TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

17.1 INTRODUCTION

This chapter examines the beneficial and adverse economic impacts of the project anticipated to occur in the context of the mine development's local and regional economies (i.e. proximal to the mine site), as well as the State and national economies as relevant. The chapter also discusses and outlines Waratah Coal's commitments to mitigation and enhancement strategies as well as monitoring regimes to be established to ensure regional economic values are enhanced or, at least, maintained once the Project commences.

The economic impact assessment was prepared in mid-2010. While some aspects of the project have changed (Waratah Coal now intend to utilise the proposed Multi-Cargo Facility rather than construct a stand-alone jetty), the general findings and conclusions are still considered relevant and provide a reasonable assessment of the project's economic impact on the local, regional, state and national economies.

17.1.1 SCOPE OF WORKS

Section 5 (Impacts on the State and local economies and management of impacts) of the ToR broadly requires:

- description of the local and regional economies that may be affected by the project;
- analysis of the potential economic impacts of the project at the regional, state and national level, as appropriate to the scale of the project, including impacts on small regional communities. This should include:
  - assessment of direct economic impacts, including property values, industry output, employment and factor incomes;
  - assessment of forgone industry output resulting from the project, forgone opportunities and impacts to households, and indirect impacts likely to flow to other industries;
  - an outline of strategies for local participation in the project, in terms of local supply of goods and services as well as local employment strategies, as well as strategies to respond to government policy (where relevant);
  - assessment of the impact of the project on current and future management processes for adjacent properties during construction and / or operation; and
  - developing and proposing mitigation and enhancement strategies and monitoring regimes to minimise disruption or alleviate costs resulting from the project.

17.1.2 PROJECT COSTS, REVENUES AND TIMINGS

The project will result in considerable investment in, and revenue generation from, developing the above infrastructure to extract high value coal resources for sale to export markets.

Construction of the mine, railway and coal stockyard and transfer infrastructure is estimated to take approximately three years to complete, indicatively requiring approximately $8.3 billion in capital investment. Direct employment for construction activities is estimated to average approximately:

- 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

The construction workforce does not include the workforce for constructing the multi-cargo facility at Abbot Point, which will be undertaken by North Queensland Bulk Ports Corporation.

First coal exports are targeted for July 2013, with full export capacity of 40 Mtpa expected to be reached in 2015 / 16, generating an estimated $4.6 billion in export revenues per annum Direct employment during operation is estimated to be approximately:

- 1,900 employees for operation of the mine;
- 460 employees for operation / maintenance of the rail infrastructure, and operation of the port facilities; and

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.

In addition to the mine, rail line and port facilities, a range of utilities infrastructure will be developed by third parties to support the Project and the overall development of the Galilee Basin, including a new 275 kV transmission line from the Lillyvale substation to the mine (to be owned by Powerlink), fibre optic telecommunications infrastructure and, potentially, a new water pipeline from Moranbah to the Galilee Basin (currently being investigated by SunWater).

Waratah Coal also propose to invest in developing local road infrastructure as well as upgrading the Alpha airstrip for the transportation of FIFO workers to the mine site.

17.2 ASSESSMENT METHOD

The economic impact assessment was prepared in mid 2010. While some aspects of the project have changed (such as the intended use of the proposed multi-cargo facility rather than the construction of a separate jetty by Waratah Coal), the general findings and conclusions are deemed to remain relevant and provide a reasonable assessment of the project's economic impact on the local, regional, state and national economies.

17.2.1 EXISTING ECONOMIC ENVIRONMENT

The existing economic environment section describes the existing economic profile of the EIS Study Area, and provides a baseline for assessment of the significance of potential impacts of the proposed development. This section has been developed based on data and information sourced from:

- the ABS, Queensland Treasury, Office of Economic and Statistical Research (OESR), the former DIP, Real Estate Institute of Queensland (REIQ), Residential Tenancies Authority and other public sector agencies;
- consultations with local businesses and peak industry bodies;
- private sector data providers and company websites; and
- AEC group propriety economic models (see Appendix 24).

Economic data collected during this stage is used to develop economic models, and forms the 'base scenario' against which the project's impacts are assessed.

17.2.2 ECONOMIC IMPACT MODELLING

Economic impacts of the project have been modelled using a Computable General Equilibrium (CGE) modelling technique. CGE modelling estimates the net increase in demand generated by the project after taking into account resource constraints. An example would be the necessity to pay higher wages to attract workers from other businesses or regions in a tight labour market. By taking into account resource constraints CGE modelling is considered to provide a more realistic assessment of the impacts of a project of the scope and scale of the project on the regional and State economies, given the currently constrained labour market in the region, and more broadly throughout Queensland. A detailed description of CGE modelling is provided in Volume 5, Appendix 24.

A labour mobility constraint has been applied within the CGE modelling, with labour mobility assumed to be motivated by real wage differentials. Labour mobility assumptions include both inter-industry labour movement within regions as well as inter-regional and interstate labour movement. Labour is assumed to not be sufficiently mobile to remove these real wage differentials (i.e. in order to attract labour, real wages will increase).

17.2.3 ECONOMIC IMPACT ASSESSMENT

This section uses information from the existing economic environment and the economic impact modeling to analyse, assess and discuss the economic impacts of the project in relation to the ToR.

The economic impact assessment includes input and information from:

- consultation with business, industry and key industry organisations to identify potential economic impacts;
- interpretation of modelling output in the context of the regional and state economies, and analysis of other, non-quantified changes to the economic environment; and
- evaluation of the significance of impacts in relation to economic resources.

17.2.4 DEVELOPMENT OF MITIGATION AND ENHANCEMENT STRATEGIES

This section identifies strategies to avoid, reduce or mitigate the negative economic impacts and enhance and facilitate the capture of the positive impacts identified in previous sections. This includes the development of strategies for local participation in the project. Key elements of strategies will include:

- defining and describing the objectives of the task / strategy;
- identifying practical methods to protect and / or enhance economic values; and
- identifying practical monitoring measures.

17.3 EXISTING ECONOMIC ENVIRONMENT

17.3.1 EIS STUDY AREA

Three catchments have been defined to establish and analyse the existing economic environment of the Project and surrounding regions, the Mine Catchment, Abbot Point Catchment and Broader Service Area. Combined, these three catchments represent the Study Area for examining the regional economic impacts of the Project.

The Mine Catchment consists of the BRC and CHRCs, while the Abbot Point Catchment consists of the Whitsunday Regional Council (WRC). The Broader Service Area catchment has been developed to encompass the regional centres adjacent to the mine and export point sites from which workers and supplies will be sourced, and is made up of the Isaac Regional Council, Mackay Regional Council and Rockhampton Regional Council. Figure 1 shows the different catchment boundaries used in the economic assessment.

The BRC Mine Catchment includes the mine site and as such this catchment represents the region that will be most keenly impacted by mining activity. A brief summary of the main economic characteristics of the mine catchment is presented in Section 17.3.1. It should be noted; however, that the broader service area has a well developed mining support services sector, and will likely supply inputs to mining activity in the Mine Catchment.

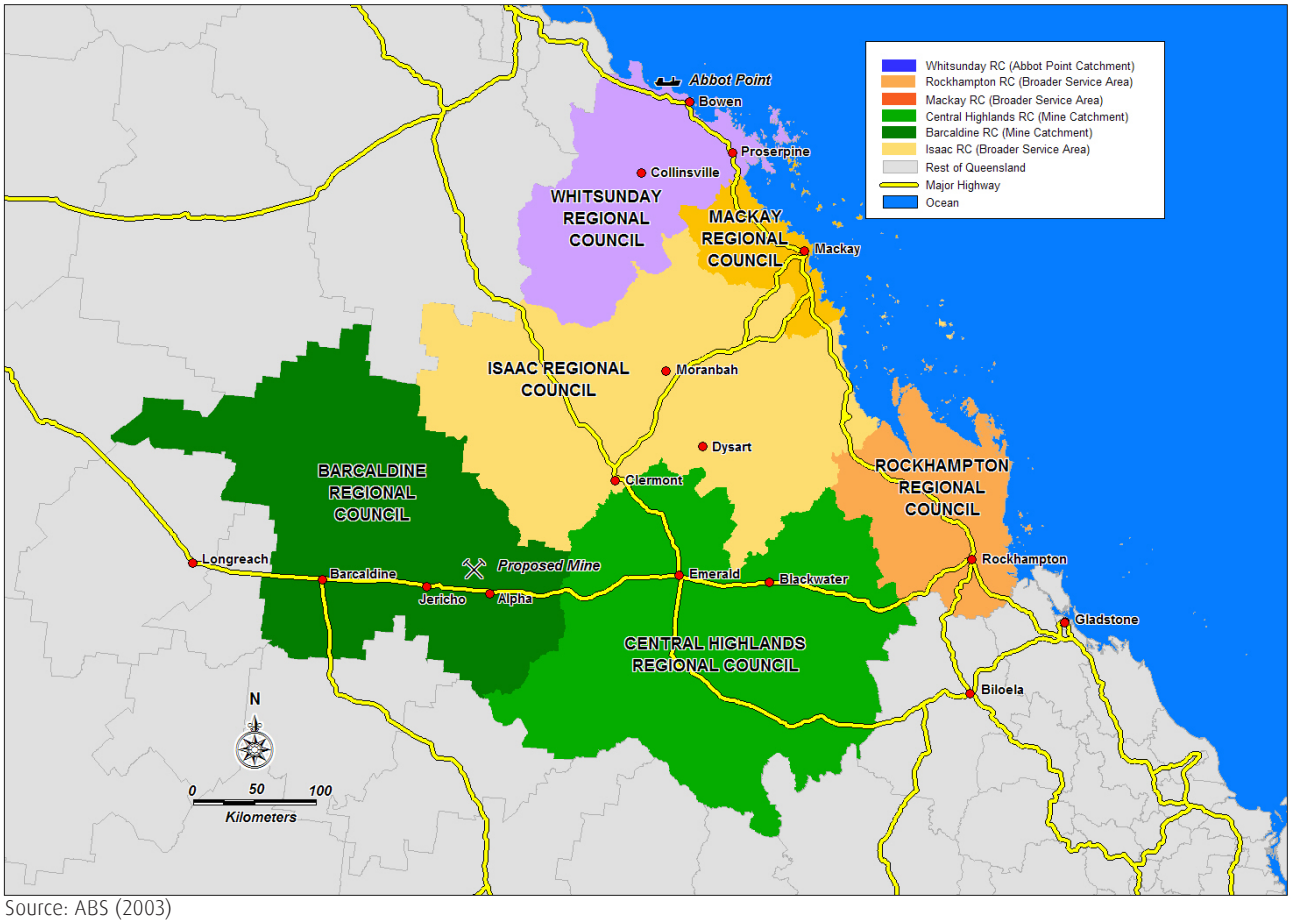
17.3.1.1 Mine Catchment

17.3.1.1.1 Barcaldine Local Government Area

Barcaldine Local Government Area (LGA) recorded a population of 3,376 residents in 2009, representing a decline in population of approximately 0.4 % per annum on average since 2004. Without the project, Barcaldine LGA's population is projected to grow marginally through to 2031, to 3,435 residents.

