comparison to the area lost to the railway line. It has also been claimed that coal dust can similarly render dams or other water sources as unsuitable for cattle to drink from, so some alternative water sources may be required in the vicinity of the railway line.

Waratah Coal is considering a range of options to minimise coal dust from trains, including a new cellulose spray, watering and wagon covers. Some additional labour may also be required to check on cattle, bring

cattle to stock yards, check watering points, etc., as a result of the need to cross the train tracks. While under-rail culverts will be used for local roads and farm tracks when possible, and will help limit the number of land-locked areas on grazing properties, cattle are unlikely to pass under train tracks. While cattle have often adapted relatively quickly to roads or railways, crossing the railway tracks will be difficult, particularly at the onset.

Should the Waratah railway be selected, all property owners will be duly compensated. This may include financial payments, the realignment of fences and/or the provision of additional watering points, stockyards and farm roads. In addition, some property owners may have the opportunity to provide services during construction (eg. fencing) and operations (eg. weed or fire control within the rail alignment). This would supplement farm income and may enhance the economic viability of these properties.

7.5 Impacts on Public Infrastructure and Social Services

The China First Coal Project will itself have only a modest impact on public infrastructure and social services when compared to the cumulative impact of multiple resource projects:

- An increase in heavy vehicle traffic, particularly during the construction period (impacting 120 km of road from Gladstone to Rockhampton, including around 100 km of the Bruce Highway, and a further 450 km along the Capricorn Highway from Rockhampton to Alpha);
- Disruptions to traffic during the construction of the railway line, including traffic on the Bruce Highway north of Bowen;
- An increase in traffic on the Alpha-Emerald and Alpha-Clermont roads;
- An increase in accidents on the Alpha-Emerald and Alpha-Clermont roads, placing increased demand on police, health and emergency services;
- Improvements to power, water and communications for properties on or neighbouring the MLA; and
- The development of public infrastructure in Alpha, should the proposal to develop Alpha be implemented, which would see the provision of sewerage, an extension of the air strip and upgrading the airport terminal, and improvements to power, water, communications and other town infrastructure.

The majority of the mine workforce will be housed in purpose built accommodation that is on the mining lease and not in the vicinity of Alpha or Jericho. The mine site will have its own medical facility. Any workers with serious injuries are expected to be taken to the hospitals at Emerald, Rockhampton or Mackay. Given the limited health facilities available in Alpha, the medical staff at the mine site will provide an additional local resource and over time could be expected to provide assistance in times of emergencies (eg. accidents in the local area). In addition, the charter flights for the FIFO workers may be used to transport local residents to Mackay, Rockhampton or Brisbane if they need emergency health care.

The direct mine workforce is not expected to increase the demand on social services in Alpha or Jericho or surrounding towns, however the indirect workforce (ie. contractors) and their families will increase the demand on a wide range of public infrastructure and services (including health and education facilities, water and power infrastructure, garbage collection, etc). The Council's proposal for Alpha aims to address these requirements in an attempt to accommodate a higher population; integrate part of the mine workforce and contractors in the town; and facilitate improvements in infrastructure and services so that local residents benefit from the development of nearby coal mines.

If Alpha is not developed, a higher number of contractors are likely to provide mine services on a DIDO basis from Emerald, Barcardine, Clermont, Blackall, Tambo, or further afield. This will increase local traffic and fatigue is likely to become a problem, leading to an increase in demand on health and emergency services.

Due to population increase resulting from the cumulative impact of multiple resource projects, increased demand on social and welfare services can be expected in Mackay, Emerald, Rockhampton and Bowen. Although the average age of mining town residents is considerably lower than the state average, the aging population is another factor that will impact on physical infrastructure and service requirements in the future. The old age dependency ratio (the ratio of people aged 65 years and over to people aged 15 to 64)

is expected to double in Queensland from 20% in 2007 to around 40% in 2056.¹⁰¹ This change will impose additional requirements for health and aged care facilities and associated services in all areas.

The cumulative impact of multiple resource projects and resulting population growth, coupled with an aging population, is expected to have the following impacts:

- An increase in the number of children attending schools in Alpha, Bowen, Emerald, Mackay and Rockhampton (and nearby communities such as Yeppoon);
- An increase in the demand for health care, and in particular, aged care facilities and services;
- An increase in the demand for child care services;
- An increase in the demand for a wide range of welfare services (including, for example, accommodation support, victims of domestic violence, victims of child abuse, mental health support, etc);
- An increase in demand on the rural fire brigade; and
- An increase in demand on emergency services (resulting from increased traffic and in particular, the increase in large trucks on the main roads and the increase on DIDO workers).

Emergency services are currently very limited in the Alpha area. The development of four coal mines in the vicinity of Alpha will lead to rapid population growth in Alpha and to a lesser extent Jericho, and will result in substantially more traffic on all roads leading to Alpha. While construction materials are expected to be trucked in from Gladstone, on the Capricorn Highway, contractors and mine employees are expected to drive to Alpha from Barcardine (143 km), Emerald (169 km), Clermont (179 km), Blackall (168 km) and Tambo (169 km). These distances will result in fatigue and accidents, particularly after working a shift, and particularly on the unsealed roads (Blackall-Jericho, Tambo-Alpha and Clermont-Alpha).

The development of four coal mines in the vicinity of Alpha will lead to rapid population growth in Alpha and some growth in nearby towns including Jericho and Emerald. Many welfare services are already stretched to the limit and will have difficulty meeting the demand from a higher population let alone the increased demand potentially resulting from long distance commuting (particularly for contractors) and stress and marriage breakup as a result of FIFO or DIDO work practices. In addition, the lack of family and friends, particularly for new residents attracted to the area for mine employment, and the high cost of accommodation, means that family disputes or marriage breakups more often leads to individuals seeking support from welfare agencies than in other areas.

The increase in population, and rapidly increasing income levels, can be expected to significantly increase the demand for both private primary and secondary education, along with tertiary education, particularly at CQU.

A combination of factors, such as an increase in population, higher income levels, and a parent working on a FIFO basis, may contribute to an escalation in drug and alcohol abuse, particularly in the larger centres such as Mackay and Rockhampton. On the other hand, higher income levels may reduce stress levels and contribute to a reduction in drug and alcohol abuse. It is therefore difficult to predict what impact the development of multiple resource projects will have on the demand for law enforcement and welfare agencies, however, social trends would indicate that these services will need to expand to accommodate larger, more mobile populations in the future.

7.6 Impacts on Housing

As discussed in Section 2.6, housing prices have risen dramatically as a result of the expansion of coal mining in towns such as Moranbah and Clermont. The majority of the FIFO workforce will reside permanently in Mackay, Rockhampton and the greater Brisbane metropolitan area. As these are relatively large centres, the increase in population resulting from the project is expected to have a relatively minor impact on house prices in these centres. Bowen's population is expected to increase by around 5% as a result of the project, and this can be expected to contribute to higher housing prices (and higher rental costs) in the Bowen area.

The majority of local contractors are expected to be based in Emerald and Mackay. The modest increase in employment resulting from increased contracting opportunities with the China First Coal Project is not

¹⁰¹ ABS, 2009, p.2.

expected to have a significant impact on housing prices in these centres. However, the cumulative impact of multiple resource projects is expected to add to recent upward pressure on housing prices and rental costs in Mackay, Emerald, Rockhampton and Bowen. A recent housing study in the Central Highlands summarises the consequences of continually rising house prices, and offers a solution:

Analysis of a range of affordability measures showed the housing market in Central Highlands to be characterised by rapidly rising median rents, declining proportions of affordable rental stock, low proportions of lower income house purchasers and increasing property values. Notwithstanding the estimated low indicative mismatch of dwelling stock in Central Highlands, the above characteristics reinforce the case for facilitating the delivery of smaller, cost effective dwellings that respond to the needs of older persons and lower to moderate income households.¹⁰²

Speculation has already increased the cost of land and houses in Alpha and Jericho. This is likely to continue as contractors seek housing for staff and land to establish workshop and storage facilities. Should Alpha be developed, as proposed by the Barcaldine Regional Council, a substantially larger number of contractors (and some employees) will be based in Alpha, or establish satellite offices in Alpha. Under this scenario, house prices and rental costs can be expected to increase substantially, not only due to the China First Coal Project, but other coal projects planned in the area.

The cumulative impacts of multiple resource projects will not only increase house prices and rental costs in Mackay, Emerald, Rockhampton, Bowen, Alpha and Jericho but have a negative impact on the availability of tradesmen such as builders, plumbers, electricians and painters. Many tradesmen are expected to be attracted to the mines, particularly during the construction periods, and this will increase the cost of tradesmen and the waiting time before they arrive. This is also likely to impact towns such as Barcaldine, Blackall, Tambo and Longreach, where some existing tradesman can be expected to seek mine employment. This may lead to a further rise in property rentals in towns like Mackay, Emerald, Rockhampton and Bowen, which will disadvantage those people not in the mining or CSG industries, and in particular, those people on low income levels.

Temporary accommodation

Central Queensland attracts large numbers of tourists each year, predominantly in the winter months. Many are self-drive tourists and while some stay in motels or hotels, many stay in caravan parks. Bowen and Emerald also accommodate relatively high numbers of seasonal workers who are engaged to pick and process fruit and vegetables. This also occurs primarily during winter and spring. Seasonal agricultural workers generally reside in caravan parks or on farms where they work.

Housing shortages and high rental costs in mining towns in the Bowen Basin has resulted in a substantial increase in the demand for short term accommodation (hotels, motels and cabins, caravans and powered sites in caravan parks). Hotels, motels and caravan parks in towns such as Clermont and Moranbah have high occupancy rates, particularly in the winter months. The hotels, motels and caravan parks at Alpha and Jericho are likely to be fully occupied during the development of mines near Alpha and there will certainly be sufficient demand to increase the number of rooms, cabins and powered sites. Until this occurs, the shortage of available powered sites may actually reduce the number of tourists that overnight in Alpha or Jericho (or caravans are parked on the town outskirts overnight and create additional demand for public toilets and garbage collection services).

