APPENDIX R

Social Impact Assessment

MAULES CREEK COAL PROJECT

SOCIAL IMPACT ASSESSMENT

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3 June 2011

for

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MAULES CREEK COAL PROJECT
SOCIAL IMPACT ASSESSMENT

for
Aston Coal 2 Pty Limited

1 INTRODUCTION

This section provides a background and general description of the Maules Creek Coal Project including the setting and general methodology for the social assessment.

1.1 BACKGROUND

The Maules Creek Coal Project (the Project) is located approximately 18 km to the north-east of the township of Boggabri in the north-west region of NSW within the Narrabri Local Government Area (LGA).

The Project is owned by Aston Coal 2 Pty Limited (Aston), a wholly owned subsidiary of Aston Resources Limited (Aston Resources). The Project is considered to be one of only a few remaining Tier 1 undeveloped semi soft coking and thermal coal assets in NSW. Located in the Gunnedah Coal Basin, it is a large delineated coal project with a Joint Ore Reserves Committee Coal Reserve of 610 Million tonnes (Mt), capable of supporting a large open cut operation for more than 21 years.

1.2 DOCUMENT PURPOSE

Hansen Bailey has undertaken this Social Impact Assessment (SIA) for the Project. The SIA contributes to an Environmental Assessment (EA) being prepared to support an application for Project Approval under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act) to facilitate the development of a 21 year open cut coal mining operation and associated infrastructure.

1.3 THE PROJECT

The Project generally consists of:

- The construction and operation of an open cut mining operation extracting up to 13 Million tonnes per annum (Mtpa) Run of Mine (ROM) coal to the Templemore Seam;
- Open cut mining fleet including excavator / shovels and fleet of haul trucks, dozers, graders and water carts utilising approximately 466 permanent employees;
- The construction and operation of a Coal Handling and Preparation Plant with a throughput capacity of 13 Mtpa ROM coal;
- The construction and operation of a Tailings Drying Area;

- The construction and operation of a rail spur, rail loop, associated load out facility and connection to the Werris Creek to Mungindi Railway Line;
- The construction and operation of a Mine Access Road;
- The construction and operation of administration, workshop and related facilities;
- The construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River;
- The installation of supporting power and communications infrastructure; and
- The construction and operation of explosive magazine and explosives storage areas.

1.4 PROJECT SETTING

The nearest private landowners to the Project Boundary are located within 3 km of the Project to the north, north-east and north-west. Other private landowners are located to the south of the Project in the vicinity of Goonbri Road, Therribri Road and the Kamilaroi Highway.

Boggabri is a small rural township located on the Kamilaroi Highway approximately 40 km and 60 km from the larger centres of Gunnedah and Narrabri, respectively. The city of Tamworth is the main regional centre located 120 km south-east of Boggabri.

Due to the remote location of the site, the assessment of local social impacts associated with the Project has focused on the Narrabri and Gunnedah LGAs. The two combined LGAs are hereinafter referred to as the 'local area'. The local area is within the NSW Northern Statistical Division (SD).

1.5 METHODOLOGY

The SIA methodology included the following key tasks:

- Development and analysis of the existing local socio-economic setting based on a review of existing information (both statistical and anecdotal);
- Development and analysis of two scenarios for the Project workforce profile and workforce accommodation strategy for the construction and operation phases. These scenarios present the two extreme social impact scenarios arising as a consequence of the Project;
- Assessment of potential social impacts of the Project on the local area, including the social impacts associated with the workforce under the two modelled extreme scenarios;
- Consultation with neighbouring landowners;
- Assessment of potential social impacts associated with the Project with reference to existing and conceptual surrounding industry;
- Development of appropriate mitigation and management measures for any adverse social impacts, followed by consultation with stakeholders on these mitigation and management measures;

- Analysis of the potential cumulative impacts of the Project and surrounding industry. This analysis assumes that current early stage coal exploration projects proceed through technical feasibility into planning, construction and operation; however, it should be noted that not all pre-feasibility projects currently being assessed are likely to reach full operation. The purpose of the cumulative impact analysis is to evaluate, at a high level, the potential longer-term impacts of additional mining projects in the local area;
- Identification of areas for infrastructure development and growth in community services to support the local area in the future (having regard to both the modelled impacts of the Project and potential cumulative impacts); and
- A description of the likely outcomes of the Project under the 'Mitigated Case' once proposed mitigation and management measures have been implemented by Aston. The 'Mitigated Case' recognises that Scenarios 1 and 2 represent extremes of the possible social impacts and seeks to demonstrate the more moderate impacts likely to result after the application of Aston's proposed mitigation and management measures and preferred accommodation and relocation strategy.

The information contained in the SIA has been drawn from a number of sources including studies carried out by surrounding mining operations and published background information and statistical data.

The information was used to obtain a general understanding of the local setting and potential social impacts to the local area. Specific studies reviewed are referenced throughout this SIA and listed in the reference list.

The statistical data referenced in this SIA is drawn from the census data compiled by the Australian Bureau of Statistics (ABS) for both 2001 and 2006 and population and housing projections from the Department of Planning (DoP), as well as other publicly available sources.

1.6 SENSITIVITY ANALYSIS

Two scenarios have been assessed as described below in order to:

- Identify and appropriately assess potential social impacts associated with the Project; and
- Develop strategies which will adequately mitigate negative impacts on the local area and the communities.

These scenarios have been selected as they represent two 'extremes' of the potential spectrum of social impacts. Both assume that 20% of the workforce is sourced locally and 80% is non-local. The key differentiating factor is that Scenario 2 will result in no direct permanent population increase, where Scenario 1 will result in a larger population.

1.6.1 Scenario 1

Scenario 1 assumes that:

- 20% of the construction workforce associated with the Project is sourced from the local area;
- 80% of the construction workforce associated with the Project is sourced from outside the local area and will utilise accommodation supplied through a worker's accommodation village;
- 20% of the operational workforce associated with the Project is sourced from the local area; and
- 80% of the operational workforce associated with the Project is sourced from outside the local area and will relocate to the local area.