The main industry in the region is agriculture, in particular beef cattle, contributing 22.0 % of the local economies GRP and 34.8 % of employment. Other key industries include transport, postal and warehousing, and public administration and safety.

Figure 1. Map of the Project Study Area and Catchments



Source: ABS (2003)

17.3.1.1.2 Central Highlands Local Government Area

There were an estimated 30,403 residents in the Central Highlands LGA in 2009, representing growth of 2.5 % per annum on average since 2004. The Central Highlands LGA population is projected to grow by 2.0 % per annum on average through to 2031, to 46,872 residents.

Central Highlands LGA's economy is highly reliant on the mining industry, contributing 65.8 % of local GRP and 26.5 % of employment. Agriculture is also a significant employer in the region, accounting for 11.2% of total employment.

17.3.2 SUMMARY OF KEY ECONOMIC VALUES

Key values of the economic environment of the Mine Catchment include:

- high reliance on the mining and resources sector: The significance of the mining industry to the BRC mine catchment area is highlighted by one in five workers being employed in the sector. Projects such as the Galilee Coal Project (Northern Export Facility) will act to maintain the industry's prominence and provide long-term employment opportunities for the region's existing mining workforce;
- trade exposure: Because of the dependence on coal and coal seam gas in the region, fluctuations in global resource markets can potentially have grave impacts on the region, with little support from other industries to soften a downturn in the resources sector;
- high proportion of FIFO / DIDO workers in regional centres: Mining operations in the BRC Mine Catchment area utilise a high proportion of FIFO / DIDO workers from other regions, particularly major centres such as Emerald, Mackay and Rockhampton, affecting the Mine Catchment area's ability to retain workers, incomes and associated population and household-based services (e.g. retail, community and recreational services). Population growth over the next twenty years in the Mine Catchment is expected to exceed the Queensland average, but the region is not expected to witness the increases of some of the newer mining areas in Queensland as a high proportion of labour is expected to continue to be sourced from major population centres in FIFO / DIDO arrangements; and
- competition for labour: Recent activity throughout the Central Queensland Region highlights that demand for mining commodities and higher wages paid by the mining sector has drawn labour from other sectors, particularly agriculture, which the region has historically been heavily involved with.

17.3.3 DESCRIPTION OF THE ECONOMY

17.3.3.1 Population Size and Growth

Over the past five years the Mine Catchment area has recorded average annual growth of 2.2 % per annum, reaching 33,779 in 2009. This was below the Queensland average annual population growth of 2.6 % over the five year period. In contrast to recent years, between 2009 and 2031 the Mine Catchment is predicted to grow at a higher average annual rate of 1.8 %, compared to the Queensland figure of 1.6 %, equating to an additional 16,528 people between 2009 and 2031. The historical and projected population for the BRC Mine Catchment and Queensland are shown in Table 1.

17.3.3.2 Gross Regional Product

17.3.3.2.1 Size of the Economy

Gross Regional Product (GRP) for the BRC Mine Catchment area was estimated at $5.0 billion for 2008 / 09, which represented 2 % of Queensland's Gross State Product (GSP). Over the four years to 2008 / 09, the catchment's GRP grew at an average annual rate of 4.1 %.

Table 1. Historical and projected population, 2004 to 2031

CATCHMENT	2004	2009	2031	% AV. ANN. GROWTH 2004-09	% AV. ANN. GROWTH 2009-31
BRC Mine Catchment	30,304	33,779	50,307	2.2%	1.8%
Queensland	3,900,910	4,425,103	6,273,885	2.6%	1.6%

Sources: ABS (2010a), Queensland Treasury (2008)

The BRC Mine Catchment area showed lower average annual growth rates in GRP compared to Queensland, which recorded an average annual rate of 8.6 %. Estimates of GRP and GSP for the Mine Catchment and Queensland are presented in Table 2.

17.3.3.3 Structure of the Economy

Mining is by far the largest contributor to the Mine Catchment's economy, representing 63.4 % of GRP in 2008 / 09. The industry contribution to GRP percentage for 2008 / 09 is shown in Table 3.

Table 2. Gross State / Regional product at factor cost, 2008 / 09

GROSS STATE / REGIONAL PRODUCT	MINE CATCHMENT	QUEENSLAND
2008 / 09 ($M)	$4,966.4	$243,903.0
2005 / 06 ($M)	$4,407.1	$190,518.0
Av. Ann. % Growth (2005 / 06 – 2008 / 09)	4.1%	8.6%

Source: AEC*group*

Table 3. Percent industry contribution to GRP, 2008 / 09

INDUSTRY	MINE CATCHMENT	QUEENSLAND
Agriculture, forestry and fishing	3.3%	2.0%
Mining	63.4%	9.5%
Manufacturing	1.6%	7.8%
Electricity, gas, water and waste services	0.5%	1.9%
Construction	5.8%	7.6%
Wholesale trade	1.3%	4.5%
Retail trade	2.1%	5.4%
Accommodation and food services	1.1%	2.9%
Transport, postal and warehousing	4.5%	6.7%
Information media and telecommunications	0.3%	2.2%
Financial and insurance services	0.6%	6.4%
Rental, hiring and real estate services	0.9%	3.2%
Professional, scientific and technical services	0.9%	4.6%
Administrative and support services	0.5%	2.0%
Public administration and safety	1.7%	5.2%
Education and training	1.2%	3.7%
Health care and social assistance	0.9%	5.7%
Arts and recreation services	0.1%	0.6%
Other services	1.2%	2.1%
Ownership of Dwellings	3.9%	7.7%
Total Gross Value Added	*95.8%*	*91.6%*
Taxes less Subsidies	4.3%	8.4%
Gross State / Regional Product	100.0%	100.0%
Gross State / Regional Product ($M)	$4,966.4	$243,903.0

Source: AEC*group*.

Note: Gross Value Added (GVA) is equal to Gross State / Regional Product (GSP / GRP) minus taxes plus subsidies.

Table 4. Labour force and employment, December quarter 2009

CATCHMENT	LABOUR FORCE	PARTICIPATION RATE	UNEMPLOYED PERSONS	UNEMPLOYMENT RATE	CHANGE 2008-09[(A)]
Mine Catchment	20,286	81.8%	548	2.8%	0.8%
Queensland	2,354,400	68.7%	127,400	5.4%	1.7%

Sources: OESR (2010)

Notes: (a) The % figures presented in this column are percentage point change figures

Table 5. Employment by industry, 2006

INDUSTRY	MINE CATCHMENT	QUEENSLAND
Agriculture, forestry and fishing	13.4%	3.5%
Mining	24.0%	1.7%
Manufacturing	3.5%	10.1%
Electricity, gas, water and waste services	0.6%	1.1%
Construction	9.9%	9.0%
Wholesale trade	2.6%	4.1%
Retail trade	8.3%	12.0%
Accommodation and food services	5.9%	7.1%
Transport, postal and warehousing	4.6%	5.1%
Information media and telecommunications	0.4%	1.5%
Financial and insurance services	1.1%	3.0%
Rental, hiring and real estate services	1.3%	2.2%
Professional, scientific and technical services	2.6%	5.9%
Administrative and support services	1.8%	3.1%
Public administration and safety	5.1%	6.9%
Education and training	6.0%	7.9%
Health care and social assistance	4.4%	10.6%
Arts and recreation services	0.4%	1.4%
Other services	3.9%	3.9%
Total (%)	100.0%	100.0%
Total Number	**16,698**	**1,737,619**

Sources: ABS (2007)

Table 6. Employment by occupation, 2006

OCCUPATION	MINE CATCHMENT	QUEENSLAND
Managers	17.5%	12.6%
Professionals	9.9%	17.5%
Technicians and trades workers	18.5%	15.6%
Community and personal service workers	5.4%	9.3%
Clerical and administrative workers	10.6%	15.0%
Sales workers	6.4%	10.5%
Machinery operators and drivers	18.7%	7.4%
Labourers	13.0%	12.1%

Sources: ABS (2007)

17.3.3.4 Key Regional Markets

17.3.3.4.1 Labour Market and Employment Characteristics

Labour Force and Employment

The BRC Mine Catchment had an unemployment rate of 2.5 % in the December Quarter 2009, which was just over half as high as the Queensland figure (5.4 %) (see Table 4). The unemployment rate increased by 0.6 percentage points from the same period a year ago, driven by the effects of the global economic downturn. However, this was below the increase in the Queensland rate over the year (1.7 %), reflecting the resilience of the regional economy.