Bowen and Emerald are also likely to experience an increase in demand for temporary accommodation as a result of the development of multiple large scale resource projects. In Bowen, the limited rental market may mean that residents from lower income groups may turn to caravan parks for long-term accommodation. The high rental prices in Emerald may have a similar affect.

7.7 Impacts on Community Values

Evidence from the Hunter Valley and Bowen Basins indicates that community values, and in particular the 'sense of community' can be promoted by coal mining. In areas where the workforce is permanently located in local towns the income level is boosted and mining companies often provide funding for local infrastructure or community activities. Both factors can help address the loss of community values that may otherwise occur as a result of a declining (and aging) population and difficulty in meeting basic economic needs.

¹⁰² Department of Communities, June 2010, p.5.

The China First Coal Project will impact community values as follows:

- If Alpha is developed (as proposed by the Barcardine Regional Council), the town population will grow, infrastructure and services will be substantially improved, and income levels increased. This is expected to enhance community values.
- If Alpha is not developed, population growth will be predominantly through temporary residents, and infrastructure and services will remain inadequate, at least in the short to medium term. Under such a scenario, the local community is likely to be disenchanted with mining operations, and may develop a feeling of 'lost opportunity', which may erode community values.

Given the proximity of Jericho to the proposed coal mines, the town is likely to expand as contractors seek to accommodate their staff. The development of Alpha, should it occur, would limit the expansion of Jericho, but provide Jericho's residents with expanded social services. If Alpha is not developed, Jericho will grow, but is likely to share in the feeling of lost opportunity, as most contractors operate on a FIFO or DIDO basis and social services are not improved.

It is anticipated that some overseas workers will migrate to Australia to take positions in the project. Most overseas migrants and their families are expected to reside in the Brisbane area, although some are expected to reside in Mackay, Rockhampton and Bowen. Around 10% of the population in Mackay, Rockhampton and Bowen in 2006 were born overseas. The relatively small increase in migrants resulting from the China First Coal Project is not expected to diminish the cultural characteristics or sense of community in these locations. To the contrary, families from Asian or Pacific countries often add a colourful new dimension to towns or cities and contribute to their cultural characteristics and vitality. Emerald has a multicultural festival in September, and residents originating from other countries actively contribute, particularly the women. This has helped break down cultural barriers and provide a more interesting cultural mix in the community.

While the project is expected to have a relatively small impact on community values, other than in Alpha, the cumulative impact of multiple resource projects will boost the local economies (particularly in Bowen and Emerald) and contribute positively to the sense of community. The only negative impacts likely to result in these towns are from increased housing prices and rental costs, and a possible increase in drug and alcohol abuse, and subsequent increase in crime, in the larger centres. These adverse impacts should not be tied specifically to the development of resource projects, but to population growth and social change.

7.8 Impacts on Workforce Families

As discussed in Section 4.5, there has been considerable debate on the impact of FIFO employment on the health and well being of workers and their families. FIFO staff will, however, receive above average incomes; have their own room on site; work short rosters (seven days); and have annual leave (four weeks). Many FIFO staff will be able to maintain their current residence, and their dependents will have fewer disruptions in terms of schooling, accessing doctors, etc., and will often have the support of family and friends to help deal with the absence of the FIFO worker. Those families that chose to relocate to Mackay, Rockhampton or South East Queensland will presumably do so to enhance their current lifestyle. The shift may cause considerable stress, but may also be welcomed with enthusiasm as it presents new opportunities.

Those families that do experience stress or hardship from a family member working on a FIFO basis may seek support from welfare agencies, particularly when associated with domestic violence or separation. Families moving to a new area and experiencing domestic problems will be more likely to seek professional support as they are less likely to have access to friends or family.

Families attracted to Alpha or nearby towns in search of work with any of the proposed new mines or their contractors, will be vulnerable if they do not gain meaningful employment in a relatively short period of time. Accommodation costs are very high and in Alpha and many nearby towns will be difficult to obtain. This may result in a higher number of people seeking accommodation support from welfare agencies. Temporary unemployment may also add stress to family relationships and could lead to domestic violence or marriage breakups, again adding to the demand on welfare agencies in the area.

7.9 Impacts on Disadvantaged Groups

The project is expected to have minimal direct impact on disadvantaged groups, with the exception of rising housing prices in Bowen and Alpha. The cumulative impacts of multiple resource projects is expected to lead to higher house prices and increased rental costs across a broader area, including Emerald, Mackay and Rockhampton. The price of locally produced goods and services is also expected to increase (due primarily to higher labour costs). The increase in the cost of living may disadvantage low income earners, in particular single parents and aged pensioners.

Disadvantaged groups may also be adversely impacted as a result of population growth, without an expansion of public infrastructure and services, particularly facilities that cater for the aged and disabled. The State Government is, however, expected to provide additional funding for infrastructure and services in the Bowen and Galilee Basins, in response to high population growth and rapid economic development.

The Indigenous population is not expected to be disadvantaged by the China First Coal Project or the development of multiple resource projects in the region. To the contrary, many employment opportunities will be created, and substantial training provided to both the Indigenous and non-Indigenous community. Organisations such as the HiHo Group, established by Girudala, can play a key role in maximising the extent to which Indigenous people participate in and benefit from resource projects in Central Queensland.

As discussed in Sections 7.5 and 7.8, the development of multiple mines in the Alpha area could significantly increase the demand for welfare services. Welfare agencies are, however, already stretched to the limit in terms of their facilities, staff and resources. The cumulative impact of multiple resource projects will significantly add to the burden on these agencies and without additional resources could result in a decline in their ability to provide services to the growing population.

7.10 Summary of Impacts and Significance

A summary of the positive social impacts and their significance is presented in Table 11, both for the China First Coal Project and the cumulative effect of multiple resource projects.

Table 11: Summary of Positive Social Impacts and Significance

Impact	Impacted Parties	Timing	Project Significance			Cumulative Significance		
			L	C	I	L	C	I
Employment and training The project will generate an additional 3,000 jobs during construction and 4,000 jobs during operations (when including direct, indirect and induced employment) and provide training to many staff, including Indigenous employees.	Workers in Alpha, Emerald, Bowen, Clermont, Mackay, Rockhampton and Brisbane	Construction and operations	5	4	High	5	5	Extreme
Contracting and business opportunities The project will procure a range of local goods and services, benefiting businesses and contractors from Emerald, Bowen, Mackay and Clermont (some of which will establish bases and locate staff in Alpha).	Businesses in Emerald, Bowen, Mackay and Clermont	Construction and operations, increasing over time	4	3	Med	5	4	High
Personal income The project will increase average personal income levels of employees and contractors, although this is likely to contribute to greater income inequality.	Employees and contractors in Alpha, Emerald, Bowen, Mackay, Rockhampton and Brisbane	Construction and operations (increasing over time)	5	4	High	5	5	Extreme
Town infrastructure and services The project will generate an additional \$340 million in revenue annually for the State Govt. If some of this revenue is utilised for the development of Alpha, the community will benefit from improved transport and communication infrastructure and expanded social services.	Residents in Alpha and surrounding areas	Operations	2	3	Med	3	5	High

Impact	Impacted Parties	Timing	Project Significance			Cumulative Significance		
			L	C	I	L	C	I
Rural infrastructure Farmers in the vicinity of the mine will benefit from improved telecommunications, power and water supply (with the latter helping to overcome a major constraint to cattle production).	Farmers in the vicinity of the mine	Operations	5	3	Med	5	3	Med

Key: L = Likelihood (5= almost certain; 4=likely; 3=possible; 2=unlikely; 1=rare)
 C = Consequence (5=severe; 4=major; 3=moderate; 2=minor; 1=negligible)
 I = Impact (10=extreme; 8-9=high; 5-7=medium; 2-4=low)

A summary of the negative social impacts and their significance is presented in Table 12.

Table 12: Summary of Negative Social Impacts and Significance

Impact	Impacted Parties	Timing	Project Significance			Cumulative Significance		
			L	C	I	L	C	I
Higher cost of living Housing prices, rental costs and the costs of local goods and services are expected to rise. Shortages in accommodation and trade services are likely. Higher living costs are expected to particularly disadvantage low income groups (although increased employment provides opportunities to increase income levels).	Residents in Alpha, Barcaldine, Emerald, Bowen, Clermont, Mackay and Rockhampton	Construction and operations	4	3	Med	5	4	High
Disruption to cattle operations 3 properties will be acquired by Waratah Coal and around 40 additional properties will be directly impacted by the project, disrupting cattle operations, increasing labour requirements and potentially reducing output.	Property owners on the MLA and railway alignment	Construction and operations	5	2	Med	5	2	Med
Increased road traffic Traffic disruptions can be expected during project construction along the Capricorn Highway and roads crossing the railway (including the Bruce Highway). Increased traffic will also occur on the Alpha-Emerald and Alpha-Clermont roads during operations. This is a concern for the tourist industry and the safety of the grey nomads.	Road users and local councils	Construction and operations	5	2	Med	5	3	High
Increased demand on public infrastructure and services Population growth will increase the demand for public infrastructure and services (eg. power, water, garbage collection and processing, health, education, police, rural fire brigades, etc).	Barcaldine, Isaac, Whitsunday, Central Highland, Mackay and Rockhampton councils	Primarily during operations	4	3	Med	5	4	High
Increased demand on welfare services Population increase, including mine employees/contractors and their families, will increase the demand on welfare agencies and potentially lead to a reduction in the coverage or quality of welfare services provided.	Residents in Alpha, Barcaldine, Emerald and Bowen and other nearby towns	Construction and operations	3	3	Med	5	4	High
Erosion of community values If Alpha is not developed as proposed, the	Residents from	Operations	4	4	High	5	4	High