Scenario 1 assumes that, as an 'extreme', the local area is required to absorb, virtually immediately, the maximum number of new residents (i.e. the full operational workforce and their families).

1.6.2 Scenario 2

Scenario 2 assumes that:

- 20% of the construction workforce associated with the Project is sourced from the local area;
- 80% of the construction workforce associated with the Project is sourced from outside the local area and will utilise accommodation supplied through a worker's accommodation village;
- 20% of the operational workforce associated with the Project is sourced from the local area; and
- 80% of the operational workforce associated with the Project is sourced from outside the local area and will utilise accommodation supplied through a worker's accommodation village while they are rostered on (remote workforce).

This second 'extreme' assumes that there is no integration of the non-local workforce into the local community. The social impacts associated with Scenario 2 are therefore related to the utilisation of a remote workforce, travel and the proposed accommodation village.

2 EXISTING SOCIO-ECONOMIC ENVIRONMENT

The following section provides an overview of the existing socio-economic setting for the Project and the key existing socio-economic issues facing the local community. Detailed socio-economic information is provided for the local area.

2.1 LOCAL AREA SETTING

Table 1, **Table 2** and **Table 3** provide a summary of the key demographic characteristics of the local area which are discussed in further detail in the following sections. In most instances, 2006 census data has been utilised for completeness as only partial information is available for 2007 onwards.

Table 1
Local and Regional Population Growth Statistics

Town / LGA / State	Total Population (persons)		Population Change from 2001 to 2006	
	2001	2006	Persons	%
Narrabri LGA	13,800	13,106	-694	-5.0%
- Narrabri township	6,102	6,234	132	2.1%
- Boggabri township	803	901	98	1.1%
Gunnedah LGA	11,976	11,525	-451	-3.8%
- Gunnedah township	7,855	7,542	-313	-4.0%
Northern SD	172,862	172,396	-466	-0.3%
NSW	6,371,745	6,549,178	177,433	2.8%

Source: ABS Census of Population and Housing 2001 and 2006

Table 2
Local and Regional Demographic Statistics (2006)

Location	Median Age	Indigenous (% of pop.)	Total Occ. Dwellings	Occupancy Rate
Narrabri LGA	37	9.5%	4,832	2.5
- Narrabri township	36	10.6%	2,259	2.5
- Boggabri township	41	6.9%	345	2.5
Gunnedah LGA	40	10.2%	4,514	2.5
- Gunnedah township	41	12.3	3,057	2.4
Northern SD	38	7.9%	63,833	2.5
NSW	37	2.1%	114,076	2.6

Source: ABS Census of Population and Housing 2006

Table 3
Local and Regional Industry Employment Distribution (2006)

Industry	Gunnedah LGA	Gunnedah Township	Narrabri LGA	Narrabri Township	Boggabri Township	Northern SD
Agriculture, forestry and fishing	832	169	1,448	228	43	12,257
Mining	55	85	29	0	9	371
Manufacturing	361	278	295	157	15	5,081
Electricity, gas, water and waste services	38	26	61	44	6	665
Construction	168	143	323	172	19	4,409
Wholesale trade	126	93	168	94	9	2,243
Retail trade	452	367	581	339	20	8,168
Accommodation and food services	293	245	348	248	18	4,650
Transport, postal and warehousing	168	146	388	198	16	3,204
Information media and telecommunications	38	27	43	33	0	763
Financial and insurance services	66	49	73	48	0	1,429
Rental, hiring and real estate services	65	54	52	28	0	826
Professional, scientific and technical services	167	100	274	161	8	2,765
Administrative and support services	59	47	130	79	0	1,528
Public administration and safety	249	191	247	143	12	4,285
Education and training	354	229	371	178	12	6,989
Health care and social assistance	378	307	452	242	24	7,606
Arts and recreation services	39	29	36	17	3	604
Other services	211	159	258	147	9	2,988
Inadequately described / Not stated	68	92	182	78		1,837
Total	4,187	2,836	5,759	2,634	233	72,668

Source: ABS Census data 2006

2.1.1 Narrabri LGA

The Narrabri LGA is located in the Namoi Valley. According to the Narrabri National Regional Profile (ABS, 2010), the Narrabri LGA had a 2008 population of 13,507 persons. The main township in the LGA is Narrabri which in 2006 had a population of 6,102 persons which is 45.2% of the LGA population. The next largest settlements are Boggabri and Wee Waa which have 6.9% and 12.8% of the total LGA population respectively (Edge Land Planning, 2009).

Also located with the Narrabri LGA is the Maules Creek Village. The Maules Creek Village consists of a small community based in the foothills of the Nandewar Ranges. Located in the village is a 100 year old single teacher school, a community hall and some recreational facilities. The community hall is generally used for community meetings and social gatherings.

Over the past 20 years, the Narrabri LGA has experienced a loss of population across all towns, which is a trend evident in similar rural NSW communities (Edge Land Planning, 2009). Despite the population loss, the economy of the LGA has continued to grow with three coal mines recently commencing operations, another gaining consent, a new supermarket being developed and additional accommodation facilities being established in the town of Narrabri.

Based on the latest available statistical data, the Narrabri LGA is characterised by a(n):

- Declining population, with the LGA population decreasing by 711 people (5.1%) between 2001 and 2006;
- Decreasing growth in the number of private dwellings across the LGA but increased growth in the number of private dwellings in the three main towns of Narrabri, Boggabri and Wee Waa;
- Ageing population, with the median population age increasing from 36 years in 2001 to 38 years in 2006;
- Larger Indigenous population, made up of a large proportion of youth (32.8%) with a relatively high unemployment rate (28.4% of youth labour force unemployed);
- Changing employment industry with a reduction in employment in the agricultural and forestry industries, significant reduction in the manufacturing and wholesale trades and a corresponding significant increase in employment in the mining industry, with minor increases in employment in the education, health care and administrative services industries;
- Relatively high unemployment rate although this has dropped marginally from 8.1% in 2001 to 7.1% in 2006;
- High youth unemployment rate (15 – 19 years) with 16.8% of the youth labour force unemployed;
- Declining labour force size with the size of the labour force reduced by 7.1% from 2001 to 2006, with a corresponding reduction of 8.3% in the number of people employed full time in the workforce for the same period; and
- Median individual, family and household income levels lower than average NSW income levels with the median household weekly income of $792 being 23.6% less than the NSW median household income of $1,036.