The participation rate in the BRC Mine Catchment area is significantly higher than Queensland's overall, likely as a result of residents living in the region in search of work, which may affect the ability of the local population to provide labour for the Project.

Employment by Industry

Employment by industry data for the catchments highlights the differences in composition of the economies. The mining sector dominates employment for the Mine Catchment, providing approximately one quarter of jobs in the region (see Table 5). Agriculture is also a major employer for the Mine Catchment Region, employing almost five times the Queensland proportion of the workforce.

Employment by Occupation

The BRC Mine Catchment has a high proportion of managers and machinery operators and drivers when compared to Queensland, representative of the region's strength in agriculture and mining (see Table 6). The Mine Catchment has a lower proportion of professionals, community and personal service workers, and sales workers compared to Queensland, highlighting the region's relatively low level of business and community related services and the reliance of the region on accessing these services from the Broader Service Area.

Table 7. Average weekly individual income by industry, 2006

INDUSTRY	MINE CATCHMENT	QUEENSLAND
Agriculture, forestry and fishing	$775	$622
Mining	$1,320	$1,722
Manufacturing	$757	$832
Electricity, gas, water and waste services	$729	$1,241
Construction	$925	$938
Wholesale trade	$983	$844
Retail trade	$513	$527
Accommodation and food services	$426	$463
Transport, postal and warehousing	$758	$886
Information media and telecommunications	$478	$943
Financial and insurance services	$814	$1,065
Rental, hiring and real estate services	$866	$939
Professional, scientific and technical services	$827	$1,105
Administrative and support services	$579	$672
Public administration and safety	$789	$968
Education and training	$724	$829
Health care and social assistance	$680	$793
Arts and recreation services	$477	$632
Other services	$677	$640
Total	**$742**	**$877**

Sources: ABS (2007)

Average Income by Industry

While the mining industry dominates employment in the Mine Catchment area, mining workers that live in the area are paid less than those that live in Queensland as a whole. By comparison, employees in the agriculture, forestry and fishing industry earn considerably more on average in the Mine Catchment than in Queensland (see Table 7).

17.3.3.4.2 Housing and Land Market

Property Sales and Prices

Median house prices in the Mine Catchment area jumped by almost 10 % between December 2008 and December 2009. Unit / townhouse sales in the Mine Catchment grew by over 5 % over the year to December 2009, while vacant land prices grew by 10% to December 2009.

Data from the REIQ (see Table 8) indicates that over the five years to December 2009, house prices in Barcaldine LGA have increased by approximately 286.1 %. In the Central Highlands LGA, house prices and unit / townhouse prices have increased by 100.3 % and 103.8 %, respectively, over the past five years, while the price of urban vacant land has increased by 175.0 %.

By comparison, over the past five years in the Brisbane Statistical Division:

- house prices have increased by 38.2 %;
- unit / townhouse prices have increased by 42.5 %; and
- vacant urban land prices have increased by 38.7 %.

Residential Approvals

The Mine Catchment area saw an increase in residential approvals over the year to December 2009, with the increased number of approvals matched with a rise in value (see Table 9). This strong result has largely been driven by speculative investors seeking to develop residential property in the Mine Catchment in expectation of rental returns should some of the proposed mining developments for the region proceed.

The increase in residential approvals is in contrast to approvals in Queensland which are down by almost a quarter, as the global economic downturn stalled a number of residential developments across Queensland and Australia.

Median Weekly Rents

No data for weekly rent were available for the Mine Catchment.

17.3.3.4.3 Construction Services and Building Inputs Market

Comparison of Queensland's construction price index with Australia (refer to Table 10) indicates that over the past six years construction prices in Queensland have generally increased at a faster rate across house, other residential building, non-residential building and roads and bridges construction prices, with roads and bridges experiencing the largest index point change over the period.

Table 8. House and land prices, mine catchment, December quarter 2009

CATCHMENT	HOUSE		VACANT LAND		UNIT / TOWNHOUSE	
	VALUE ($)	ANNUAL % CHANGE	VALUE ($)	ANNUAL % CHANGE	VALUE ($)	ANNUAL % CHANGE
Mine Catchment	$325,096	9.6%	$125,000	10.0%	$317,500	5.5%

Source: REIQ (2010)

Note: Queensland medians are not commonly reported by REIQ. Figures were unavailable for some areas of the catchment due to the small number of sales

Table 9. New residential building approvals, year ending December 2008 to year ending 2009

CATCHMENT	NO. OF NEW APPROVALS			VALUE OF NEW APPROVALS ($'M)		
	YE DEC 08	YE DEC 09	% CHANGE	YE DEC 08	YE DEC 09	% CHANGE
Mine Catchment	144	278	93.1%	$35.5	$68.0	91.5%
Queensland	36,651	28,261	-22.9%	$10,000.5	$6,985.2	-30.2%

Source: ABS (2010b)

Table 10. Construction Price Index, December Quarter 2009

CATCHMENT / PRICE INDICATOR	DECEMBER 2009	INDEX POINT CHANGE 2008-09	INDEX POINT CHANGE 2003-2009	CATCHMENT / PRICE INDICATOR	DECEMBER 2009	INDEX POINT CHANGE 2008-09	INDEX POINT CHANGE 2003-2009
QUEENSLAND				AUSTRALIA			
House	167.7	0.4	30.7	House	156.3	4.0	26.5
Other Residential	150.5	-18.2	20.7	Other Residential	149.7	-8.5	18.4
Non – Residential	156.8	-16.8	26.3	Non – Residential	153.0	-5.2	22.7
Road and Bridge	169.7	-5.0	42.7	Road and Bridge	158.8	0.6	33.6

Source: ABS (2010c)

Generally the construction materials market is highly global with many materials imported from interstate and overseas. Employment in construction in Queensland has generally been steadily growing over the past six years; however, at a regional level is highly variable and fluctuates depending on short-term contracts and investment occurring at a particular point in time. This is a reflection of the relatively mobile nature of construction workers.

On a regional level the Rawlinsons Building Price Index indicates that the price of building inputs in Emerald is 20 % higher than the cost for building inputs in Brisbane (Rawlinsons, 2010).

17.3.3.5 Regional Resources and Competitive Advantages

17.3.3.5.1 Easily Accessible Coal

The Bowen Basin is one of Australia's principal black coal producing basins, with an estimated 24 gigatons of demonstrated and inferred reserves lying under a thin layer of younger sediments (Geoscience Australiaand the Australian Bureau of Agricultural and Resource Economics, 2010). The Galilee Basin is one of Australia's largest relatively unexplored resource regions, and has attracted significant interest and exploration in recent years. In December 2008, the Galilee Basin was estimated to have around six gigatons of demonstrated and inferred thermal coal reserves (Geoscience Australia and the Australian Bureau of Agricultural and Resource Economics, 2010).

17.3.3.5.2 Emerging Coal-Seam Gas Industry

The Surat and Bowen Basins is the centre of Queensland's emerging coal-seam gas (CSG) industry, with proposed projects across Queensland potentially generating over 50 Mtpa. In December 2008, Economic demonstrated resources (EDR) of CSG reached 15,714 petajoules (PJ) in Queensland, with the Surat Basin accounting for 61% or 10,273 PJ and the Bowen Basin accounting for approximately 34% or 5,441 PJ (Geoscience Australia and the Australian Bureau of Agricultural and Resource Economics, 2010). Considerable exploration is currently underway in both the Bowen and Galilee Basins.

17.3.3.5.3 Skilled and Available Workforce

The Broader Service Area's established manufacturing and construction industries have created a large pool of skilled workers for the development of infrastructure projects, with many workers basing themselves in Mackay and Rockhampton and operating as FIFO / DIDO workers on remote jobs. This gives the area a competitive advantage in sourcing labour.

17.3.3.6 Key Industries

17.3.3.6.1 Mine Catchment

Mining

Mining is the dominant industry in the Mine Catchment, contributing almost two thirds of GRP in 2008 / 09 ($3.2 billion / 63.4 % of GRP) and nearly a quarter of total employment (24.0 %). The dominance of mining in the area reflects the wealth of resources and mining activity in the broader region, in particular the Bowen Basin, as well as exploration activity in the Galilee Basin.

Mining in the Mine Catchment is currently centred in the Central Highlands LGA. Emerald is increasingly becoming recognised as a key service centre to the mining

industry with a sizable, mobile contractor base. Despite this, average incomes for mine workers in the Mine Catchment ($1,320 per week) are below the Broader Service Area and Queensland averages for mine workers.

Agriculture (Beef Cattle)

Despite an estimated contribution of only 3.3 % of total GRP in 2008 / 09 ($162.4 million), the agriculture industry is a major employer in the Mine Catchment accounting for 13.4 % of total employment in the region. Beef cattle are the prominent agricultural activity in the BRC Mine Catchment, in particular in the Barcaldine LGA which encompasses vast tracts of grazing land. Broad-acre grain crops and irrigated cotton are also grown in the Central Highlands LGA.

17.4 ECONOMIC ASSESSMENT

17.4.1 IMPACTS ON INDUSTRY

Table 11 outlines the impacts of the project on industry output within the catchment area and Queensland across three stages – the initial three-year construction period, the first five years of operation and steady-state operations from 2018 / 19 to 2036 / 37. The table indicates:

- the Queensland economy is estimated to receive a benefit of an additional $231.9 million per annum on average in industry output above what would be achieved without the project during the three year construction period between 2010 / 11 and 2012 / 13;
- construction activity is estimated to result in an increase above the base (without project) scenario in industry output between 2010 / 11 and 2012 / 13 of approximately $205.4 million per annum on average in the Mine Catchment;
- the extraction and export of 40 Mtpa of coal is estimated to provide a $5.2 billion per annum on average boost to industry output in the Queensland economy over the first five years of operation, increasing to an average of $5.7 billion per annum on average thereafter to 2036 / 37; and
- the vast majority of industry output benefits in Queensland during operation will be generated by extraction of coal resources in the Mine Catchment, with this regional economy estimated to record an increase in industry output of approximately $5.0 billion per annum on average above the baseline (without project) scenario during the first five years of operation, and approximately $5.2 billion thereafter.