Impact	Impacted Parties	Timing	Project Significance			Cumulative Significance		
			L	C	I	L	C	I
town is likely to have a large, transient population and resemble a mining town, complete with a rise in drug and alcohol consumption, and may not capitalise on the development opportunity provided from multiple coal mines. In a town which aims to preserve its way of life, this may fuel resentment towards FIFO workers, and impact adversely on community values.	Alpha and surrounding areas							

Key: **L = Likelihood** (5= almost certain; 4=likely; 3=possible; 2=unlikely; 1=rare)

C = Consequence (5=severe; 4=major; 3=moderate; 2=minor; 1=negligible)

I = Impact (10=extreme; 8-9=high; 5-7=medium; 2-4=low)

Some of the positive and negative social impacts are interrelated and the actual outcome difficult to determine. For example:

- While the project will disrupt cattle operations and potentially reduce farm productivity, the railway provides an opportunity for some property owners to earn some off-farm income (eg. fire prevention), which could enhance the economic viability of these properties;
- While the project is expected to cause a rise in living costs, which will disadvantage low income groups, the project will generate several thousand jobs and is expected to reduce the level of unemployment;
- While the cost of goods and services may rise in Alpha, the town may eventually have a much wider range of commercial enterprises, reducing the need for residents to travel frequently to Barcaldine or Emerald to buy clothes, white goods, food items, toys, etc, and therefore reducing their cost of living; and
- While the project will increase the demand on public infrastructure and services, it will provide a substantial revenue stream to the national and state governments, and thereby provide the necessary funding for improvements to public infrastructure and services in the project area.

Following is a summary of the social and cultural area of influence; the impacts at different stages of the project; the key stakeholders impacted; and mine closure planning.

7.11 Conclusions

The four mines proposed for the Alpha area are expected to produce around 120 Mt of coal per annum. This compares to 190 Mt of coal produced throughout Queensland in 2008/9, and is indicative of the scale of benefits that will be provided to Queensland and Australia once these mines reach full production. The Galilee Basin, however, is a rich pastoral area, steeped in history, and is increasingly dependent on tourism. The development of mining in an area with minimal previous mining history will cause irreversible change to the physical landscape and the social fabric of towns and communities in the vicinity of the mine and much of the railway.

Research in the Bowen Basin indicates that coal mining results in a range of both positive and negative social impacts. However, the number of coal mines near a town, and the reliance on FIFO or DIDO workers, appear to be key factors determining the extent of social impacts.¹⁰³ This does not auger well for Alpha, a small town of 350 people with an expressed desire to maintain its rural lifestyle and not become a mining town.

While the development of four coal mines in the vicinity of Alpha provides a unique opportunity for Alpha and surrounding communities to benefit from sustainable and socially acceptable development, these benefits will only be realised if mine development is accompanied by carefully prepared and effectively coordinated development plans and strategies.

The main impact of the China First Coal Project in the Belyando area will occur as a result of the railway, while the main impact of the project in the Bowen area will occur as a result of the expansion of facilities

¹⁰³ Petkova, Lockie, Rolfe and Ivanova, 2009.

and capacity at Abbot Point. While the social impact of the project in the Belyando and Bowen areas will be far less than in the Alpha area, the same broad conclusion can be drawn: the potential benefits resulting from cumulative resource projects will only be realised if mine, rail and port development is accompanied by carefully prepared and effectively coordinated development plans and strategies. This is reflected in the mitigation strategies outlined in Section 8.

Social and cultural area of influence

In terms of the project impacting on communities, the social and cultural area of influence will include the towns and nearby residents of Alpha, Jericho, Barcaldine, Emerald, Clermont, Blackall, Tambo, Collinsville, Bowen, Mackay and Rockhampton. Alpha is likely to be the most impacted community.

Impacts at different stages of the project

While project construction will create several thousand additional jobs and substantially boost wage levels in Central Queensland, these will be overshadowed by the operational phase when some 4,000 additional jobs are created as a result of the project. This will boost wages by \$750 million annually. Within Central Queensland, the positive economic impact will benefit employees, many of whom are located in Mackay and Rockhampton, and contractors, who will initially reside in Emerald, Bowen, Mackay and other centres. Over time, increased benefit may be provided locally, as local people take positions in the mine and, if Alpha is developed, contractors locate to Alpha.

Key affected stakeholders

The main project stakeholders include the Commonwealth and State Governments, the Barcaldine, Central Highlands, Isaac, Whitsunday and Blackall-Tambo Regional Councils, employees, contractors, property owners and the local communities adjacent or near project facilities. Other stakeholders include service providers in Alpha, Bowen and nearby towns/cities, the proponents of other resource projects near Alpha, and the other users of the Abbot Point facilities.

8. MITIGATION STRATEGIES

8.1 Development of Alpha

This Section should be read in conjunction with Section 7.2.6 (Develop Supporting Infrastructure) in the Economic Impact Assessment for the China First Project.

The local community sees mining as an opportunity to improve services and provide employment opportunities. However, they wish to retain their rural lifestyle rather than see Alpha become a mining town. Balanced and managed growth, perhaps resulting in a town like Clermont, is no doubt more preferable than a larger mining town such as Moranbah. However, for balanced and managed growth to occur, the surrounding mines will need to accommodate the majority of the 4,000 direct mine employees in purpose-built workforce camps. Most mine employees will therefore need to be engaged on a FIFO basis.

If Alpha is developed as proposed by the Barcaldine Regional Council, it will be an attractive location for families to live. Improvements to health and education services and the provision of day care facilities will help attract families to Alpha. This in turn will enable the spouse of mine workers to enter the local workforce and minimise staff shortages in the public and private sector. Developing Alpha will therefore stimulate local employment, including jobs outside the mining industry, and provide an opportunity for young people to remain in Alpha rather than seek employment in the cities. Providing jobs outside the mining industry is important, both to help diversify the economy and maximise employment (as many people will not want to, or be unable to work 12 hour shifts on a 7 day roster).

While the number of contractors living in Alpha may rise over time, the initial (substantial) development of Alpha will facilitate a large influx of contractors (and their families) within a short period of time. This will substantially increase the number of people living in Alpha and justify an expansion of many public and private sector services, including the school, health facilities, banking, stores, improved power and water supply and the installation of sewerage. The development and expansion of Alpha would substantially raise income levels, increase the range and quality of services available, and provide opportunities for training and skills development.

If Alpha is not developed as planned, far fewer contractors will locate to Alpha, and while some contractors will be based in both Alpha and Jericho, few contractors are likely to move into the district on a permanent

basis, and very few families are likely to be attracted to the area. Under such a scenario, any improvements in public infrastructure and services will be more modest, commercial development will be limited, and issues such as alcohol and drug abuse are likely to be more common (stemming from single men with high income levels living together with few entertainment outlets). Furthermore, the Alpha and Jericho communities are likely to become disenchanted with mining due to perceived lost opportunities. This may impact adversely on their sense of community and community cohesion.

The proposal to develop Alpha is therefore seen as an appropriate course of action for the State Government and Barcaldine Regional Council. The initial estimate of the cost to develop Alpha is from \$120 million to \$150 million. Although only a rough estimate, it represents 44% of the average royalty that is expected to be paid to the Queensland Government in one year from the China First Coal Project, or 15% of the royalties from all four mines near Alpha in one year. The development cost for Alpha is not therefore regarded as excessive but the financing of the proposal needs to be resolved.

The sooner Alpha is developed the sooner contractors can establish a base in Alpha. Any delay will mean contractors from further afield are initially engaged to provide goods and services, which will make it harder for local contractors to 'get a foot in the door'.

A number of steps will be required for the proposed development of Alpha to occur, including:

- Agreement on financing arrangements and project management;
- The preparation of a fully costed development plan;
- The procurement and re-zoning of land in the vicinity of Alpha and Alpha's air strip;
- The appointment of a project manager (who should report to the Barcaldine Regional Council); and
- Legislative changes to support the above.

The development plan for Alpha should not only include the air strip, water, power, sewerage, roads, residential and industrial land and telecommunications, but commercial facilities, social services and houses for public servants. A detailed implementation schedule is required, along with annual cost estimates.

The proposed development of Alpha presents a number of challenges, not the least, effective coordination. As noted by the Local Government Association of Queensland the rapid growth experienced in Queensland's four key resource regions and the emergence of the CSG industry has resulted in significant multiple cross government agency initiatives and proposals, that, from local government's perspective, lack coordination, clear channels of reporting and monitoring of outcomes against their stated objectives.¹⁰⁴

8.2 Employment

This Section should be read in conjunction with Section 7.2.1 (Address Skills Shortage) in the Economic Impact Assessment for the China First Project.

Recruitment and training

Rail and port employees will be expected to reside in the Bowen area, while the mine workforce will predominantly be engaged on a FIFO basis. Preference will be given during both the construction and operational phases to employees from the local region, Queensland and Australia, in that order, before foreign workers. In addition, the project will undertake training and engage apprentices as part of their normal operations. As discussed further in the Economic Impact Assessment, it is recommended that MCC and contractors engage with agencies such as Construction Skills Queensland, the Mining Industry Skills Centre, the Department of Employment and Training and appropriate training organisations, and maximise the use of existing training and skills development programs available, including:

- Construction Skills Queensland Industry Support Program;
- Heartbeat Project;
- Mining Industry Skills Strategy;
- Work Readiness Program;
- Resources Industry Training Fund; and

¹⁰⁴ Local Government Association of Queensland, 2010, p.23.

- Australian Government Skills and Training Programs.

To assist local job seekers acquire skills and mine employment, it is recommended that Waratah Coal instigate a local apprenticeship scheme. This will help young people find work and stay in the local area. It will also reduce the potential for Waratah Coal to employ young people after they have completed their apprenticeships with other local employers (and which may, over time, result in fewer local employers being willing to train apprentices).

To facilitate local employment and help reduce traffic and issues relating to fatigue, it is recommended that Waratah Coal provide bus services between the mine site and any nearby regional centre that contains a sufficient number of employees. At present, the most likely location to contain sufficient employees to warrant a bus service is between the mine and Emerald.