Anecdotal reports and information provided by NSC suggest, however, that economic conditions in the Narrabri LGA are improving – evidenced by increasing rental prices and tightening job and housing markets (NSC, 2011). This is supported by recent ABS data demonstrating a population increase of 137 between 2008 and 2009 (ABS 2009). This growth has, in part, been driven by the coal mining and other industry expansions noted above.

2.1.2 Gunnedah LGA

The Gunnedah LGA is located in the in the Namoi Valley, 40 km from the Project. According to the Gunnedah National Regional Profile (ABS, 2010), the Gunnedah LGA had a 2008 population of 11,985 persons. The main township in the LGA is Gunnedah and in the 2006 census, approximately 75% of the LGA population lived in either the Gunnedah township or the largest outlying village of Curlewis.

Based on the latest available statistical data, the Gunnedah LGA is characterised by a(n):

- Declining population, with the LGA population decreasing by 451 people (3.8%) between 2001 and 2006;
- Ageing population, with the median population age increasing from 37 years in 2001 to 40 years in 2006;
- Decreasing number of occupied private dwellings (from 5,145 in 2001 to 5,015 in 2006);
- Stable labour force size with little change between 2001 and 2006 and only a marginal increase in the number of people employed full-time;
- Relatively high unemployment rate which has dropped marginally from 9.3% in 2001 to 8.3% in 2006;
- High youth unemployment rate (15 – 19 years) with 14.8% of the youth labour force unemployed;
- Stable employment industry with the agricultural industry continuing to be the largest employment sector;
- Indigenous population made up of a large proportion of youth (27%) with a relatively high unemployment rate (18.5% of youth labour force unemployed); and
- Median income levels substantially lower than average NSW income levels. In 2006, median weekly household income levels in Gunnedah LGA were 31% less than the median NSW household income.

Notwithstanding the statistical data, consultation with GSC suggests that economic conditions in the Gunnedah LGA are tightening – evidenced by increasing rental prices and growth in employment opportunities. This is supported by recent ABS data that demonstrates a population increase of 64 between 2008 and 2009 (ABS 2009). This growth has, in part, been driven by expansions in the coal mining industry and both in the LGA and in adjoining areas.

2.2 POPULATION AND AGE PROJECTIONS

Population and age projections for the Narrabri and Gunnedah LGAs from 2011 to 2031 are summarised in **Table 4**. The current pattern of population decline present in both LGAs is forecast to continue to 2031.

Table 4
Projected Population Changes for Narrabri and Gunnedah LGAs

Year	Gunnedah LGA		Narrabri LGA	
	Total population (persons)	Annual Population Growth	Total population (persons)	Annual Population Growth
2011	11,610	-0.6%	13,530	-0.7%
2016	11,290	-0.5%	13,070	-0.6%
2021	11,030	-0.5%	12,670	-0.6%
2026	10,790	-0.5%	12,290	-0.6%
2031	10,530	-0.5%	11,900	-0.6%

Source: DoP (2005), Edge Land Planning (2008).

2.3 LABOUR FORCE AND SKILL

2.3.1 Labour Force

Table 5 provides an indication of the available labour in the local area. Data for the total labour surplus for Australia is unavailable.

There is a relatively high rate of unemployment compared to the Australian average and also a lower rate of workforce participation. The total number of people potentially available for employment across the local area is approximately 1,640 people (unemployed and labour surplus). This indicates that although there appears to be the capacity to absorb the Project, the skills of these individuals are unknown and it is unlikely that the total workforce will be able to be sourced locally.

Notwithstanding this, both the unemployment rate and the below average participation rate support the conclusion that, with appropriate ongoing education and training initiatives, there is potential for the local area to absorb a proportion of the jobs created by the Project.

2.3.2 Labour Skill

Both the Narrabri and Gunnedah LGAs are primarily driven by agriculture, as demonstrated in the proportion of the workforce employed in the agricultural and wholesale industry sectors (see **Figure 1**). As also can be seen in **Figure 1,** the local community has a relatively small pool of skilled labour. Skilled labour represents individuals which are considered to hold expertise or specialised skills in a particular field of occupation.

In 2008 the Gunnedah District Development Board (GDDB) commenced a Skills Project to implement a holistic and joint approach to skills development in the New England and North West regions of NSW. The Skills Project was a response to the current labour shortages and anticipated future shortages. The proposed expansion in coal mining in the Gunnedah Basin was the major catalyst for the Skills Project.

Table 5
Available Labour in Gunnedah and Narrabri LGAs

	Gunnedah LGA	Narrabri LGA	Australia
Unemployment Rate %	8.3	7.1	5.7
Participation Rate %	57.2	61.3	65.5
Total Labour Force	5,108	6,198	10,793,100
Labour Surplus*	312	462	-
Unemployed	426	440	501,200
Not in Workforce or Labour Force status not stated	3,397	3,378	6,310,093
Part Timers	1,592	1,338	3,150,000
% Part time	31	22	29