In terms of impacts by industry, the project is estimated to have the following impacts on industry output in Queensland (refer to Table 12):

- an increase in activity within the construction sector during the initial three year construction period, averaging approximately $568.6 million above what the sector would otherwise produce if the project does not proceed;
- business, finance and insurance services, trade and ownership of dwelling are also anticipated to record an increase in activity during the three years of construction, driven by a combination of increased demand for these services to supply the project as well as through additional household incomes and spending in the State;
- during operation (2013 / 14 to 2036 / 37), an increase in Queensland's mining sector output (above what would be achieved without the project) of approximately $4.5 billion per annum on average during the first five years of operation and approximately $4.8 billion per annum on average thereafter;

Table 11. Average annual impact on total industry output within the mine catchment and in Queensland, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN INDUSTRY OUTPUT		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Change in Industry Output (%)			
Mine Catchment	2.1%	43.4%	30.7%
Queensland	0.0%	0.8%	0.7%
Change in Industry Output ($M)			
Mine Catchment	$205.4	$4,955.0	$5,161.8
Queensland	$231.9	$5,221.5	$5,728.3

Source: Prime Research (unpublished)

Table 12. Average annual impact on industry output in Queensland, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN INDUSTRY OUTPUT ($M)		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Agriculture	-$42.0	-$38.0	-$15.2
Mining	-$247.2	$4,506.8	$4,807.1
Manufacturing	-$209.3	-$1,249.4	-$1,050.8
Electricity and water	-$38.1	-$19.9	$23.7
Construction	$568.6	$92.5	-$82.7
Trade	$82.8	$331.2	$348.4
Transport and storage	-$64.0	$837.7	$890.6
Business, finance and insurance services	$176.1	$176.6	$155.4
Public administration, defence, health and education	-$7.7	$233.3	$231.1
Recreation and other services	-$3.6	$47.3	$58.1
Ownership of dwellings	$16.2	$303.4	$362.7
Total Change in Industry Output ($M)	**$231.9**	**$5,221.5**	**$5,728.3**

Source: Prime Research (unpublished)

- an increase in demand for a range of goods and services in Queensland, both in terms of support sectors supplying mining operations (e.g. transport and storage, business, finance and insurance services) as well as a range of services to support the workforce and Queensland population, primarily as a result of flow-on industry activity, additional household incomes and expenditure, and Queensland Government revenues;
- a reallocation of some constrained resources, in particular labour, resulting in a potential overall "draw-down" on some sectors (e.g., agriculture, public administration, defence, health and education, recreation and other services), particularly during the early stages of the project, during which the Queensland economy is adjusting to changes in its economic structure; and
- a considerable decline in manufacturing industry output during operation. It is expected that the mining-related manufacturing sub-sector will benefit from the project through demand for and provision of goods and services to support the project once operational. However, offsetting this it is anticipated the manufacturing sector will be one of the hardest hit sectors in terms of the reallocation and draw of labour to the project given the relatively similar skills sets employed. Further, the export of $4.6 billion per annum of coal will place upward pressure on Australia's exchange rate, and may impact on the global competitiveness of manufacturing goods produced in Australia (although this impact, if any, is likely to be small). As a result, overall manufacturing output is estimated to decline in Queensland relative to what would be achieved if the project does not proceed.

Within the Mine Catchment, the project is assessed to have the following additional key impacts on industry and local business (refer to Table 13):

- an increase in construction industry activity during the three year construction phase above what would be achieved without the project;
- an increase in mining activity in the Mine Catchment of approximately $4.8 billion per annum on average above the baseline over the first five years of operation, and approximately $5.1 billion per annum on average between 2018 / 19 and 2036 / 37;
- the development of a local value chain and mining industry support network in the catchment area, in particular in the regional hubs of Emerald and Barcaldine (as well as Mackay within the Broader Service Area), as well as a range of services to support the workforce and people migrating to the region. This will benefit not only the project but also potential future mining sector projects in the region;
- as with Queensland, some sectors are expected to record a decline in activity as a result of a reallocation

of constrained resources (e.g., agriculture, public administration, defence, health and education, recreation and other services), particularly during the early stages of the project;

- agriculture in the Mine Catchment will also be adversely impacted by:
  - the acquisition of up to 55,000 ha of land primarily used for grazing within the Mine Catchment for construction and operation of the mine; and
  - disruption of property management practices for those properties intersected by the rail corridor, including potential impacts on land accessibility for land holders and livestock with restricted crossing between land parcels, additional costs for mustering, weed control and general property management (e.g., additional fuel usage, fencing, etc.), and the potential for 'land locking' of some land parcels (i.e., isolating or stranding some areas of land and thereby decreasing their commercial attractiveness and utilisation).

17.4.2 IMPACTS ON EMPLOYMENT

17.4.2.1 Employment Generation

Impacts of the project on employment within the Mine Catchment and Queensland are outlined in Table 14. In interpreting the employment estimates presented,

Table 13. Average annual impact on industry output in the mine catchment, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN INDUSTRY OUTPUT ($M)		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Agriculture	-$9.1	-$3.7	-$0.4
Mining	-$86.6	$4,801.8	$5,095.0
Manufacturing	$25.7	$12.1	$6.5
Electricity and water	-$1.4	$1.3	$3.1
Construction	$239.1	$103.0	$23.3
Trade	$22.4	$15.9	$10.5
Transport and storage	$4.4	$10.1	$9.8
Business, finance and insurance services	$22.0	$14.0	$8.2
Public administration, defence, health and education	-$6.0	-$0.6	$1.9
Recreation and other services	-$1.5	$0.1	$1.1
Ownership of dwellings	-$3.7	$1.1	$3.0
Total Change in Industry Output ($M)	$205.4	$4,955.0	$5,161.8

Source: Prime Research (unpublished)

Table 14. Average annual impact on employment at the mine catchment area and in Queensland, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN EMPLOYMENT		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Change in Employment (%)			
Mine Catchment	9.4%	8.5%	4.1%
Queensland	0.1%	0.2%	0.1%
Change in Employment (FTEs)			
Mine Catchment	1,975	1,928	1,252
Queensland	2,975	4,464	3,954

Source: Prime Research (unpublished).

Note: Employment estimates presented in the table above are based on place of work, not place of usual residence.

it should be recognised that a large proportion of the project's construction and mining workforces are anticipated to operate on a FIFO basis, with many of these workers having a permanent residence in major service centres such as Brisbane, Mackay, Rockhampton or Emerald. The table outlines:

- in consideration of an anticipated reallocation of labour resources between sectors, the Project is estimated to support, on average, an additional 2,975 FTE employment positions per annum above what would otherwise be achieved in Queensland during construction (between 2010 / 11 and 2012 / 13);
- within the BRC Mine Catchment, the increase in employment is anticipated to be approximately 1,975 FTEs per annum on average during the three years of construction. This is representative of the high level of construction employment directly generated by the project in the catchment;
- during the first five years of operation (2013 / 14 to 2017 / 18) the project is estimated to support an additional 4,464 FTE employment positions per annum on average in Queensland above the base (without Project) scenario, and approximately 3,954 FTE employment positions per annum on average thereafter; and
- the BRC Mine Catchment is estimated to record an increase in employment during operation of an estimated additional 1,928 FTE employment positions per annum on average during the first five years of operation and 1,252 FTE employment positions per annum on average thereafter.

Impacts of the project on Queensland's employment by industry are outlined in **Table 15**. The table shows that industries that are estimated to record an increase in demand and output (as identified in **Table 12**) are also expected to record an increase in employment to meet additional production requirements, while industries that are estimated to record a decline in output can be attributed at least partially to a draw of labour resources from these industries.

Of note, the project will support a considerable number of employment positions in the trade sector and the public administration, defence, health and education sector in Queensland. This can be largely attributed to the considerable additional government revenues generated by the project, supporting employment in government funded services, as well as additional household incomes and expenditure on goods and services.

Table 15. Average annual impact on employment by industry in Queensland, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN EMPLOYMENT (FTES)		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Agriculture	-126	-192	-120
Mining	-258	772	788
Manufacturing	-188	-2,215	-1,666
Electricity and water	-97	-70	20
Construction	2,564	575	-65
Trade	504	1,961	1,763
Transport and storage	-47	662	643
Business, finance and insurance services	617	718	607
Public administration, defence, health and education	5	1,964	1,698
Recreation and other services	3	254	255
Ownership of dwellings	0	35	32
Total Change in Employment (FTEs)	**2,975**	**4,464**	**3,954**

Source: Prime Research (unpublished)

Note: Employment estimates presented in the table above are based on place of work, not place of usual residence

Within the Mine Catchment, the project is assessed to have the following additional key impacts on employment (refer to Table 16):

- during the construction phase, the increase in employment in the Mine Catchment will be primarily driven by additional jobs in the construction industry (1,874 FTE employment positions per annum on average);
- once operational, the majority of additional employment positions supported in the Mine Catchment will be in the mining industry (1,102 FTE employment positions per annum on average between 2013 / 14 and 2017 / 18, and 1,098 FTE employment positions per annum on average thereafter), although an overlap in construction activity during the first year of operation will support construction employment during the initial operational

Table 16. Average annual impact on employment by industry in the mine catchment, deviation from the baseline (without project) scenario