As a member of the Queensland Resources Council (QRC), Waratah Coal should actively promote female employment. QRC members believe that women should be given every opportunity to share in the opportunities provided by the industry. Women also represent a largely untapped source of skilled workers and their participation is an important element in ensuring the industry can attract the skilled workforce that it requires, especially as we face the prospect of a renewed surge in demand for our mineral resources.

QRC members are committed to:

- Providing a cultural and physical environment where women feel comfortable, included and valued;
- Employment and promotion practices that encourage female participation and retention;
- Investigating innovative solutions for the provision of flexible working arrangements, (for men and women), which take into account such matters as employees' child care commitments and work/life balance, while also meeting operational requirements; and
- Promoting and monitoring the effectiveness of attraction and retention initiatives for women and Equal Employment Opportunity policies.¹⁰⁵

Waratah Coal should also liaise with organisations such as the HiHo Group, established by Girudala, in an attempt to maximise the extent to which Indigenous people participate in and benefit from the project.

It is recommended that Waratah Coal develops a human resource management plan. This will combine many of the above recommendations and will aim to enhance the skill levels of the workforce and local communities. Key aspects of the plan should include:

- Female employment strategies;
- Indigenous employment strategies;
- Training strategies;
- Retention strategies;
- Induction training (see below);
- Strategies to minimise the impact of local recruitment on local businesses and government services; and
- Monitoring and reporting.

Waratah Coal (or their contractor, MCC) should monitor and report on the origin and gender of all employees, including the employees of contractors, and the training provided to employees and the employees of contractors. Reporting on employment and training should occur throughout the construction and operating phases and be summarised and included in the Social Impact Management Plan and annual updates.

Accommodation

On-site accommodation and recreation facilities at the mine site will need to cater for the diverse workforce, including separate accommodation areas for women and culturally appropriate facilities for Indigenous staff and overseas workers. This may include separate recreational areas, alcohol free areas, etc.

Housing and financial services

¹⁰⁵ Queensland Resources Council, 2009.

To help mine employees find accommodation in Bowen, and for mine employees who wish to reside permanently in Alpha, it is recommended that Waratah Coal considers a housing scheme to enable employees to purchase or build a house at a discounted price. Under the scheme, Waratah Coal could, as an example, meet inspection costs, pay for the house and deduct a proportion of salary until the house and interest charges have been met. The Company could offer discounted interest charges or a housing deduction for each year of service with the company, but in return, have an employee working on a long-term basis and residing in the local area. The scheme could also be offered for those employees residing in, or wishing to reside in the Mackay or Rockhampton areas.

In addition to the above, Waratah Coal may consider providing advice from financial experts to employees in areas such as superannuation, housing or other financial investments. The advice could be made available to employees who, for example, have stayed with the company for a period of three years. This would reward employees and should improve the financial benefits they receive.

Induction training

Induction training will be mandatory for all employees and contractors and will include familiarisation with project facilities; local Indigenous cultures and values; occupational health and safety including emergency response strategies and contracts; employment conditions, employee entitlements and the grievance mechanism (described in Section 8.8). It is also recommended that Waratah Coal develop a Code of Conduct that defines acceptable and unacceptable behaviour, and this be included in the induction training. Furthermore, it is recommended that the Code of Conduct be reviewed periodically with selected members of the local communities (in particular Alpha and Bowen) to ensure it remains relevant and meets community expectations. The Code of Conduct aims to minimise behaviour which might otherwise diminish family or community values, and help ensure Waratah Coal is seen as a respectable and valuable part of the local communities.

8.3 Contracting

This Section should be read in conjunction with Section 7.2.3 (Develop the Local Supply Chain) in the Economic Impact Assessment for the China First Project.

While project construction must contain at least 50% Chinese content (in line with the debt financing agreement with the Export-Import Bank of China), MCC should give preference during both the construction and operational phases of the project to local contractors and local suppliers whenever possible. In particular, this should translate to clear preference to contractors and suppliers based in Alpha, Bowen and nearby centres (Barcaldine, Collinsville, Clermont, Emerald, Blackall and Tambo) rather than those organisations based in South East Queensland or further afield.

As described in the Economic Impact Assessment, the China First Coal Project could:

- Inform local businesses of the goods and services that are expected to be required;
- Assist local businesses tender for goods and services contracts (including for example, specifying the required standards); and
- Assist local businesses establish networks with major suppliers or relationships with service providers to increase locally available goods and services.

Waratah Coal should liaise with groups like HiHo in an attempt to nurture Indigenous business opportunities. Waratah Coal (or their contractor, MCC) should also monitor and report on the origin of all contractors and the source of goods and services (by value). Reporting on contractors and the source of goods and services should occur throughout the construction and operating phases and be summarised and included in the Social Impact Management Plan and annual updates.

8.4 Cattle Operations

Those properties that shall continue operations on the MLA will be compensated financially for the inconvenience caused by mining operations. In addition, these and some neighbouring properties will be provided with reliable power and water supplies. Properties impacted by the railway line will be compensated financially, and assistance provided to help minimise the impact on cattle operations. This may entail the realignment of fences, provision of additional watering points, the construction of new farm roads and relocation or provision of new cattle yards. Waratah Coal will negotiate with individual property owners impacted by the project prior to the construction period.

It is recommended that Waratah Coal works with each property owner to minimise disruptions and reduce impacts on cattle productivity as a result of the mine and railway.

The added risk of fire, as a result of the railway, is a major concern to property owners. Measures will be implemented to reduce the risk of fire. As part of the Environmental Management Plan, Waratah Coal will implement strategies to minimise the risk of fire and report on these strategies on a regular basis. The fire reduction strategies may provide some opportunity for property owners to earn some off-farm income (eg. vegetation control within the railway corridor).

8.5 Road Traffic

Measures to minimise disruptions and accidents caused by the increase in the number of heavy vehicles, particularly during the construction period, have been outlined in the EIS (Transport Study). The strategies and recommendations include:

- Minimising disruption from trains by building overpasses or underpasses wherever possible (and if necessary, boom gates over level crossings);
- Reducing local traffic in the Alpha area by having a predominantly FIFO (self-contained) workforce;
- Providing a bus service between Emerald and the mine site for employees, should a sufficient number of employees reside in Emerald (or other nearby centres, eg. Barcaldine, Longreach or Charters Towers);
- Preparing traffic management plans in consultation with the Department of Transport and Main Roads, the relevant regional councils and Queensland Police Service, which are expected to:
 - Ensure local residents are made aware of planned traffic movements during construction;
 - Minimise large loads during peak traffic times or when school buses will be operating;
 - Provide adequate signage (including mobile safety vehicles),
 - Assemble trucks in convoys and pulling off the road at designated areas to allow traffic to pass; and
- Include safe driving and fatigue management strategies for employees and contractors who will drive to or from work.

8.6 Emergency Services

A strategy should be prepared to enhance the capability of emergency services in the Alpha area. The strategy should compare the existing capacity of emergency services with that required in the future, given the projected population of Alpha and the numbers of FIFO, DIDO and Bus In-Bus Out (BIBO) employees of all four proposed mines.

The strategy should be closely linked with the proposed development of Alpha (mitigation strategy #1) and should be prepared in close consultation with council and emergency service providers in Alpha and surrounding towns (Jericho, Barcaldine, Emerald, Clermont, Blackall and Tambo), as employees and contractors are expected to drive in from any of these locations, and therefore impact on emergency services in these locations. The strategy should outline infrastructure, equipment, staff and operating cost requirements. The strategy could, for example, include the expansion of Alpha Hospital, a full-time fully-staffed Ambulance Service, and increased resources and personnel for the Police.

Ideally, the four mines at Alpha would provide an initial financial contribution to meet infrastructure and equipment (which could be offset against subsequently royalty payments, as proposed in mitigation strategy #1), plus an additional annual contribution to help meet salary and operating costs of additional emergency services. However, any recommendation for an annual contribution towards the cost of emergency services needs to be weighed up against the proposed Mining Resources Rents Tax (MRRT), if or when it is introduced.

8.7 Welfare Services

A strategy should be prepared to enhance the capacity of welfare agencies in the Alpha area. Emerald and to a lesser extent, Barcaldine, are bases for welfare agencies, and generally provide services to the Alpha

area on a periodic (visiting) basis. The strategy must specify the needs to meet Alpha's future population, and that of the workforce and dependents residing in nearby towns (Jericho, Barcaldine and Emerald in particular). The strategy should be linked to the proposed development of Alpha (mitigation strategy #1) but extend beyond Alpha's boundaries to reflect the wider impact of the mines being developed. The strategy should be prepared in close consultation with council and existing welfare agencies and should include infrastructure, equipment, staff and operating cost requirements. The strategy could include a multi-purpose welfare facility in Alpha, to accommodate difference welfare agencies and their needs, and include a number of adjoining flats to accommodate visiting care providers.

Ideally, the four mines at Alpha would provide an initial financial contribution to meet infrastructure and equipment (which could be offset against subsequently royalty payments), plus an additional annual contribution to help meet salary and operating costs of additional welfare services. As before, any recommendation for an annual contribution towards the cost of welfare services needs to be weighed up against the proposed MRRT, if or when it is introduced.

8.8 Community Support

Financial contributions from mining companies are increasingly seen as an important element of the social license to operate, but need to be coordinated with council, local residents and the other resource companies. A study by the World Bank and IFC stated that the achievement of sustainable development by the local communities should be the overarching goal of the relationship between mining companies and the communities. Furthermore, a regional development plan is an effective tool on which to base discussions between companies, communities and government, and to focus mining company development support.¹⁰⁶ This conclusion was reflected in the recommendations arising from the Mining, Minerals and Sustainable Development (MMSD) project, which suggested a shared development vision could be articulated using a Community Sustainable Development Plan, which should be based on the community's concept of how the mine can best contribute to achieving its social, environmental and economic goals. Furthermore, the plan should provide the fundamental framework for relationships among the company, the community, the government and any other parties.¹⁰⁷

Drawing on international development lessons, financial contributions from the China First Coal Project should be coordinated with council, local residents and the other mining companies. Furthermore, local development plans may appropriately be prepared for the Alpha area (and would preferably involve all local mining projects) and the Bowen area (and preferably involve, at a minimum, the main users of Abbot Point's facilities).