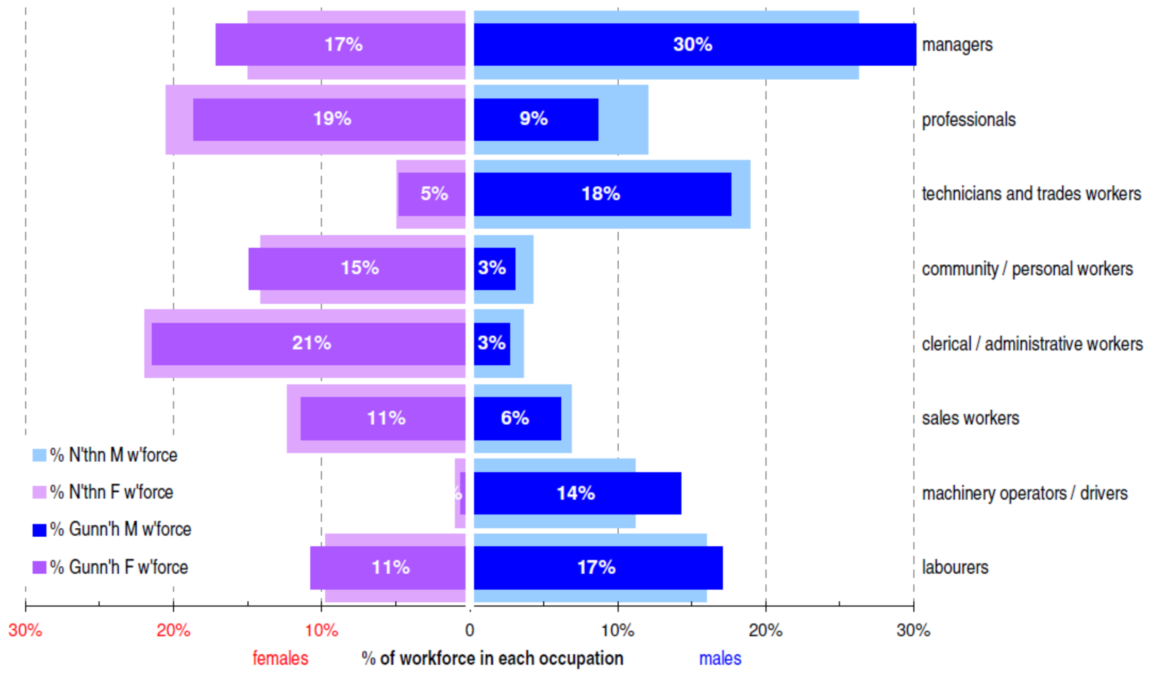
Source: ABS Census data 2006 and ABS 6202.0

**A labour surplus is where the number of employed residents of an area exceeds the number employed within the area. This means, in net terms, the difference is employed people who went elsewhere to work (e.g. next LGA).*

During forums and discussions held by the GDDB, concerns were raised that without training and employment the local community may suffer a skills shortage as people were leaving other industries to work in the mines thus causing hardships upon those other industries. This was reinforced through the results of an industry skills requirement survey completed by 109 local business representatives in which 66% of respondents expressed a belief that mining will impact on their business within five years and 71% identified that the region would experience skilled vacancy shortages in the future (within five years) (GDDB, 2008).

Skills shortage is not a localised issue. As a result of the slowing economy during the global recession, there was a general reduction in the number of occupations considered in shortage across NSW, however recovery from the downturn is providing indicators that a number of occupations are once again in shortage (Department of Education, Employment and Workplace Relations, 2010).

Figure 1
Percentage of Workforce in Each Occupation



Source: Public Practice (2009)

** 'N'thn M w'force' represents the workforce of the Northern SD.*

2.4 LAND SUPPLY

Table 6 provides a summary of the supply and demand for residential land in Narrabri LGA.

The information for Narrabri LGA has been derived from the *Narrabri Shire Draft Growth Management Strategy* (Edge Land Planning, 2009*)* for which a land use survey was undertaken in 2008.

Analysis of residential and rural residential demand and supply was carried out in the Narrabri LGA to enable an assessment of the amount of land that may be available for development in the future to meet the accommodation demands of the future population.

Based on the findings of the land use survey, in particular the number of large land stocks available in the townships of Wee Waa, Narrabri, Baan Baa and Boggabri, EDGE Land Planning (2009) concludes that there is sufficient supply of undeveloped residential land in the Narrabri LGA to meet the likely demands of the LGA for the next 10 years, even taking account of the potential increase in demand for housing in the Boggabri area as a consequence of additional mining developments.

The Gunnedah LGA does not have a growth management strategy and has not to date quantified the amount of residential land available for future development.

Information extracted from Corkery and Co (2009) suggests that at least 550 lots are currently available for residential development under the provisions of the current *Gunnedah Local Environment Plan (LEP)*. Gunnedah Shire Council (GSC) did however indicate that it is planning to allocate a resource to develop 1,000 residential lots (pers. comms. 21/07/2010).

Table 6
Existing Residential Land Supply and Demand in Narrabri LGA

Town	No. Existing Dwellings	Total Potential Additional Lots	Dwelling Growth Rate (No. Dwellings)		Dwelling Supply (years) (All Land) *	
			Low	High	Low Growth	High Growth
Boggabri	321^	505	2	5	253	101
Narrabri	1,880^	868	20	50	43	17
Baan Baa	39	832	1	2	833	416
Other	843	1,577	7	13	1,124	563
Narrabri LGA	**3,083**	**3,782**	**30**	**70**	**2,253**	**1,097**

Source: EDGE Land Planning 2009

** Totals recalculated as source had errors.*

*^ Inconsistent with ABS data in **Table 2***

2.5 LOCAL HOUSING MARKET

Data on housing rentals and sales for the local area has been drawn from the Rent and Sales Reports published quarterly by the Housing Analysis and Research unit of Housing NSW, ABS (2006) and www.realestate.com.au (2010). The data is summarised below.

2.5.1 Dwelling Type

The dominant dwelling type in the local area is separate houses which make up 88% of total dwellings. Townhouses, units and flats constitute 10% of dwellings in the local area. Approximately 65% of occupied private dwellings were either owned or being purchased and 28% were rented.