INDUSTRY	CHANGE IN INDUSTRY EMPLOYMENT		
	2010 / 11 – 2012 / 13	2013 / 14 – 2017 / 18	2018 / 19 – 2036 / 37
Change in Industry Employment (%)			
Agriculture	-1.2%	-0.4%	0.0%
Mining	-1.7%	19.5%	13.6%
Manufacturing	9.8%	3.6%	1.4%
Electricity and water	-2.6%	-0.4%	1.3%
Construction	75.2%	26.6%	1.8%
Trade	2.7%	1.3%	0.3%
Transport and storage	1.7%	2.9%	2.1%
Business, finance and insurance services	4.3%	2.1%	0.8%
Public administration, defence, health and education	-1.1%	-0.2%	0.2%
Recreation and other services	-2.9%	-0.3%	0.9%
Ownership of dwellings	0.0%	0.0%	0.0%
Total Change in Industry Employment (%)	**9.4%**	**8.5%**	**4.1%**
Change in Industry Employment (FTEs)			
Agriculture	-31	-12	-1
Mining	-87	1,102	1,098
Manufacturing	60	23	9
Electricity and water	-3	0	1
Construction	1,874	695	67
Trade	105	53	19
Transport and storage	17	30	25
Business, finance and insurance services	81	42	19
Public administration, defence, health and education	-35	-5	10
Recreation and other services	-6	-1	3
Ownership of dwellings	0	0	0
Total Change in Industry Employment (FTEs)	**1,975**	**1,928**	**1,252**

Source: Prime Research (unpublished)

Note: Employment estimates presented in the table above are based on place of work, not place of usual residence

period. Key support sectors such as manufacturing, trade, business, finance and insurance services and transport and storage are also estimated to benefit; and

- the draw of labour to the mining and transport and storage sectors during operation, as well as their key support sectors, is estimated to result in some other sectors recording a decline in employment compared to what would be achieved without the project (e.g. agriculture), in particular during construction and the first five years of operation.

17.4.2.2 Skills Requirements

Employment by occupation requirements during the three year construction period within the catchment areas are presented in Table 17, and indicate that technicians and trade workers, labourers, and clerical and administrative workers will be in the highest demand over the period.

During operation, labour demand is estimated to remain high compared to the baseline scenario in the Mine Catchment, in particular during the first five years of operation (refer to Table 18).

Key occupations that will be in highest demand during the construction and operation periods are outlined in Table 19.

Table 17. Average annual impact on employment by occupation grouping within the mine catchment area, deviation from the baseline (without project) scenario, 2010 / 11 – 2012 / 13

OCCUPATION GROUP	CHANGE IN EMPLOYMENT
2010 / 11 – 2012 / 13	
Managers	6.3%
Professionals	2.3%
Technicians and trades workers	21.7%
Community and personal service workers	0.8%
Clerical and administrative workers	8.4%
Sales workers	4.3%
Machinery operators and drivers	3.7%
Labourers	18.5%

Source: Prime Research (unpublished)

Table 18. Average annual impact on employment by occupation grouping within the mine catchment area, deviation from the baseline (without project) scenario, 2013 / 14 – 2036 / 37

OCCUPATION GROUP 2013 / 14 – 2017 / 18	CHANGE IN EMPLOYMENT 2018 / 19 – 2036 / 37	OCCUPATION GROUP	CHANGE IN EMPLOYMENT
Managers	4.4%	Managers	1.8%
Professionals	4.9%	Professionals	3.0%
Technicians and trades workers	13.9%	Technicians and trades workers	5.1%
Community and personal service workers	1.0%	Community and personal service workers	0.6%
Clerical and administrative workers	6.1%	Clerical and administrative workers	2.6%
Sales workers	2.2%	Sales workers	0.6%
Machinery operators and drivers	12.5%	Machinery operators and drivers	8.0%
Labourers	8.6%	Labourers	2.1%

Source: Prime Research (unpublished)

Table 19. Key occupations during construction and operation

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	• Truck drivers
• Mobile plant operators	• Construction and mining labourers
• Construction and mining labourers	

17.4.2.3 Skills Development and Attraction

Waratah Coal will seek to utilise local labour to the extent possible and practical during both construction and operation of the project. During construction and operation Waratah Coal will; however, utilise a primarily FIFO workforce, as it is anticipated that local labour will be insufficient to meet project requirements due to:

- existing constraints in terms of labour availability in the project's Catchment Area and the nature of the project, which will require some specialist skills for both the construction and operation of the project that are currently in short supply in the region; and
- anticipated competition for labour resources from other major infrastructure, resource and industry projects expected to be developed throughout Central Queensland over the next five years.

In the longer term, the project will present an attractive employment opportunity to the local labour force given the higher salaries on offer in the mining industry compared to other sectors of the economy. To assist local job seekers obtain the required skills, Waratah Coal will instigate policies and practices that will assist in developing the skills base of the region to support mining activities and improve local participation over time.

Additionally, while Waratah Coal will initially utilise a predominantly FIFO workforce, past experience in the Bowen Basin suggests the regional hubs of Emerald and Barcaldine, and potentially Clermont, will likely experience some permanent migration of mining contractors and support services workers using these centres as a base to provide services to the Galilee and Bowen Basins. Contractors and support service workers may also look to locate in Alpha if additional infrastructure and housing is developed to support an influx in population.

This will provide a positive long-term benefit to the regional economy in terms of a permanent increase in the skills base from not only those workers migrating to the region, but also through additional opportunities for ongoing skills transfer from people migrating to the region to existing residents.

Table 20. Estimates of employment generation by place of work and place of usual residence

REGION	PLACE OF WORK	PLACE OF USUAL RESIDENCE	NET FIFO COMPONENT
2010 / 11 to 2012 / 13			
Mine Catchment	1,975	300	1,675
Rest of Queensland	-983	1,836	-2,818
2013 / 14 to 2017 / 18			
Mine Catchment	1,928	386	1,543
Rest of Queensland	1,643	3,346	-1,702
2018 / 19 to 2036 / 37			
Mine Catchment	1,252	287	964
Rest of Queensland	2,128	3,114	-986

Source: Prime Research (unpublished)

17.4.2.4 Unemployment

The project will provide job opportunities for people currently unemployed through the following avenues:

- through the generation of job opportunities directly related to developing and operating the project;
- through flow-on job generation to support the project; or
- through the creation of job openings to replace workers attracted to the project from other sectors.

While not all of the positions generated by the project will be filled by an unemployed person – a large proportion will also likely be filled by people re-entering the workforce or migrating to Queensland from elsewhere in Australia or overseas – it is anticipated that unemployment will decline as a result of jobs created by the project.

Impacts on unemployment in Queensland are anticipated to be highest in the Mine Catchment and Abbot Point Catchment where construction and operational activity will primarily be centred, as well as in Southeast Queensland where many of the FIFO workers and a range of services are anticipated to locate.

17.4.2.5 Migration of Workers

A high proportion of construction and mining workers for the project are expected to be engaged on FIFO arrangements, with permanent residences outside the Study Area. Table 20 presents employment estimates as outlined by CGE modelling results based on where those jobs will be located and the permanent residence of workers, to outline the anticipated level of local labour content compared to FIFO workers. The table shows that the vast majority of workers in the Mine Catchment are anticipated to be FIFO workers during both construction and operation.

17.4.3 IMPACTS TO FACTOR INCOMES

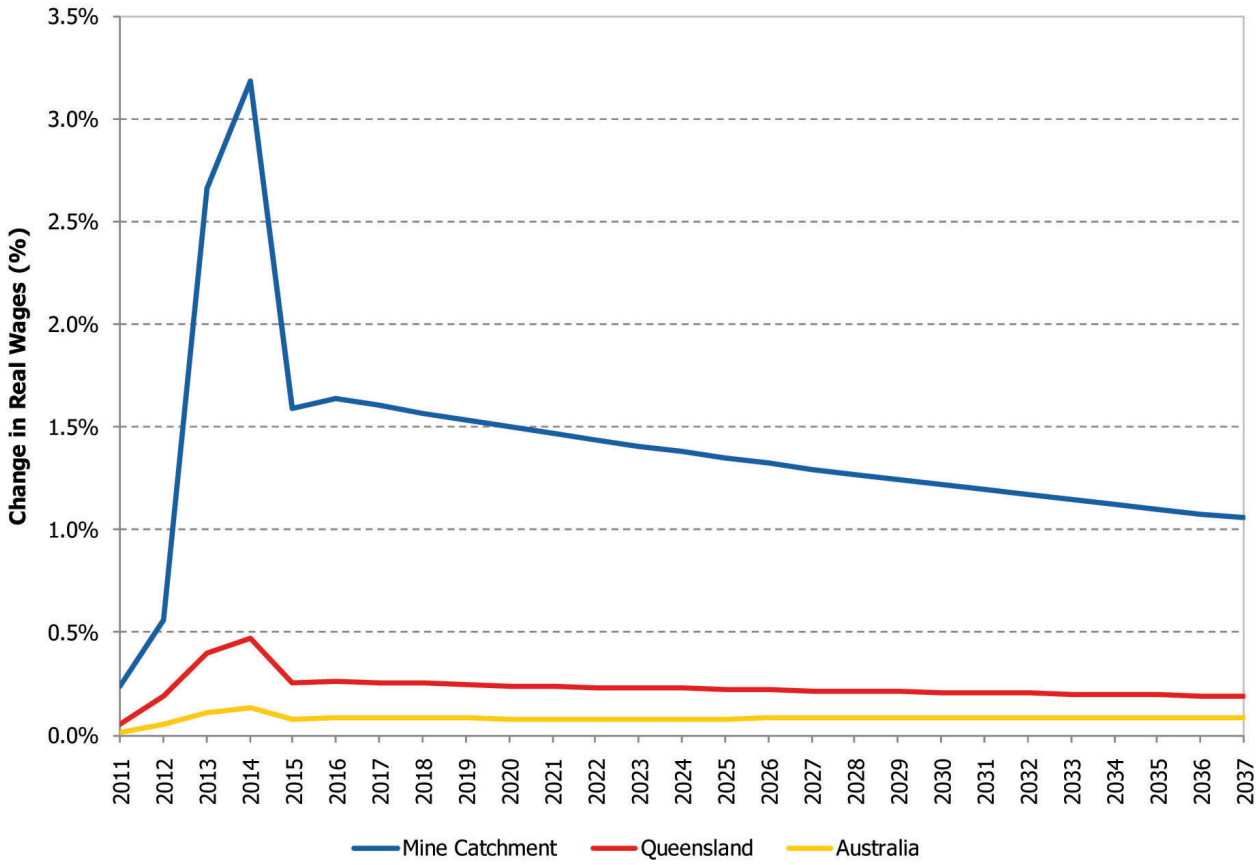
17.4.3.1 Compensation of Employees

Demand for labour by the project place upward pressure on wage rates throughout the regional, State and national economy as labour is attracted to the mining sector and other industries are forced to increase wages and salaries paid in order to retain and attract workers.