The first step, in both instances, is to reach agreement with local stakeholders that a joint planning and development effort is preferential. The second step is to prepare local development plans for the Alpha and Bowen areas as existing plans do not reflect the current mine or port proposals or provide sufficient detail to prioritise or plan community contributions. Development plans should be prepared by council, with input by the State Government, local communities and the mining companies. Plans should help prioritise infrastructure and services and provide a baseline from which social and economic impacts from multiple resource projects can be monitored and assessed on a cumulative basis.

It is premature to predict the type or level of community support that Waratah Coal might provide in the future when four large mines are likely to be developed in the Alpha area; there is uncertainty over the Barcaldine Regional Council's development proposal for Alpha; two alternative railway lines are being assessed; and uncertainty remains over the development of Abbot Point (both in terms of the infrastructure being developed and the users of that infrastructure). The proposed MRRT adds another level of uncertainty when trying to predict Waratah Coal's future level of support for local communities. However, Waratah Coal is committed to supporting local communities, and regards local community development plans as an effective way to allocate assistance, and a basis from which to maintain effective dialogue with a range of stakeholders. It is therefore recommended that contributions provided by Waratah Coal are planned in coordination with local councils, local residents and other resource companies. At Bowen, this means building on the Bowen/Abbot Point Accommodation and Community Infrastructure Study conducted by DIP and the Whitsunday Regional Council. At Alpha, it means building on the Galilee Basin Economic

¹⁰⁶ World Bank and IFC, 2002 (pp.16-17).

¹⁰⁷ International Institute for Environment and Development and World Business Council for Sustainable Development, 2002 (p.xxviii).

and Social Impact Study undertaken by the State Government, Barcaldine Regional Council, Central Highlands Development Corporation and Central Western Queensland Remote Area Planning and Development Board, and any other relevant studies conducted.

8.9 Mine Closure Planning

In the past, mine closure planning has focused on environmental rehabilitation, and many companies have commenced mine-closure planning a few years prior to actual closure. While social and economic issues are now more commonly considered as part of the mine closure planning process, mine closure should not trigger new planning initiatives. Instead, community development plans should be developed from the onset and aim to capitalise on the opportunities provided by mining for social and economic development, taking into consideration at all times, the need to prepare the community for life after mining. Although planned mine closure may be several decades away, community development plans should always consider alternative economic activities, as a downturn in commodity prices may result in a reduction in mine output, or could result in either temporary or long-term closure.

It is likely that Alpha will have at least four coal mines in relatively close proximity, and these mines will operate well into the second half of the current century. However, all are coal mines, and a downturn in coal prices, or a shift away from non-renewable energy sources, could impact significantly on all mines, far in advance of the planned closure timeframes.

In addition to the long-term risk factors associated with coal mining, there is another advantage in planning for alternative economic activities. A diversified community, such as Clermont, provides a more attractive location for families to live, and long-term residents will help build and subsequently sustain the local economy. Mining towns, such as Blackwater and Dysart, are less likely to attract long term residents and their existence is heavily dependent on mining.

As discussed in Section 8.6, an effective way to achieve sustainable local development is for mining companies to contribute to local development plans. These plans should be prepared as early as possible by government, residents and companies, and articulate how the companies can effectively contribute to the plans. The plans should at all times promote a diversified economy and consider life without mining. A common request from Alpha residents who were consulted during the course of the SIA is for balanced development rather than the establishment of a mining town. It is therefore recommended that mine closure planning be initiated from the onset as part of a local community development planning exercise that involves government, residents and mining companies.

8.10 Stakeholder Engagement

Waratah Coal's stakeholder engagement strategies for the EIS process have been documented separately (refer EIS, Community Engagement Report). It will be important for Waratah Coal to maintain and build on the relationships developed to date, as effective stakeholder engagement will help raise the awareness of the project and improve its transparency; it will provide avenues for discussing issues before they become problems; and it aims to involve stakeholders as project participants rather than observers.

Each of the above recommendations (Sections 8.1 to 8.7) must be supported by effective stakeholder engagement if they are to be successful. Furthermore, effective stakeholder engagement is required to achieve a social licence to operate. Waratah Coal will therefore engage with a range of stakeholders throughout the construction, operational and mine closure phases of the project:

- Participating in local community development planning processes (as discussed under Sections 8.1 and 8.6);
- Inviting input to environmental and social monitoring programs;
- Liaising with Indigenous groups in regard to cultural heritage; and
- Continuing its existing information hotline (1800 number) and establishing a grievance mechanism for employees, contractors and external stakeholders.

The existing information hotline has been well publicised by Waratah Coal and provides an excellent opportunity for interested parties to access information on the project or voice a complaint. This number should be continued. In addition, a formal grievance mechanism should be established, with all grievances and Waratah Coal's response to each grievance fully documented. Additional details on the proposed stakeholder engagement strategy will be outlined in the Social Impact Management Plan.

8.11 Options for Additional Government Support

In addition to the above recommendations, which directly involve the China First Coal Project, government may wish to consider the following.

Housing

Additional in-migration and higher incomes will contribute to the housing shortage and rising accommodation prices in Central Queensland. This will adversely impact on low income groups, and possibly result in over-crowding or an increase in the number of homeless people. Another credit squeeze, as witnessed during the Global Financial Crisis, would reduce the number of new housing starts and add to the housing shortage and price rises. This is not necessarily a problem that is limited to Central Queensland or to mining areas, as housing affordability (an index which combines house prices, income levels and interest rates) neared a record low in the June 2010 quarter across most capital cities and regional areas in Australia.¹⁰⁸

To help address the housing shortage it is recommended that:

- Government ensures adequate residential land is available for development;
- A range of housing options are included in new residential developments; and
- Finance is made available for new residential developments.

The State Government could consider the establishment of additional Urban Development Areas in locations such as Alpha, Bowen and Emerald: locations in which the projected population increase will be relatively large when compared to the existing housing market. As discussed in Section 5.5, UDAs for Blackwater, Moranbah and Roma have been included under the State Government's Resource Town Housing Affordability Program; they enable the fast-tracking of planning decisions; and result in the delivery of affordable land and homes in a shorter timeframe. UDAs should form part of local development plans, as described in Sections 8.6 and 8.7, and for Alpha, should be coordinated with the proposed town development (mitigation strategy #1).

Emergency health services

Emergency health services for the Bowen Basin are provided from Rockhampton, Mackay and Townsville. At present, these centres would be called on for accidents or other emergencies in the Galilee Basin, although the response time would be significantly longer due to the additional distance travelled. Given the expansion of mining and CSG in the Bowen and Surat Basins, and development of mining in the Galilee Basin, it may be an appropriate time to establish an emergency response capacity further west. Emerald, which is central to all three basins, appears to be the logical option, and having a helicopter equipped for medical emergencies, based at Emerald, would substantially reduce the emergency response time. Funding could be available under the State Government's Sustainable Resource Communities Policy, which includes funding of \$100 million for improving local infrastructure (including emergency services facilities).

Training facilities

Trade training is currently provided in Emerald, but accommodation for trainees is limited and alternative accommodation expensive. Some years previously the local council considered an idea to expand the on-site accommodation at Emerald's TAFE campus. The idea was not supported at the time, but with Emerald now playing a greater role in the region, and set to play a key role in the development of the Galilee Basin, it might be useful to reconsider the proposal. The development of on-site accommodation at Emerald's TAFE campus would help increase the number of local apprentices and other trainees gaining trade skills, and therefore help address skills shortages and help young people stay in the region. Funding could be available under the State Government's Sustainable Resource Communities Policy, which includes funding of \$100 million for improving local infrastructure (including trade training centres), and would facilitate the training of local apprentices, as recommended in mitigation strategy #2.

While each of the above recommendations are specifically directed to State Government, Waratah Coal could provide support, particularly for housing and emergency services, should these be included and prioritised in the local development plans for Alpha or Bowen (as described in Sections 8.1 and 8.6).

¹⁰⁸ Reported in Business Spectator, 19 August 2010. Refer www.businessspectator.com.au/

8.12 Summary of Recommendations

Waratah Coal has already made commitments to give preference to employees, local suppliers and contractors from the local region, the rest of Queensland and elsewhere in Australia before overseas. In addition, Waratah Coal has indicated that it will provide those properties on the mining lease, and their neighbours, with power and improved telecommunications, and water should there be any reduction in the quality or quantity of water as a result of mine operations.¹⁰⁹ It is also recommended that:

1. Local development plans are prepared by council, with input from State Government, local residents and Waratah Coal, for Alpha and Bowen;
2. Waratah Coal ensures that infrastructure built in the vicinity of Alpha, and in particular power, water, airport and communication infrastructure, meets the growing needs of the local community;
3. Community infrastructure and any subsequent local development contributions from Waratah Coal are planned in coordination with local councils, local residents and other resource companies;
4. Mine closure planning is incorporated in the local development plans from the onset;
5. Waratah Coal works with each property owner to minimise disruptions and reduce impacts on cattle productivity as a result of the mine and railway;
6. Waratah Coal considers a housing scheme for staff for who wish to reside in Alpha or the Bowen area;
7. Waratah Coal provides a bus service between the mine site and any nearby regional centre that contains a sufficient number of mine employees;
8. Waratah Coal develops a human resource management plan, aiming to enhance the skill levels of the workforce and local communities, ensures opportunities for Indigenous employment and maximises the number of apprentices from the region;
9. Waratah Coal monitors and reports on the origin and gender of all employees (including the employees of contractors) and the number and composition of staff trained, on an annual basis;
10. Waratah Coal develops a Code of Conduct for employees and contractors;
11. Waratah Coal provides assistance to local businesses to ensure they are aware of potential contracting opportunities and understand the required contract standards and conditions;
12. Waratah Coal contributes, as appropriate, to (i) a business development strategy, (ii) an emergency services strategy and (iii) a welfare service strategy, for the mine area. While focusing on Alpha, each strategy needs to consider the impacts of mine development on neighbouring towns, including Jericho, Barcaldine, Emerald, Clermont, Blackall and Tambo. The strategies should be prepared in cooperation with impacted councils and local businesses, emergency service providers and existing welfare agencies, with input from Waratah Coal, Hancock Coal and AMCI. The strategies should be linked to the proposed development of Alpha (recommendations 1 and 2), subsequent community contributions (recommendation 3) and support for local businesses (recommendation 11).
13. Waratah Coal monitors and reports on the origin of all contractors and the source of goods and services (by value), on an annual basis; and
14. Waratah Coal continues its existing information hotline (1800 number) and establishes a grievance mechanism for staff, contractors and other parties.