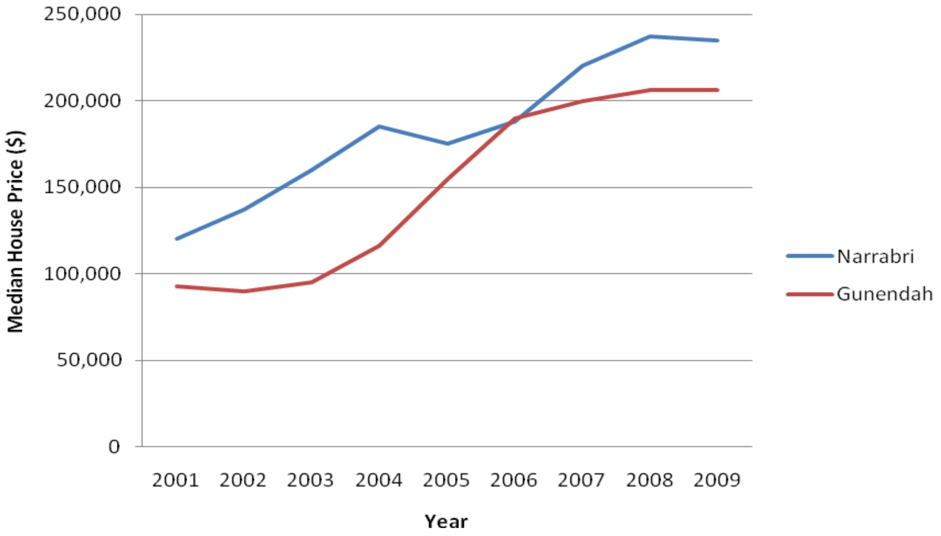
2.5.2 House Prices

The median house price for 2009 in Narrabri was $235,000 compared to $206,250 in Gunnedah. Since 2001 both Narrabri and Gunnedah have seen significant increase in house prices of 95.8% and 122.4% respectively (**Figure 2**). In the more recent years, the property price increase has become more stable. In 2009 Narrabri had the first decrease in median house price since prior to 2001. In 2009 Gunnedah experienced a stabilisation.

Property demand in the Gunnedah township is currently outstripping supply, with a gradual decrease in the number of properties available for sale. In comparison, supply is currently outstripping demand in the Narrabri township.

In October 2010, the Narrabri township had approximately 65 houses and seven units for sale. A similar search for Gunnedah produced 115 houses and 20 units for sale. There were 25 houses and no units listed for sale in Boggabri. There were 25 vacant blocks, greater than 30 vacant blocks and nine vacant blocks for sale in Narrabri, Gunnedah and Boggabri respectively.

Figure 2
Median House Price Gunnedah and Narrabri (2001-2009)



Source: www.realestate.com.au

2.5.3 Rental Prices

The private rental market represented 15.1% of all occupied private dwellings in the Narrabri township compared to 17.4% in the Gunnedah township; compared to an average of 17.3% in non-metropolitan NSW and 21.9% for the Greater Metropolitan Region.

Rental data available for the March 2009 quarter indicates that the median weekly rent for a three bedroom property was $203 in the Narrabri LGA compared with $215 in the Gunnedah LGA. The median weekly rent in the Gunnedah LGA represents a 7.5% annual increase from 2006. No annual percentages were available for the Narrabri LGA. The March 2009 quarter median weekly rent for the Gunnedah LGA represents a significant increase on the 2006 figure of $170.

Anecdotal evidence suggests that the rental market in Narrabri is very tight. In October 2010 Narrabri township had approximately two houses and one unit available for rent. Gunnedah had approximately 15 houses and six units for rent. Four houses were listed for rent in Boggabri. Although the exact numbers vary over time, this data provides a snapshot of the rental availability in the local area.

2.5.4 Housing Affordability

A comparison of median housing loan repayments across the local area indicates higher housing repayments within the Narrabri LGA when compared to Gunnedah LGA. Boggabri township has a significantly lower median housing loan repayment amount than the two LGAs. The local area has lower housing loan repayments than that of the Northern SD (**Table 7**).

Table 7
Median Housing Loan Repayments (2006)

Location	Median housing loan ($/month)
Boggabri	596
Gunnedah LGA	867
Narrabri LGA	927
Singleton LGA	1,408
Northern SD	975
Newcastle LGA	1,300
Hunter SD	1,257
Sydney Major SD	1,800
NSW	1,517

A comparison with Singleton LGA and the Hunter SD has also been carried out to illustrate the contrast of the local area to a mining LGA. The median housing loan repayments in the local area are less than that of Singleton and the Hunter SD which is comparable to NSW. When compared to the average household income (**Section 2.1**), this indicates that the local area has a more affordable housing market than other areas of NSW.

2.5.5 Hotels, Motels and Caravan Parks

There are three hotels / motels and one caravan park in Boggabri. Gunnedah and Narrabri have a further approximately 23 and 19 short-term accommodation options, respectively.

2.5.6 Worker's Accommodation Village Located in Narrabri

Narrabri Shire Council (NSC) recently approved an application for a 242 bed worker's accommodation village which is designed to accommodate the short-term housing requirements of construction workers for the numerous industrial projects in the region. The information provided below is sourced from the Statement of Environmental Effects (Caladines Town Planning Pty Ltd, 2010) provided in support of DA 97/2011 to NSC.

The facility is being developed by the MAC Services Group Ltd (MAC) which has purchased 33 ha of land at Narrabri and is expecting the village to be operational in early 2011. Significant focus has been placed on the planning and management of the village in order to manage the potential social issues associated with typical 'miner villages'. Social interaction between the people staying in the village and the general public will be encouraged through use of public facilities such as sporting facilities, pools and gyms.

The development involves the construction and operation of (NSC, 2010):

- 242 accommodation cabins in building modules of 12 cabins per module (six cabins facing each other with a curved covered walk way in between). Of those 242 accommodation cabins, 80 will be set up as a construction fly camp initially, however will be later used as part of the development without alteration. The cabins will be located approximately 2 m above ground level on concrete columns to allow passage of floodwaters;
- Construction of a central facilities building comprising of a kitchen, dining, crib, office and maintenance office;
- Construction of a temporary kitchen for construction workers for Stage 1 of the development;
- Construction of two small laundry buildings;
- Construction of two gazebo structures to provide outdoor recreation and a meeting place facility for mine workers;
- 121 car spaces (including 12 large vehicle bays), four visitor car spaces and 16 motorbike spaces;
- A minibus pick up and set down area including provision for three mini buses;
- Provision of water, sewerage, electricity and telecommunication services to the site;
- Construction of an internal road network off Arnold Street, Narrabri;
- A 12 m x 2 m corporate signage wall; and
- Onsite detention pond for any stormwater runoff from the development.