Modelling results presented in Figure 2 indicate that the project could contribute to an increase in real wages of approximately 0.1 % per annum on average in Australia and 0.2 % per annum on average in Queensland between 2010 / 11 and 2036 / 37. Impacts on real wages are expected to be more acute in the Study Area, in particular in the Mine Catchment where the demand for labour will be highest. Real wages are estimated to increase by approximately 1.4 % per annum on average in the Mine Catchment between 2010 / 11 and 2036 / 2037.

This increase in the average real wage is over and above any increases in the cost of living, and therefore represents a real increase in household incomes in the Catchment Area, Queensland and Australia.

Figure 2. Annual percent change in real wages resulting from the project, 2010 / 11 to 2036 / 37



Source: Prime Research (unpublished)

17.4.3.2 Gross Operating Surplus

The project will:

- generate additional confidence in Australian capital markets, encouraging increased capital injection into the Australian economy, in particular in the construction and mining industries and their value chain;
- provide a potential benefit in relation to access and cost of finance for capital investment. The development of a 40 Mtpa coal mine with a stable contract in place for the supply of coal may lead to increased business confidence and improve access to (and reducing the cost of obtaining) finance throughout the region;
- generate additional expenditure by industry and households which will benefit businesses through additional turnover and business profits; and
- increase demand for industrial and commercial land, with an associated increase in values and rents for this land.

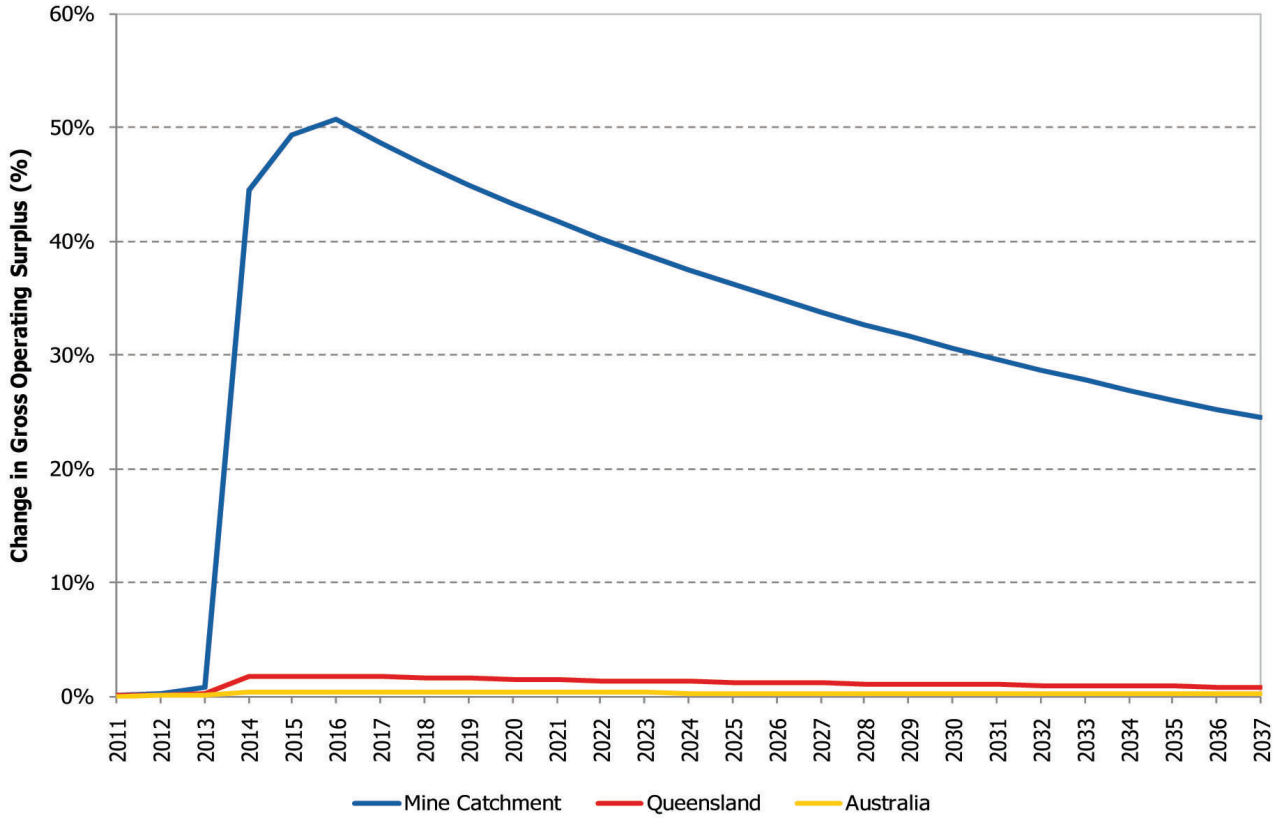
Modelling results presented in Figure 3 indicate that the project could contribute to a considerable increase in gross operating surplus in the Mine Catchment above what would be achieved without the project between 2010 / 11 and 2036 / 37, with milder increases in Queensland and Australia.

17.4.4 IMPACTS ON PROPERTY VALUES

The project will impact on the local property market within the Mine Catchment through additional demand for property as a result of both permanent and temporary migration of employees and their families to work on the project, as well as through migration of people employed in jobs generated through flow-on activity.

The use of worker camps to accommodate the project's predominantly fly-in fly-out (FIFO) workforce will ameliorate demand for accommodation in the local townships to some degree. Even so, the experience of the recent mining boom (2003 to 2008) in the Bowen Basin suggests the towns of Alpha and Jericho within the Mine Catchment, which are the closest townships

Figure 3. Annual percent change in gross operating surplus resulting from the project, 2010 / 11 to 2036 / 37



Source: Prime Research (unpublished)

to the mine site, are likely to experience an increase in property demand and prices as some contractors and executives during both construction and operation will likely seek alternative accommodation.

In the short to medium term this will place upward pressure on prices in both the rental market (through construction and mining workers seeking temporary accommodation outside the worker camp) and the property sales market (primarily through investors purchasing and developing property in the region to realise rental yields). In the long term, property sales prices may also be buoyed by some workers preferring to permanently migrate to the region.

Trends during the recent mining boom also suggest that regional hubs such as Emerald and Barcaldine in the Mine Catchment, and Mackay in the Broader Service Area, may also experience some increased demand for accommodation as a result of the project. Since 2003, property prices in the major service and population centres of the Bowen Basin region have increased at a faster rate than in Brisbane as many mining and mining services-related workers have migrated to these centres in proximity to mining projects.

17.4.5 IMPACTS TO HOUSEHOLDS

The project will contribute to an increase in household incomes in the Mine Catchment of approximately $42.6 million per annum on average between 2010 / 11 and 2012 / 13, and approximately $69.1 million per annum on average between 2013 / 14 and 2036 / 37. Given the use of FIFO workers with permanent residence outside the Mine Catchment, a large proportion of wages and salaries generated by the project will be attributed to households elsewhere in Queensland. In Queensland, the project will generate additional wages and salaries of approximately $452.7 million per annum on average between 2010 / 11 and 2012 / 13 and $776.1 million per annum on average between 2013 / 14 and 2036 / 37.

In addition to wages and salaries generated by the project, households may benefit from increased wealth through:

- opportunities for low income households and families to supplement their income through family members working either part time or full time at the mine;
- a reduction in unemployment in the Mine Catchment and Queensland, providing people that were previously unemployed with higher incomes;

- opportunities for wealth re-distribution to investors (i.e., shareholders) of the project and contribution to property owners through rental returns; and
- an increase in real wages throughout Australia, in particular in the Mine Catchment, as an increase in demand for skilled labour places upward pressure on labour prices. The increase in real wages is over and above any increases in the cost of living, and therefore represents an increase in disposable incomes in the Mine Catchment and Queensland.

However, not all project impacts on households will be positive. Potential negative implications on households include:

- wealth generated by the project will be primarily distributed to those directly engaged in the project as a result of higher salaries paid in the mining industry and associated supply chain. With many of the project employees living permanently outside the Mine Catchment, this will result in a repatriation of wealth to towns and cities where these workers reside;
- experiences during the most recent mining boom (2003 to 2008) suggest the disparity in salaries could contribute to a wealth divide between mining families and other residents. In combination with an expected increase in rental prices and property values in Alpha and Jericho, and potentially regional hubs such as Barcaldine, Emerald and Mackay, housing affordability could become an issue, in particular for those that are not employed by the project or in other high earning occupations;
- higher rental prices in the Mine Catchment will likely attract investors to purchase and / or develop housing in the region to realise high rental yields. The rental market represents a wealth transfer from renters to property owners, and where these investors are external to the Mine Catchment, this represents a transfer of wealth out of the region;
- some areas and towns may be subject to increased traffic flows as a result of the project, in particular the towns of Alpha and Jericho that are closest to the mine site, through a combination of:
  - construction and mining related materials and equipment transportation. This will lead to increased road maintenance requirements;
  - new residents migrating to the region and / or mining employees seeking accommodation outside of the worker camps; and
  - the provision of some recreational, leisure, health and community services to the mine employees.