Discussion of proposed mitigation strategies

The proposed development of Alpha has been discussed at public meetings and has received strong support. It also reflects the intent of recommendations proposed by the Local Government Association of Queensland, to establish a long term funding stream for local government to support infrastructure projects in resource regions.¹¹⁰

While the other recommendations have not generally been presented by Waratah Coal in public meetings, several are based on suggestions received during the public consultation process (in particular, recommendations #5, #6, #7 and #11).

¹⁰⁹ Commitments made by Phil McNamara (then General Manger of Waratah Coal) during the initial public consultations in Jericho and Alpha (8 June 2010).

¹¹⁰ Local Government Association of Queensland, 2010, p. 49.

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Attachment 1

TERMS OF REFERENCE

The following text has been extracted from the TOR for the Environmental Impact Statement for the Galilee Coal Project (northern export facility).¹¹¹ Section numbers corresponds to those presented in the TOR for the EIS.

4.1 Social

The social impact assessment (SIA) should be conducted in consultation with the DIP Social Impact Unit. Matters to be considered include the social and cultural area, community engagement, a social baseline study, a workforce profile, potential impacts and mitigation measures and management strategies.

It is recognised that the nature of the assessment may need to take into account the relative profiles of the mine, the rail corridor, and the port facilities, and their respective workforces for construction and operation.

4.1.1 Social and cultural area

The SIA should define the project's social and cultural area of influence taking into account:

- the potential for social and cultural impacts to occur at the local, district, regional and state level
- the location of other relevant proposals or projects within the local area, district, or region
- the location and types of physical and social infrastructure, settlement and land use patterns
- the social values of the local area, district, and region that might be affected by the project (e.g. including integrity of social conditions, visual amenity and liveability, social harmony and wellbeing, and sense of community)
- Indigenous social and cultural characteristics such as native title rights and interests and cultural heritage.

4.1.2 Community engagement

Consistent with national and international good practice and industry commitment to the concept of a 'social licence to operate', the proponent should engage at the earliest practical stage with likely affected parties to discuss and explain the project, and to identify and respond to issues and concerns regarding social impacts. Consequently, this section of the SIA should detail the community engagement processes through which the proponent conducted open and transparent dialogue with stakeholders with an interest in the project's planning and design stages and future operations including affected local authorities and relevant state authorities. Engagement processes will involve consideration of social and cultural factors, customs and values, including relevant consideration of linkages between environmental, economic, and social impact issues is required.

4.1.3 Social baseline study

In concert with a community engagement process, a targeted baseline study of the people residing in the project's social and cultural area is required to identify the project's critical social issues, the potential adverse and positive social impacts, and assist in the development of mitigation and benefit strategies and measures to address these issues. The social baseline study should be based on qualitative, quantitative, and participatory methods, be supplemented by community engagement processes, and reference relevant data contained in local and state government publications, reports, plans, guidelines and documentation, including regional plans and, where available, community plans.

The social baseline study should describe and analyse a range of demographic and social statistics as determined relevant to the project's social and cultural area including:

- major population trends/changes that may be occurring irrespective of the project
- total population (the total enumerated population for the social and cultural area and the full time equivalent transient population), 18 years and older
- estimates of population growth and population forecasts resulting from the proposal

¹¹¹ Refer Coordinator-General, May 2009.

- family structures
- age and gender distributions
- education, including schooling levels
- health and wellbeing measures
- cultural and ethnic characteristics
- the Indigenous population including age and gender
- income including personal and household
- labour force by occupation and industry
- housing costs (monthly housing repayments (percentage of dwellings in each category), and weekly rent (percentage of dwellings in each category), housing tenure type and landlord type, household and family type
- housing availability and affordability: the rental market (size, vacancy rate, seasonal variations, weekly rent by percentage dwellings in each category); the availability and typical costs of housing for purchase, monthly housing repayments by percentage dwellings in each category; and the availability of social housing
- disability prevalence
- the social and economic index for areas, index of disadvantage—score and relative ranking
- crime, including domestic violence
- any other indicators determined through the community engagement process as relevant.

The social baseline study should take account of current social issues such as details of:

- the social infrastructure including community and civic facilities, services and networks that help individuals, families, groups and communities meet their social needs, maximise their potential for development, and enhance community wellbeing (for definition see *South East Queensland Plan 2005-2026 Implementation Guidelines* No. 5: www.dip.qld.gov.au/resources/guideline/Implementationguideline5.pdf)
- settlement patterns including the names, locations, size, history and cultural aspects of settlement in the social and cultural area
- the identity, values, lifestyles, vitality, characteristics and aspirations of communities in the social and cultural area, including Indigenous communities
- land use and land ownership patterns including rural properties, farms, croplands and grazing areas including on-farm activities near the proposed activities, the number of properties directly affected by the project, and the number of families directly and indirectly affected by the project including Indigenous traditional owners and their families, property owners, and families of workers either living on the property or workers where the property is their primary employment
- use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism, aquaculture, and Indigenous cultural use of flora and fauna (e.g. bush tucker and medicinal plants).

4.1.4 Workforce profile

The SIA should include a profile of the workforce which describes:

- the number of personnel to be employed, the skills base of the required workforce and the likely sources (i.e. local, regional or overseas) for the workforce during the construction and operational phases for each component of the project
- the estimated number of people to be employed during construction and operation, and arrangements for their transport to and from the project areas, including proposed use of regional or charter air services
- estimates should be provided according to occupational groupings and variations in the workforce numbers for the duration of the project and show anticipated peaks in worker numbers during the construction period.

The SIA should provide an outline of recruitment schedules and policies for recruitment of workers, addressing recruitment of local and non-local workers including Indigenous workers and people with a disability

If re-locatable camp sites are to be used to accommodate the workforce, details on the number, size, location (shown on a map), management, proximity to the construction site, and typical facilities for these sites should be provided. Information should outline any local government or other regulatory approvals required for establishment and operation of such camps, such as for building, health and safety and waste disposal purposes.

The section should provide information in relation to the location of other major projects or proposals under study within the social and cultural area together with workforce numbers.

4.1.5 Potential Impacts

This section of the SIA should assess and describe the type, level, and significance of the project's social impacts (both beneficial and adverse) on the local and cultural area, based on outcomes of community engagement processes and the social baseline study. Furthermore, it should:

- describe and summarise outcomes of community engagement processes including the likely response of the affected communities, including Indigenous people
- include sufficient data to enable affected local and state authorities to make informed decisions about how the project may affect their business and plan for the continuing provision of social infrastructure in the project's social and cultural area. If the project is likely to result in a significant increase in the population of the area, then the proponent should consult the relevant management units of the state authorities, and summarise the results of the consultations.
- Address and describe the impacts including direct, indirect and secondary impacts resulting from any existing projects and the proposed project including the important cause and effect relationships between human activities and resources, ecosystems, traditional Indigenous lands, and human communities. An assessment of the size, significance, and likelihood of these impacts should be considered at the local and regional level taking into account the following possible issues:
 - key population/ demographic shifts; disruptions to existing lifestyles, the health and social wellbeing of families and communities; social dysfunction including alcohol and drugs, crime, violence, and social or cultural disruption due to population influx
 - the needs of vulnerable groups including women, children and young people, the aged and people with a disability
 - Indigenous peoples including cultural property issues
 - local, regional and state labour markets, with regard to the source of the workforce. This information is to be presented according to occupational groupings of the workforce. In relation to the source of the workforce, information is required as to whether the proponent, and/or contractors, are likely to employ locally or through other means and whether there are initiatives for local employment business opportunities.
 - proposed new skills and training related to the project including the occupational skill groups required and potential skill shortages anticipated
 - comment on how much service revenue and work from the project (e.g. provisioning, catering and site maintenance) would be likely to flow to the project's social and cultural area, particularly if a fly-in, fly-out workforce is proposed
 - impacts of both construction and operational workforces, their families, and associated contractors on housing and accommodation availability and affordability, and land use and land availability. The capability of the existing housing stock, including rental accommodation, to meet any additional demands created by the project is to be discussed at a local, regional and state scale including direct impacts on Indigenous people.

The SIA should include an evaluation of the potential cumulative social impacts resulting from the project including an estimation of the overall size, significance and likelihood of those impacts. Cumulative impacts in this context are defined as the additional impacts on population, workforce, accommodation, housing, and use of community infrastructure and services, from the project, and other proposals for resource

development projects in the area which are publicly known or communicated by DIP, if they overlap the proposed project in the same time frame as its construction period.