It has been reported in the media that Narrabri Coal (owned by Whitehaven Coal) has signed an agreement with MAC for 150 rooms for a period of four years. This would leave 92 available rooms for four years; with up to an additional 150 after this period. The Narrabri Village has been constructed with standard 16 sqm rooms and has been targeted towards mining contractors and employees. Aston does not intend to use this facility.

2.5.7 Worker's Accommodation Village Located in Boggabri

MAC is currently compiling a Development Application for submission in around June 2011 to NSC to progress the development of a MAC village near Boggabri to assist to accommodate the short-term housing requirements of construction and operation workers for the numerous industrial projects in the region. Should approval be granted, this facility is anticipated to provide up to 450 accommodation rooms with self contained bathrooms and includes:

- A commercial kitchen;
- Restaurant / dining area;
- Reception office and retail store;
- Fully equipped gym;
- Residents laundries;
- BBQ shelters and landscaped gardens;
- Bus pick up and drop off area; and
- Onsite parking.

Pending development approval of the village, Aston intends to utilise 350 rooms for the construction phase workers and 200 rooms for operations phase workers associated with the Project. As Aston proposes an even time roster cycle for operations workers, the 200 rooms will be capable of accommodating 400 operations workers.

The design and preparation of the planning application for this development is underway and MAC and Aston are undertaking significant consultation with NSC and other local stakeholders. The accommodation village is intended to be a motel style development with 16 sqm rooms for construction workers and larger rooms (24 sqm) for operations workers, significant landscaping and modern recreational facilities which is intended to be available for public use.

2.5.8 Public Housing

Non-private housing options in Gunnedah include housing stock held by the NSW Department of Housing (DOH), Homes North Community Housing and three Indigenous organisations. The share of total dwellings in public housing in 2006 was 4.6% in Gunnedah. There are currently around 378 social housing dwellings in Narrabri. In 2006, public housing represented 4.7% of all housing in Narrabri, which is above the average for non-metropolitan NSW of 3.5%.

2.6 COMMUNITY SERVICES AND FACILITIES

This section provides a brief overview of the services and facilities available in the Gunnedah and Narrabri LGAs. Both LGAs are serviced with health and education facilities, a range of recreation facilities and retail and commercial enterprises. Social capital in the local area is high, demonstrated through the proliferation of community groups and organisations, sporting clubs, industry bodies and support networks. A summary of community facilities and services provided in the Gunnedah, Narrabri and Boggabri townships is provided in **Table 8**.

Table 8
Summary of Community Services and Facilities

Service	Boggabri	Narrabri	Gunnedah
Emergency Services			
Police	Yes	Yes	Yes
Fire and Rescue	Yes	Yes	Yes
Emergency	Yes	Yes	Yes
Ambulance	Yes	Yes	Yes
Health / Medical			
Hospital	Yes (Community Hospital)	Yes (District Hospital)	Yes (District Hospital)
Child Health	Yes	Yes	Yes
Dentist	-	Yes	Yes (2)
Aged care facilities	Yes	Yes (2)	Yes (2)
General Practitioners	Yes (2)	Yes (8)	Yes (4)
Education and Training			
Pre-prep	Yes	Yes	Yes (2)
Primary	Yes (2)	Yes (3)	Yes (5)
Secondary	-	Yes	Yes (2)
Tertiary	-	Yes (TAFE)	Yes (TAFE)
Children's Services			
Childcare	-	Yes (5)	Yes (4)
Playgroups	-	Yes	Yes (4)
After school care	-	Yes	Yes
Youth services	-	Yes	Yes
Housing			
Public / DOH	-	Yes	Yes
Private rentals	Yes	Yes	Yes
Short-term Accommodation			
Hotels, motels and accommodation	Yes (4)	Yes (23)	Yes (19)
Cultural			
Library	Yes	Yes	Yes
Churches	Yes (4)	Yes (7)	Yes (11)
Cultural Centre / Museum	Yes	Yes (2)	Yes
Cinema	-	Yes	Yes
Government Offices			
Local	-	Yes	Yes

Service	Boggabri	Narrabri	Gunnedah
State	-	Yes	Yes
Access			
Road	Yes	Yes	Yes
Rail	Yes	Yes	Yes
Air	-	Yes	Yes
Public Transport			
Airport	No	Yes	No
Bus	-	Yes	Yes
Taxi	-	Yes	Yes
Sport			
Organisations	Yes	Yes (25)	Yes (>36)
Facilities	Yes	Yes	Yes
Community Organisations	Yes (11)	Yes (14)	Yes (30)

Source: information compiled from numerous sources including: EDGE Land Planning 2009; www.whitepages.com.au (2010); www.yellowpages.com.au (2010); NSC (online, 2010); GSC (online, 2010)

2.6.1 Education Facilities

Primary, secondary and tertiary educational facilities are provided in the Narrabri and Gunnedah LGAs. Many townships have family daycare, childcare and pre-school facilities. The closest University facilities are provided in Armidale at the University of New England.

The following information on current enrolments and enrolment capacity at schools in Narrabri, Gunnedah and Boggabri was extracted from Corkery & Co (2009):

- 896 primary school students and 595 secondary school students enrolled in the three primary schools and one secondary school in Narrabri;
- 1,039 primary school children and 917 secondary school children attending the four primary schools and two high schools in Gunnedah. There is a combined capacity to enrol 1,212 in the primary system and 1,520 students in the secondary system; and
- 138 primary students enrolled in the state and Catholic schools in Boggabri with a joint capacity of 205.

In addition to the above schools, Fairfax School located in the Maules Creek Village currently has seven enrolled primary students with a maximum capacity of 60.