The increase in traffic may result in increased travel times for residents were not appropriately planned for and strategies developed to mitigate these impacts.

17.4.6 IMPLICATIONS OF THE PROJECT FOR FUTURE DEVELOPMENT

17.4.6.1 Beneficial Implications

The project will involve the following key elements that could provide significant future benefits for the regional, State and national economies:

- the development of rail and port infrastructure that is critical to access and commercialise coal and other resource deposits with export potential in the Mine Catchment and the Galilee Basin;
- investment by Waratah Coal in developing and/or upgrading utilities (power, water and telecommunications) and transport (local roads and an airstrip) infrastructure to support the project;
- the development of a local mining sector value chain, providing a range of mining support services in the local region; and
- development of the local skills base as a result of training programs, migration of skilled workers and ongoing skills transfer between workers.

Rail, port and other support infrastructure developed for the project will be accessible by third parties, which will open the abundant high quality resources available in the Galilee Basin for future development, including coal and coal seam gas, by providing base support infrastructure and reducing hurdle rates for future resource development.

The development of open access rail infrastructure provides a platform for future expansion of the line to accommodate higher coal tonnages, thereby providing additional capacity for future development of coal and other resource operations in the Galilee Basin. This will be supported by enhanced skills and labour force capacity, assisting future resource projects through the local presence of skilled workers and supply chains.

Support infrastructure such as utilities and roads will also likely improve regional business capacity and competitiveness, providing greater opportunities for local business growth and expansion. The project also has the

potential to improve business confidence in the region, which may ease lender's current concerns regarding development risk for residential developments. This would improve access to credit for developers to provide additional residential and commercial developments.

17.4.6.2 Potential Forgone Opportunities

While the project is expected to deliver considerable beneficial impacts to the regional, State and national economies, there are some potential adverse implications of the project in terms of potential forgone opportunities, including:

- an erosion of the strong agriculture sector in the mine Catchment, in particular beef cattle, through the acquisition of grazing land, disruption of agricultural management practices in land holdings along the rail corridor, and an expected draw of labour resources from the agricultural industry. However, agriculture is a stable rather than growth industry in the region and has limited potential for future expansion without intensification;
- competition with other projects for labour (and other) resources, placing upward pressure on prices and increasing the difficulty for projects to source input materials and suitably skilled staff. This may result in some other projects being delayed or postponed;
- support for the strength of the Australian dollar which may adversely impact the profitability and long term prospects of some sectors that are exposed to international competition, in particular manufacturing, some agricultural commodities and tourism-related sectors; and
- attraction of employees from lower income paying industries, which could have deleterious impacts on local business and industry capacity to service the project and local population if not managed appropriately.

17.4.7 ADDITIONAL ECONOMIC IMPLICATIONS

In addition to the impacts within the Mine Catchment examined above, the project is anticipated to have some wide ranging impacts at a State and national level and cannot be attributed or apportioned to any one catchment, including impacts on the balance of trade and additional government revenues. These impacts are examined below.

17.4.7.1 Impacts on Export Revenues and Balance of Trade

The project will result in an increase in export revenues of $4.6 billion per annum through the export of high quality thermal coal. This will represent an increase in Australian thermal coal export revenues of approximately 25.7 % and an increase in total Australian exports of 2.0 % from 2008 / 09 levels. The increase in export revenues may provide support for the strength of the Australian dollar. However, the impact of the project on Australia's exchange rate, if any, is likely to be small.

17.4.7.2 Impacts on Government Revenues

17.4.7.2.1 Local Government Revenues

Local council revenues will increase as a result of people re-locating permanently or temporarily to the project's Catchment Areas, through additional rates revenue associated with dwellings and workers camps that are constructed to meet additional demand and any appreciation in land value brought on by increased population. For renters, and those in workers camps, council fees and charges will be met by the landlords and employers.

However, off-setting additional revenues will be a requirement for additional funding for capital investments (e.g., local road and community infrastructure) as well as a likely increase in operating expenditure to meet the service provision and infrastructure demand and needs of an increased population.

17.4.7.2.2 Queensland Government Revenues

The project will increase Queensland Government revenues directly through land tax, payroll tax, royalties and rents. Impacts of the project on Queensland Government revenues are summarised in Table 21, and have been estimated based on prevailing tax rates (i.e., assumes tax policy does not change significantly over time). Queensland Government revenues have been estimated based on both direct and flow-on impacts of the project.

In aggregate, Queensland Government revenues are indicatively estimated to be approximately $364.9 million per annum on average over the period 2010 / 11 to 2036 / 37, with royalties contributing an estimated 94.0 % of total Government revenues.

Table 21. Average annual Queensland Government revenues from the project (2010 / 11 to 2036 / 37)

REVENUE SOURCE	ESTIMATED REVENUE ($M)	PROPORTION OF REVENUE (%)
Land Tax	$0.8	0.2%
Payroll Tax	$18.4	5.0%
Royalties	$343.0	94.0%
Tenure Rents	$2.8	0.8%
Total Revenue	$364.9	100.0%

Source: Office of State Revenue Queensland (2010), Prime Research (unpublished), DEEDI (2010), DME (2010a), DME (2010b), AEC*group*

Table 22. Average annual Australian Government revenues from the Project (2010 / 11 to 2036 / 37)

REVENUE SOURCE	ESTIMATED REVENUE ($M)	PROPORTION OF REVENUE (%)
Company Tax	$302.9	42.7%
Fringe Benefits Tax	$6.9	1.0%
GST	$158.3	22.3%
Personal Income Tax	$237.8	33.5%
Import Duties (a)	$4.0	0.6%
Total Revenue	$709.8	100.0%

Note: (a) Estimates of import duties over the period from 2010 / 11 to 2036 / 37 represent import duties on direct imports during construction only.

Source: Australian Customs and Border Protection Services (2010), Australian Taxation Office (2010), Prime Research (unpublished), AEC*group*

17.4.7.2.3 Australian Government Revenues

The project will contribute to Australian Government revenues through company tax, fringe benefits tax, goods and services tax (GST), personal income tax and import duties. Australian Government revenues have been estimated based on both direct and flow-on impacts of the project, with the exception of import duties that are estimated based on direct impacts only.

The impacts of the project on Australian Government revenues are summarised in Table 22. The project is indicatively estimated to generate an additional $709.8 million per annum on average in Australian Government revenues between 2010 / 11 and 2036 / 37.

There is currently widespread debate relating to the proposed Australian Government's Mining Resources Rent Tax (MRRT). However, as this is not currently Government policy and is in the process of ongoing negotiation and planning, the structure of any tax effects remains unclear and is unable to be modelled with any accuracy. Should such a tax be introduced it would:

- decrease resource company profits for those operations meeting MRRT criteria and thresholds;
- increase tax revenues to the Australian Government through revenues generated by the MRRT; and
- increase development hurdle rates and risk, with the implication of reducing the attractiveness of Australian resource deposits for development.

It is unclear at this stage the specific effect this proposed additional tax would have on the project, and the associated broader flow-on effects.

17.5 CONCLUSION

17.5.1 ECONOMIC IMPACT ASSESSMENT

The economic impact assessment was prepared in mid 2010. While some aspects of the project have changed (such as the intended use of the proposed multi-cargo facility rather than the construction of a separate jetty by Waratah Coal), the general findings and conclusions are deemed to remain relevant and provide a reasonable assessment of the project's economic impact on the local, regional, state and national economies.

Analysis and modelling prepared in this report identifies the project will generate significant positive economic, employment and income impacts at the regional and State levels. Key impacts of the project in the Mine Catchment and Queensland include:

- an increase in export revenues of $4.6 billion per annum through the export of 40 Mtpa of high quality thermal coal, representing an increase in Australian thermal coal export revenues of approximately 25.7 % and an increase in total Australian exports of 2.0 % from 2008 / 09 levels. The increase in export revenues may provide support for the strength of the Australian dollar;
- an increase in industry output in Queensland of $231.9 million per annum on average during the three year construction period, including an increase in output of $205.4 million per annum on average in the Mine Catchment;
- a $5.2 billion per annum on average boost to industry output in the Queensland economy over the first five years of operation, increasing to an average of $5.7 billion per annum on average thereafter to 2036 / 37. The majority of this increase in output will be captured by the Mine Catchment;
- support and development for local business and industry, through securing local contracts for the supply of goods and services for the project where possible and through other flow-on activities and increased household consumption. Key industries supported by the project include mining, transport and storage, construction and property and business services. A large proportion of goods and services are also anticipated to be sourced from elsewhere in the State, in particular from Mackay and southeast Queensland;
- increased competition for inputs such as land, labour and capital will result in resources moving to regions and industries that generate the greatest returns. As a result, output from Queensland's manufacturing and agricultural industries is estimated to decrease, largely due to increased competition for skilled labour. Agriculture in the Mine Catchment will also be adversely impacted by:
- the acquisition of up to 55,000 ha of land primarily used for grazing within the Mine Catchment for construction and operation of the mine; and
- disruption of property management practices for those properties intersected by the rail corridor, including potential impacts on land accessibility for land holders and livestock with restricted crossing between land parcels, additional costs for mustering, weed control and general property management (e.g., additional fuel usage, fencing, etc.), and the potential for 'land locking' of some land parcels (i.e., isolating or stranding some areas of land and thereby decreasing their commercial attractiveness and utilisation);
- an increase in employment in Queensland of 2,975 FTE employees per annum on average during the three year construction period, including 1,975 FTE employees in the Mine Catchment. During the first five years of operation (2013 / 14 to 2017 / 18) the project is estimated to support an additional 4,464 FTE employment positions per annum on average in Queensland, and approximately 3,954 FTE employment positions per annum on average thereafter. In the Mine Catchment the Project is estimated to support an additional 1,928 employment positions per annum on average during the first five years of operation, and approximately 1,252 FTE employment positions per annum on average thereafter;
- capacity building and skills development in the local labour force through apprenticeships, traineeships and skills training, as well as ongoing skills transfer between imported and local labour and the permanent migration of some skilled labour;
- a decrease in unemployment and the unemployment rate as a result of jobs created by the Project, in particular in the Mine Catchment;
- an increase in household incomes of:
  - approximately $42.6 million per annum on average in the Mine Catchment between 2010 / 11 and 2012 / 13, and approximately $69.1 million per annum on average between 2013 / 14 and 2036 / 37; and
  - approximately $452.7 million per annum on average between 2010 / 11 in Queensland and 2012 / 13 and $776.1 million per annum on average between 2013 / 14 and 2036 / 37;
- upward pressure on labour prices due to the increase in demand for skilled labour, particularly in industries experiencing skills shortages, further increasing household incomes. This increase is expected to be over and above any increases in the cost of living, representing an increase in real wages;
- a likely increase in residential property prices as a result of additional demand generated by contractors and flow-on employees migrating to the region. In the Mine Catchment, this is anticipated to be felt primarily in the major regional centre of Emerald, as well as the local townships of Alpha, Jericho and Barcaldine;