4.1.6 Mitigation measures and management strategies

For identified social impacts, social impact mitigation strategies and measures should be presented to address:

- the recruitment and training of the construction and operational workforces and the social and cultural implications this may have for the host community, including if any part of the workforce is sourced from outside the social and cultural area
- housing and accommodation issues, in consultation with relevant local authorities and state government agencies, with proposals for accommodating the project workforce and their families that avoid, mitigate or offset any short and medium term adverse effects on housing affordability and availability, including the rental market, in the social and cultural area
- the demographic changes in the profile of the region and the associated sufficiency of current social infrastructure, particularly health and welfare, education, policing and emergency services
- the adequate provision of education, training and employment for women, people with a disability, and Indigenous peoples.

The proponent should describe any consultation about acceptance of proposed mitigation strategies and how practical management and monitoring regimes are proposed to be implemented.

A draft social impact management plan should be presented that promotes an active and ongoing role for impacted communities and local authorities through the project life cycle from planning through to approvals, construction, operations and decommissioning. The draft plan should cover:

- assignment of accountability and resources
- updates on activities and commitments
- mechanisms to respond to public enquiries and complaints
- mechanisms to resolve disputes with stakeholders
- periodic evaluation of the effectiveness of community engagement processes
- practical mechanisms to monitor and adjust mitigation strategies and action plans
- action plans to implement mitigation strategies and measures.

Attachment 2

LIST OF PEOPLE MET

Name	Position	Organisation
Bob Gannon	Director, Significant Projects Coordination	DIP, Brisbane
Bruce Edwards	Project Manager, Significant Projects Coordination	DIP, Brisbane
Freya Walton	Social Impact Assessment Unit	DIP, Brisbane
Kate Gubesch	Social Impact Assessment Unit	DIP, Brisbane
Lyn Hopewell	Social Impact Assessment Unit	DIP, Brisbane
Damian Pearson	Director, Central Region Planning Group	DIP, Rockhampton
Don Cook	Manager – Planning, Central West Region	DIP, Rockhampton
Stephanie Keedy	Planner, Central West Region	DIP, Rockhampton
Sandra Hobbs	General Manager	Central Highlands Development Corp
Phil Brumley	General Manager – Governance and Community Services	Central Highlands Regional Council
Janice Moriarty	Manager – Community Development	Central Highlands Regional Council
Alexis Alyward	Strategic Planner	Central Highlands Regional Council
Rob Chandlers	Mayor	Barcaldine Regional Council
Des Howard	CEO	Barcaldine Regional Council
Rob Bauer	Executive Manager, Alpha Area	Barcaldine Regional Council (Alpha)
Rob Williams	Councillor and Chair, Clermont Preferred Futures Strategy	Isaac Regional Council
Anne Smith	Sustainable Resource Communities Liaison	DEEDI, Moranbah
Leticia Navegantes	Community Social Planner	Isaac Regional Council
Amanda Pugh	Strategic Planner	Whitsunday Regional Council
Jan Ross	Mayor	Blackall-Tambo Regional Council
Ken Timms	CEO	Blackall-Tambo Regional Council
Louise Campbell	Economic Development Officer	Blackall-Tambo Regional Council
Sharlene Jones	Centre Manager	Anglicare Central Qld (Emerald)
Deb Dziewicki	Family Support Worker	Anglicare Central Qld (Emerald)
Peter Clark (<i>by phone</i>)	Youth Development	Anglicare Central Qld (Barcaldine)
Maureen Mattson	Family Accommodation Support Worker	Anglicare Central Qld (Emerald)
Lorna Hicks	Community Worker	Emerald and District Social Development Association Inc.
Kim Hurle	Family Counsellor	Lifeline Community Care Qld (Emerald)
Allanna Mayfield	Secretary	Mining Communities Alliance (Collinsville)
Bob Carstairs	Consultant – Galilee Basin Cumulative Impact Assessment	Economic Associates

The above list does not include those people attending the public or council meetings held in June 2010; those people engaged in an informal manner; staff of Waratah Coal; or consultants involved in the preparation of the EIS for Waratah Coal.

Attachment 3
COMPARISON AGAINST TASKS SPECIFIED IN THE TOR

Tasks Specified in Section 4.1 (Social) of the TOR	Reference in the SIA / Additional Comments
<p>The social impact assessment (SIA) should be conducted in consultation with the DIP Social Impact Unit. Matters to be considered include the social and cultural area, community engagement, a social baseline study, a workforce profile, potential impacts and mitigation measures and management strategies.</p> <p>It is recognised that the nature of the assessment may need to take into account the relative profiles of the mine, the rail corridor, and the port facilities, and their respective workforces for construction and operation.</p>	<p>Meetings were held with DIP (Brisbane) on 16 March and 28 July and with DIP (Rockhampton) on 12 July 2010.</p> <p>The study area included the districts and local level governments in which the mine, railway corridor and port facilities are to be located, and information is presented separately for the mine, railway and port areas and mine, railway and port workforces.</p>
<p>4.1.1 Social and cultural area</p> <p>The SIA should define the project's social and cultural area of influence taking into account:</p> <ul style="list-style-type: none"> • the potential for social and cultural impacts to occur at the local, district, regional and state level • the location of other relevant proposals or projects within the local area, district, or region • the location and types of physical and social infrastructure, settlement and land use patterns • the social values of the local area, district, and region that might be affected by the project (e.g. including integrity of social conditions, visual amenity and liveability, social harmony and wellbeing, and sense of community) • Indigenous social and cultural characteristics such as native title rights and interests and cultural heritage. 	<p>The study area is described in Section 1.3 and the social and cultural area of influence summarised in Section 7.10.</p>
<p>4.1.2 Community engagement (Waratah Coal)</p> <p>Consistent with national and international good practice and industry commitment to the concept of a 'social licence to operate', the proponent should engage at the earliest practical stage with likely affected parties to discuss and explain the project, and to identify and respond to issues and concerns regarding social impacts. Consequently, this section of the SIA should detail the community engagement processes through which the proponent conducted open and transparent dialogue with stakeholders with an interest in the project's planning and design stages and future operations including affected local authorities and relevant state authorities. Engagement processes will involve consideration of social and cultural factors, customs and values, including relevant consideration of linkages between environmental, economic, and social impact issues is required.</p>	<p>A summary of the community engagement process is described in Section 1.3. A more detailed description is presented in the EIS (Community Consultation Report).</p>
<p>4.1.3 Social baseline study</p> <p>In concert with a community engagement process, a targeted baseline study of the people residing in the project's social and cultural area is required to identify the project's critical social issues, the potential adverse and positive social impacts, and assist in the development of mitigation and benefit</p>	<p>The social baseline study is presented as Section 2.</p> <p>A wide range of publications and other information sources have been utilised in preparation of the social baseline. Each publication and information source has been referenced. The SIA</p>

<p>Tasks Specified in Section 4.1 (Social) of the TOR</p>	<p>Reference in the SIA / Additional Comments</p>
<p>strategies and measures to address these issues. The social baseline study should be based on qualitative, quantitative, and participatory methods, be supplemented by community engagement processes, and reference relevant data contained in local and state government publications, reports, plans, guidelines and documentation, including regional plans and, where available, community plans.</p> <p>The social baseline study should describe and analyse a range of demographic and social statistics as determined relevant to the project's social and cultural area including:</p> <ul style="list-style-type: none"> • major population trends/changes that may be occurring irrespective of the project • total population (the total enumerated population for the social and cultural area and the full time equivalent transient population), 18 years and older • estimates of population growth and population forecasts resulting from the proposal • family structures • age and gender distributions • education, including schooling levels • health and wellbeing measures • cultural and ethnic characteristics • the Indigenous population including age and gender • income including personal and household • labour force by occupation and industry • housing costs (monthly housing repayments (percentage of dwellings in each category), and weekly rent (percentage of dwellings in each category), housing tenure type and landlord type, household and family type • housing availability and affordability: the rental market (size, vacancy rate, seasonal variations, weekly rent by percentage dwellings in each category); the availability and typical costs of housing for purchase, monthly housing repayments by percentage dwellings in each category; and the availability of social housing • disability prevalence • the social and economic index for areas, index of disadvantage—score and relative ranking • crime, including domestic violence • any other indicators determined through the community engagement process as relevant. <p>The social baseline study should take account of current social issues such as details of:</p> <ul style="list-style-type: none"> • the social infrastructure including community and civic facilities, services and networks that help individuals, families, groups and communities meet their social needs, maximise their potential for development, and enhance community wellbeing (for definition see South East Queensland Plan 2005-2026 Implementation Guidelines No. 5: 	<p>has incorporated information from local and state government publications, including regional and community plans, where available.</p> <p>The social baseline study presents information on the following:</p> <ul style="list-style-type: none"> • population trends/changes: Section 2.1 • transient population: Section 2.2 • population growth: Section 2.1 (also refer Section 7.2) • family structures: Section 2.2 • age and gender distributions: Section 2.2 • education: Section 2.8 • health and wellbeing: Sections 2.7 and 2.11 • cultural and ethnic characteristics: Section 2.3 • the Indigenous population including age and gender: Sections 2.2 and 2.3 • income: Section 2.5 • labour force: Section 2.5 • housing costs: Section 2.6 • rental costs and affordability: Section 2.6 • social housing: Section 2.10 • disability prevalence: Section 2.7 • the social and economic index for areas: Section 2.11 • crime, including domestic violence: Sections 2.9 and 4.5
<p>The social baseline study should take account of current social issues such as details of:</p> <ul style="list-style-type: none"> • the social infrastructure including community and civic facilities, services and networks that help individuals, families, groups and communities meet their social needs, maximise their potential for development, and enhance community wellbeing (for definition see South East Queensland Plan 2005-2026 Implementation Guidelines No. 5: 	<p>The social baseline study presents information on the following:</p> <ul style="list-style-type: none"> • the social infrastructure: Section 2.10 • settlement patterns: Sections 1.3 and 2.3 • the identity, values, lifestyles, vitality, characteristics and aspirations of communities:

Tasks Specified in Section 4.1 (Social) of the TOR	Reference in the SIA / Additional Comments
<p>www.dip.qld.gov.au/resources/guideline/Implementationguideline5.pdf</p> <ul style="list-style-type: none"> settlement patterns including the names, locations, size, history and cultural aspects of settlement in the social and cultural area the identity, values, lifestyles, vitality, characteristics and aspirations of communities in the social and cultural area, including Indigenous communities land use and land ownership patterns including rural properties, farms, croplands and grazing areas including on-farm activities near the proposed activities, the number of properties directly affected by the project, and the number of families directly and indirectly affected by the project including Indigenous traditional owners and their families, property owners, and families of workers either living on the property or workers where the property is their primary employment use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism, aquaculture, and Indigenous cultural use of flora and fauna (e.g. bush tucker and medicinal plants). 	<p>Sections 2.3, 5.2 and 6.2</p> <ul style="list-style-type: none"> land use and land ownership patterns: Sections 2.4 and 7.4 use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism, aquaculture, and Indigenous cultural use of flora and fauna: Section 2.4
<p>4.1.4 Workforce profile</p> <p>The SIA should include a profile of the workforce which describes:</p> <ul style="list-style-type: none"> the number of personnel to be employed, the skills base of the required workforce and the likely sources (i.e. local, regional or overseas) for the workforce during the construction and operational phases for each component of the project the estimated number of people to be employed during construction and operation, and arrangements for their transport to and from the project areas, including proposed use of regional or charter air services estimates should be provided according to occupational groupings and variations in the workforce numbers for the duration of the project and show anticipated peaks in worker numbers during the construction period. 	<p>Refer Section 3, including:</p> <ul style="list-style-type: none"> employment numbers and skill levels: Section 3.1 transportation: Sections 3.1 and 3.2 occupations and variations in workforce numbers: Sections 3.1
<p>The SIA should provide an outline of recruitment schedules and policies for recruitment of workers, addressing recruitment of local and non-local workers including Indigenous workers and people with a disability</p>	<p>Refer Section 3.2</p>
<p>If re-locatable camp sites are to be used to accommodate the workforce, details on the number, size, location (shown on a map), management, proximity to the construction site, and typical facilities for these sites should be provided. Information should outline any local government or other regulatory approvals required for establishment and operation of such camps, such as for building, health and safety and waste disposal purposes.</p>	<p>Refer Section 3.3 (although additional details are to be prepared during project planning, including specific locations of temporary camps).</p>
<p>The section should provide information in relation to the location of other major projects or proposals under study within the social and cultural area together with workforce numbers.</p> <p>4.1.5 Potential Impacts</p>	<p>Refer Section 1.3</p>

<p>Tasks Specified in Section 4.1 (Social) of the TOR</p>	<p>Reference in the SIA / Additional Comments</p>
<p>This section of the SIA should assess and describe the type, level, and significance of the project's social impacts (both beneficial and adverse) on the local and cultural area, based on outcomes of community engagement processes and the social baseline study. Furthermore, it should:</p> <ul style="list-style-type: none"> • describe and summarise outcomes of community engagement processes including the likely response of the affected communities, including Indigenous people • include sufficient data to enable affected local and state authorities to make informed decisions about how the project may affect their business and plan for the continuing provision of social infrastructure in the project's social and cultural area. If the project is likely to result in a significant increase in the population of the area, then the proponent should consult the relevant management units of the state authorities, and summarise the results of the consultations. • Address and describe the impacts including direct, indirect and secondary impacts resulting from any existing projects and the proposed project including the important cause and effect relationships between human activities and resources, ecosystems, traditional Indigenous lands, and human communities. An assessment of the size, significance, and likelihood of these impacts should be considered at the local and regional level taking into account the following possible issues: <ul style="list-style-type: none"> ○ key population/ demographic shifts; disruptions to existing lifestyles, the health and social wellbeing of families and communities; social dysfunction including alcohol and drugs, crime, violence, and social or cultural disruption due to population influx ○ the needs of vulnerable groups including women, children and young people, the aged and people with a disability ○ Indigenous peoples including cultural property issues ○ local, regional and state labour markets, with regard to the source of the workforce. This information is to be presented according to occupational groupings of the workforce. In relation to the source of the workforce, information is required as to whether the proponent, and/or contractors, are likely to employ locally or through other means and whether there are initiatives for local employment business opportunities. ○ proposed new skills and training related to the project including the occupational skill groups required and potential skill shortages anticipated ○ comment on how much service revenue and work from the project (e.g. provisioning, catering and site maintenance) would be likely to flow to the project's social and cultural area, particularly if a fly-in, fly-out workforce is proposed ○ impacts of both construction and operational workforces, their families, and associated contractors on housing and accommodation availability and affordability, and land use and land availability. The capability of the existing housing stock, including rental accommodation, to meet any additional demands created by the project is to be discussed at a local, regional and state scale including direct impacts on Indigenous people. <p>The SIA should include an evaluation of the potential cumulative social impacts resulting from the</p>	<p>The type, level and significance of social impacts are described in Section 7. The assessment includes:</p> <ul style="list-style-type: none"> • outcomes of community engagement processes: Section 6 • social infrastructure: Section 7.5 • direct, indirect and induced (or secondary) impacts: Section 7.10 • cause and effect relationships between human activities and resources (Section 7.4), ecosystems (Section 7.4), traditional Indigenous lands (Section 7.9) and human communities (Sections 7.7 and 7.8): <ul style="list-style-type: none"> ○ key population/demographic shifts: Section 7.2 ○ the needs of vulnerable groups: Section 7.9 ○ Indigenous people: Section 7.9 ○ labour markets: Sections 7.1 and 7.2 ○ housing accommodation availability and affordability: Section 7.6 <p>Cumulative impacts have been addressed and incorporated throughout the SIA.</p>

Tasks Specified in Section 4.1 (Social) of the TOR	Reference in the SIA / Additional Comments
<p>project including an estimation of the overall size, significance and likelihood of those impacts. Cumulative impacts in this context are defined as the additional impacts on population, workforce, accommodation, housing, and use of community infrastructure and services; from the project, and other proposals for resource development projects in the area which are publicly known or communicated by DIP, if they overlap the proposed project in the same time frame as its construction period.</p>	
<p>4.1.6 Mitigation measures and management strategies</p> <p>For identified social impacts, social impact mitigation strategies and measures should be presented to address:</p> <ul style="list-style-type: none"> • the recruitment and training of the construction and operational workforces and the social and cultural implications this may have for the host community, including if any part of the workforce is sourced from outside the social and cultural area • housing and accommodation issues, in consultation with relevant local authorities and state government agencies, with proposals for accommodating the project workforce and their families that avoid, mitigate or offset any short and medium term adverse effects on housing affordability and availability, including the rental market, in the social and cultural area • the demographic changes in the profile of the region and the associated sufficiency of current social infrastructure, particularly health and welfare, education, policing and emergency services • the adequate provision of education, training and employment for women, people with a disability, and Indigenous peoples. 	<p>Social impact mitigation strategies are presented in Section 8:</p> <ul style="list-style-type: none"> • recruitment and training: Section 8.2 • housing and accommodation: Section 8.1, 8.2 and 8.11 • social infrastructure: Sections 8.1 and 8.6, 8.7 and 8.8 • education, training and employment for women and Indigenous peoples: Section 8.2
<p>The proponent should describe any consultation about acceptance of proposed mitigation strategies and how practical management and monitoring regimes are proposed to be implemented.</p> <p>A draft social impact management plan should be presented that promotes an active and ongoing role for impacted communities and local authorities through the project life cycle from planning through to approvals, construction, operations and decommissioning. The draft plan should cover:</p> <ul style="list-style-type: none"> • assignment of accountability and resources • updates on activities and commitments • mechanisms to respond to public enquiries and complaints • mechanisms to resolve disputes with stakeholders • periodic evaluation of the effectiveness of community engagement processes • practical mechanisms to monitor and adjust mitigation strategies and action plans • action plans to implement mitigation strategies and measures. 	<p>Refer Section 8.12</p> <p>The SIMP will be prepared as a separate document following approval of the SIA. The SIA includes a description of the main social impacts and proposed mitigation strategies, which shall form the basis of the SIMP.</p>

Mike Finlayson: SIA Experience

Mike has 25 years experience as a development specialist in Australia, Asia and the Pacific. Over the past 12 years Mike has focused on the social impact assessment of large-scale resource projects and has recent experience in Australia, Papua New Guinea, China, the Solomon Islands and the Philippines:

- In 2008 Mike provided advice and participated in the conduct of an SIA for the development of a large bauxite mine on traditionally-owned land in the Cape York area;
- Between 2007 and 2010 Mike led a team conducting an SIA of an oil and gas project in Gulf and Central Provinces of PNG;
- During 2008 and 2009 Mike worked with Ok Tedi Mining Limited to prepare socio-economic data for mine-impacted communities; prepare a social and economic report (as an attachment to the 2009 mine closure plan); and provide advice on social and economic monitoring;
- In 2009 Mike conducted an SIA of a 10,000 ha expansion of oil palm in the province of West New Britain, PNG;
- In early 2009 Mike provided advice to the University of Inner Mongolia (China) on the design and conduct of an SIA to examine the impact of mining and petroleum operations on traditional herding activities;
- In 2007 Mike conducted an economic analysis of the proposed Tampakan copper and gold mine in the Southern Philippines; and
- In 2009 and 2010 Mike conducted social audits of oil palm operations in Papua New Guinea, Indonesia and the Solomon Islands.

Mike aims to maximise sustainable development through the promotion of effective and practical solutions in large-scale resource industries while ensuring high quality outcomes in line with current international best practice. Mike is a member of the International Association for Impact Assessment (IAIA) and is familiar with, and has conducted studies in accordance with the Equator Principles and Global Reporting Initiative.

Mike is also a director of Project Design & Management Pty Ltd (PDM), a company specialising in development assistance and humanitarian aid, with a focus on the Asia and Pacific regions. For further information on Project Design & Management or a copy of Mike's curriculum vitae please refer to www.consultpdm.com