2.6.2 Health

Introduction

The local area is served by local hospitals in the townships of Narrabri, Gunnedah, Boggabri and Wee Waa. The Narrabri hospital is a 40 bed facility and the Gunnedah Hospital is a 48 bed facility. Both provide general medical and surgical services and obstetric care. The Boggabri Hospital was constructed in 2002 and provides hospital and health services and 16 aged care places with associated facilities. The Wee Waa Hospital is a 22 bed establishment which has 24 hour emergency care, x-ray services and counselling. The total number of beds in the region is 126.

Additional healthcare facilities are provided at community health centres in the towns of Narrabri, Boggabri, Wee Waa and Gunnedah. Aged care facilities are also available in the same communities. Home and Community Care (HACC) provides services in Gunnedah, Boggabri and Narrabri.

A comparison of NSW Department of Health and NSW Department of Health and Aging published data was undertaken to determine the adequacy of the existing facilities available at the above discussed hospitals as shown in **Table 9**.

Treatment time at the hospitals can be considered an indication as to the availability of resources within the facility. **Table 9** indicates that on comparison to the NSW average, service at each of the available hospitals is significantly above average for the State.

Table 9
Comparison of Patients treated within National Benchmark Time

Triage Category (Treatment time)	NSW (%)	Gunnedah (%)	Narrabri (%)	Boggabri (%)	Wee Waa (%)
1 – Need for resuscitation (< 2 min)	100	100	100	100	100
2 – Emergency (< 10 min)	88	100	98	100	100
3 – Urgent (< 30 min)	77	99	96	94	84
4 – Semi-urgent (< 60 min)	67	99	97	96	96
5 – Non-urgent (< 120 min)	64	100	100	100	100

Source: NSW Department of Health and Aging (2010) and NSW Department of Health (2010).

Mental Health

The *National Rural Health Alliance Inc.* (2009) describes the prevalence of mental health conditions in rural and remote Australia as being generally equivalent to the rest of Australia; however, rural and remote areas have 1.2 - 2.4 times higher rates of suicide. Lack of availability of mental health services and higher rates of financial insecurity relating to natural disasters including drought, floods, bushfire and pest infestations are considered leading causes of this significant statistical difference.

Gunnedah has a number of General Practitioners (GPs) which provide mental health care (www.yellowpages.com.au, 2010). Also located in Gunnedah is the Gunnedah Community Mental Health Team which operates from the Community Heath Building. Narrabri also has a number of GPs and a Community Health Service which provides counselling services.

2.6.3 Recreation

The Narrabri and Gunnedah LGAs are both well served with a range of sporting and recreational facilities and cultural organisations including:

- Olympic size swimming pool;
- Cinemas;
- Golf course;
- Restaurants;
- Sporting ovals; tennis, squash, basketball and netball courts;
- Racecourse;
- Public libraries;
- Art Gallery; and
- Religious institutions.

2.6.4 Commercial, Retail Facilities and Services

The townships of Gunnedah and Narrabri boast an array of commercial and retail facilities including main line supermarkets, pharmacies, banks, drycleaners, fashion outlets and real estate agents. There are a number of professional services including insurance agencies, veterinary practices, accountants, agricultural consultants, solicitors, surveyors, etc. Both townships are self sufficient with residents having little need to travel to large centres for goods and services.

Boggabri supports a small variety of commercial and retail facilities, including a pharmacy, IGA supermarket, service station, RSL club, library and takeaway food stores.

2.6.5 Narrabri Airport

Narrabri Airport is serviced by Aeropelican and provides flights between Narrabri and Sydney (12 per week), Newcastle (10 per week) and Brisbane (10 per week) (Aeropelican, 2011). The airport service provides medical professionals, business professionals and other key service groups a convenient and accessible way to visit and service the area (NSC, 2007).

2.7 MINING DEVELOPMENT

The Gunnedah Basin is one of the primary coalfields in NSW, along with the Hunter Valley, Newcastle, Southern NSW and Western NSW (Great People Systems Pty Ltd, 2009). In the NSW Coal Fields there are presently 60 coal mines and 30 development projects (DPI, 2006). In the Gunnedah Basin there are 11 'Existing Approved Projects' with EA's or Preliminary Environmental Assessments publicly available as shown in **Table 10**.

Table 10
Proposed Mining Projects in Gunnedah Basin

Project	EP&A Act Status	Owner / Proponent	Comment	Workforce	Production	Distance to Project
Canyon Mine	Approved	Whitehaven Coal Mining Ltd	Production ceased, soon to close	48 employees as at 19 August 2008	1.25 Mtpa (ROM)	15 km South
Sunnyside Coal Project	Approved	Namoi Mining Pty Ltd (Whitehaven Coal Mining Ltd)	Production phase	20 full time employees employed during construction Operational workforce up to 40 full time equivalent employees	1 Mtpa (ROM)	28 km south-west
Werris Creek Mine	Approved	Whitehaven Coal Mining Ltd	Production phase	66 employees	1.5 Mtpa (ROM)	70 km south-east
Rocglen Coal Mine	Approved	Whitehaven Coal Mining Ltd	Production phase	20 full time employee equivalents for site establishment 54 full time and 13 part time employee equivalents for operation of mine	1.5 Mtpa (ROM)	17 km south-east
Rocglen Coal Mine Extension	Director General Requirements Issued	Whitehaven Coal Mining Ltd	Extension Project in application phase	Utilisation of existing 54 employees	1.5 Mtpa (ROM)	17 km south-east
Boggabri Coal Mine	Approved	Idemitsu Australia Resources Ltd	Production phase	Approximately 150 (employees and contractors)	5 Mtpa (Product)	Adjacent
Boggabri Coal Mine Continuation	Adequacy	Idemitsu Australia Resources Ltd	EA at adequacy stage of approval	Up to 500 full time equivalent employees at peak production	7 Mtpa (Product)	Adjacent
Narrabri Coal Mine Stage 1	Approved	Narrabri Coal Pty Ltd (Whitehaven Coal Mining Ltd)	Early stages of mining operations	Construction workforce of 80 employees (additional 35 for stage 1 year 1) Operational workforce of 94 - 113	2.5 Mtpa (Product)	30 km north-west