- an increase in:
  - Queensland Government revenues of approximately $364.9 million, primarily in the form of approximately $343 million per annum in royalty payments; and
  - Australian Government revenues of approximately $709.8 million, primarily through avenues such as company tax (approximately $302.9 million), personal income tax (approximately $237.8 million) and goods and services tax (approximately $158.3 million).

  These increased government revenues will provide opportunities for government to fund additional infrastructure and enhanced service provision at a range of levels; and
- development of rail and port infrastructure, as well as local road infrastructure, an airstrip and utilities infrastructure to support the project (e.g., power, water and telecommunications). This will provide benefits to the entire project catchment Areas by providing a link between the abundant resources in the Galilee Basin and export infrastructure, assisting in commercialising these resources. This infrastructure will also improve regional business capacity and competitiveness, and will provide positive legacy benefits for the region.

17.6 COMMITMENTS

17.6.1.1 Address Skills Shortages

The Mine Catchment and broader region is already experiencing skills shortages for construction and mining positions, and the development and operation of the mine will exacerbate these shortages.

In addressing issues of skills shortages in the construction industry, Waratah Coal commits to:

- encouraging contractors engaged during construction of the project to utilise Australian Government skills and training programs where possible, including the Australian Apprenticeship Program. Waratah Coal will provide information and develop awareness of Australian Government incentives and programs to all contractors engaged, and direct contractors to relevant agencies; and
- engaging and collaborating with CSQ to identify potential strategies for increasing the capacity of local job seekers to develop appropriate skills.

To address issues of skills shortages in the mining industry, Waratah Coal commits to:

- identifying and communicating the project's skills requirements to MISC and DET to identify areas of skills gaps and assist in workforce planning;
- collaborating with MISC and DET regarding extending the findings of the Career Pathways research and other attraction and retention research to market the industry as a career of choice to not only persons currently in the labour force but also youth entering the labour force in the near future;
- collaborating with MISC and relevant RTOs to develop customised training programs, including those undertaken as part of the Work Readiness Program, that are suited to the needs of the project and extend these training programs to the Mine Catchment through relevant RTOs. These programs would target under-utilised labour resources in the region (including people not currently in the labour force), workers in other industries wishing to enter the mining industry and, importantly, school leavers;
- engaging with MISC regarding accessing funding for training programs provided by RTOs through the 'Resources Industry Training Fund' (RITF);
- encouraging contractors engaged on the project to utilise Australian Government skills and training programs where possible, including the Australian Apprenticeship Program. It is recommended Waratah Coal provide information and develop awareness of Australian Government incentives and programs to all contractors engaged, and direct contractors to relevant agencies; and
- collaborating with MISC to track skills requirements and gaps on an ongoing basis, as part of the Heartbeat Project. This will assist in ongoing industry-wide strategies and planning for addressing skills shortages in the region.

17.6.1.2 Minimise Draw Down on Labour from Other Sectors

The project is estimated to result in a draw / reallocation of labour from some sectors of the economy, in particular lower income paying sectors.

To assist in minimising the impacts of a draw down on labour in other sectors, Waratah Coal commits to:

- engaging with local business and residents to investigate options for providing flexible working

arrangements that would allow locals to participate in not only the project, but also maintain jobs in other industries. This may include, where practical, arrangements such as rostered shifts (e.g., 7 days on, 7 days off) or part-time employment opportunities in the project that would enable local workers to also work part time in sectors such as agriculture and local government; and

- working with local business to secure supply contracts and encourage new businesses to locate to the region (this is examined in more detail in Section 17.5.2.3).

It must be recognised; however, that the high salaries offered by the project will result in some difficulties for other sectors to attract and retain workers. In order to appropriately mitigate the likely draw of labour to the project, collaborative planning between State Government, local Council, local industry, industry organisations, and mining proponents is required.

17.6.1.3 Develop the Local Supply Chain

There are gaps in the local supply network, negatively impacting on local business' capacity to support the needs of the Project through local supply of goods and services. This reduces the potential for the local economy to capture flow-on benefits of the Project.

To assist local business secure supply contracts and encourage new businesses to locate to the region Waratah Coal commits to:

- collaborating with local Council, economic development organisations, the Industry Capability Network (ICN) and State Government to:
  - identify the goods and services that are expected to be required by the project and inform local business of service provision opportunities and requirements of business to secure contracts;
  - develop and implement a Local Content Strategy establishing or participating in programs to assist qualified local and regional businesses tender for provision of goods and services to support the project;
  - examine options for establishing a local cooperative service or network to connect local business and supply chains and enable smaller, local businesses to collaborate in meeting service supply requirements of the project; and
  - develop strategies to encourage suppliers to locate to the region to address shortages in goods and services that are not able to be sourced within the Mine Catchment or broader project Catchment Areas. Strategy development would be led by local Council, with Waratah Coal and other proponents to inform Council of business opportunities and allow Council to appropriately plan for likely industrial / commercial land requirements.

17.6.1.4 Minimise Disruption of Agricultural Practices

The project will result in the disruption of agricultural practices through the acquisition of agricultural land for development and operation of the mine, as well as the rail line intersecting properties.

The project will require access to land that is currently utilised for agricultural purposes, including approximately 55,000 ha across six land holdings that is primarily used for grazing. Existing agriculture activities on three of these land parcels will cease for development of the mine site and above ground construction and mining activity; however, land holders will negotiate compensation for the loss of this land with Waratah Coal. The development of the underground mining operations on the other three properties will not preclude grazing activities on this land, and it is recommended that Waratah Coal negotiate with land holders to enable agricultural activities to continue on these properties.

Of key concern is ensuring adverse impacts of the project on other agricultural activities through noise, dust, stranding of assets and / or disruption of management practices are minimised.

17.6.15 Minimise Adverse Implications of Higher Property Prices

There is insufficient supply of local housing to meet anticipated increases in demand by mining contractors, executives and flow-on employees and their families migrating to the region, resulting in an increase in property and rental prices. This results in a subsequent issue in terms of insufficient supply of affordable housing in the region.

In developing strategies to minimise the adverse impacts of the project on property prices it should be recognised that pressures on property prices will be driven not only by the direct workforce of the project, but also through speculative investors and people migrating to the region due to flow-on employment opportunities. Examination of recent movements

in rental prices in the Bowen Basin show that even where worker camps are utilised, property prices will likely increase at a faster rate than would otherwise be achieved. As such, the role of mitigation strategies is to ensure that property price growth is not acute, and that the adverse impacts of an increase in property prices is minimised.

To assist in minimising potential impacts associated with higher property prices, Waratah Coal commits to:

- encouraging the use of worker camps by all FIFO Project related employees to ensure demand for housing in the local property market is minimised; and
- supporting the development of local infrastructure (this is examined in more detail in Section 17.5.2.6).

17.6.1.6 Develop Supporting Infrastructure

The project will involve the development and/or upgrade of key infrastructure in the local region, such as utilities (e.g., power, water, and telecommunications), local roads and an air-strip. However, additional social and economic infrastructure is required to support the needs of the project and its employees, as well as flow-on business and industry growth, and employees and households migrating to the region.

To ensure required social and economic infrastructure is developed to meet the direct and indirect demand generated by the project, Waratah Coal commits to:

- identifying and communicating anticipated resident and non-resident population growth and associated infrastructure requirements and impacts as early as possible to relevant government authorities (impacts on population and associated infrastructure is examined in the SIA undertaken as part of this EIS);
- working with relevant government authorities to investigate and develop anticipated cost estimates to provide social and economic infrastructure required to meet demand generated indirectly by the project, and identify appropriate cost recovery strategies for developing this infrastructure. In order for Council to appropriately fund the development of required social and economic infrastructure, sources for initial funding will likely need to be negotiated between local Council and State Government, and potentially project proponents; and
- negotiating with relevant government authorities appropriate contributions for social and economic infrastructure developments required as a direct result of activities of the project.

17.6.1.7 Minimise Adverse Impacts of Increased Traffic

The project will result in additional traffic movements due to transport of goods, services and potentially employees to support the project, particularly during the construction period, potentially increasing travel times in the local area and increasing road maintenance requirements.

A range of strategies for mitigating the adverse impacts of increased traffic are presented in Volume 2, Chapter 13. In addition to these strategies, Waratah Coal commits to:

- developing strategies to ensure project related traffic movements (in particular for goods and services) are primarily undertaken during non-peak traffic periods on local roads; and
- engaging with other mining proponents and export facility operators to ensure coal movements are appropriately managed to not create or exacerbate bottlenecks in the rail and port network.