Project	EP&A Act Status	Owner / Proponent	Comment	Workforce	Production	Distance to Project
Narrabri Coal Mine Stage 2	Approved	Narrabri Coal Pty Ltd (Whitehaven Coal Mining Ltd)	Early stages of mining operations	75 full time equivalent employees during construction 186 mine employees and 25 staff for mine operation (equates to 98 additional to Stage 1 operations)	8 Mtpa (Product)	30 km north-west
Tarrawonga Mine	Approved	Whitehaven Coal Mining Ltd – 70%, Idemitsu Australia Resources Pty Ltd – 30%	Production phase	60-70 employees	1.5 Mtpa (Product)	Adjacent
Tarrawonga Mine Modification	Assessment	Whitehaven Coal Mining Ltd – 70%, Idemitsu Australia Resources Pty Ltd – 30%	Under Assessment	Ongoing utilisation of current 60-70 employees	2 Mtpa (Product)	Adjacent
Maules Creek Mine	EA Phase	Aston Mining Pty Limited	Greenfield mine	340 construction employees 466 operational employees	13 Mtpa (ROM)	N/A
Narrabri Coal Seam Gas Project	DGRs Issued	Eastern Star Gas Limited	PEA Submitted	>500 construction employees >200 operational employees	6,215 Petajoule (PJ)	30 km
Watermark Project	Exploration Licence (EL) Only	Shenhua Watermark Australia	Pre feasibility	Not Available Assume 600 full time	Not Available.	75 km south south-east
Caroona Project	EL Only	BHP Billiton	Pre feasibility	Not Available Assume 600 full time	Not Available.	85 km south south-east
Goonbri Project	EL Only	Goonbri Coal Company Pty Limited	Early stages, pre exploration	Not available. Assume 70 full time	Not Available.	6 km south-east

Table 10 indicates that approximately 591 people are employed directly in mines in the Gunnedah Basin with potential for a significant increase with development of the Rocglen extension, Boggabri extension, Maules Creek, Watermark, Caroona and Goonbri mines. The coal mines in the Gunnedah Basin are concentrated in the Boggabri - Baan Baa area, to the north north-west of Gunnedah, with a secondary node at Werris Creek in the south-east corner of the Basin. JRA (2007) reports that the regional centre of Gunnedah is emerging as the mining service centre for the area with a diverse range of services and facilities supporting not only the mining industry but also related emerging industries.

Figure 3 demonstrates the anticipated timing of each with reference to surrounding projects. It is anticipated that in Year 2022 (approximately Project Year 10) the Project has a potential to occur simultaneously with two existing short-term mining projects, two existing longer-term mining projects and one gas project (pending approval), and an additional three mine projects (assuming applications are made and subsequent approval granted). It is important to note that early stage exploration projects have been included and, for such projects, it is difficult to assess if they will be feasible from an economic or technical perspective let alone from an environmental and planning perspective.

Additionally, there is minimal or no publically available information relating to residential assumptions, timing, number of employees or proportion of remote employees. As such, broad and conservative assumptions have been made regarding these 'potential future projects'.

Figure 3
Proposed Timing of Mining Projects in the Gunnedah Basin

Project	2010	2012	2014	2016	2018	2020	2022	2024	2026	2028	2030	2032	2034	2036	2038	2040	2042	2044
Sunnyside Coal Project			40															
Werris Creek Mine			66															
Rocglen Coal Mine (Extension)			54				54											
Boggabri Coal Mine & Continuation			150				500											
Narrabri Coal Mine Stage 1 & 2			211				211											
Tarrawonga Mine Expansion			70				70											
Maules Creek Mine			280				466											
Narrabri Coal Seam Gas Project							200											
Watermark Project							600											
Caroona Project							600											
Goonbri Project							70											

Existing mine life approval   Proposed mine life   The Project

2.8 EXISTING ENVIRONMENT ISSUES SUMMARY

The socio-economic issues currently present in the Narrabri LGA can largely be attributed (directly and indirectly) to the decline in the agricultural and wholesale trade employment sector. The existing socio-economic issues have been documented in earlier EA reports prepared for previously proposed mines in the region (e.g. Narrabri Coal Mine Stage 1 and Stage 2). Dominant existing issues include:

- Pattern of population decline;
- High unemployment rates (particularly youth rates);
- Need for greater economic diversity in light of the decline being experienced in the agricultural industry;
- Labour force and skill shortages;
- Indigenous employment opportunities;
- Long-term housing availability and affordability; and
- Potential impact of the growth in the mining industry.

3 PROJECT WORKFORCE

This section outlines the workforce requirements for the construction and operational phases of the Project, as well as quantifies the local and non-local hire needs and predicted residential location pattern.

As noted previously, Scenarios 1 and 2 are ‘extreme’ scenarios to assess the potential maximum social impacts. After the application of proposed mitigation and management strategies a more moderate ‘Mitigated Case’ outcome is likely.

3.1 PROJECT WORKFORCE – SCENARIO 1

3.1.1 Construction Workforce

Project construction is anticipated to commence in Year 1 and continue for a period of 15 months. The anticipated peak workforce during construction is 340 equivalent full time persons.

3.1.2 Operational Workforce

During operations, the Project will employ approximately 239 persons in Year 1. The workforce will increase to approximately 398 employees by Year 5 following full production being achieved. A peak operational workforce of approximately 470 will be utilised.

3.1.3 Labour Force Supply

The Project is located between the townships of Gunnedah and Narrabri and hence is able to attract employees from either location. There will be a large number of job availabilities in a short space of time which the local community may have difficulty absorbing.

In rural and remote locations, approximately 80% of a construction workforce will generally be required to be sourced from outside the local area due to the specialised nature of the work (Coakes Consulting, 2009). Due to the size of the available workforce, a worst case scenario of 20% local hire has been used to determine operational personnel sources.

For the purposes of Scenario 1 it has been anticipated that:

- 20% (68 employees) of the peak construction workforce will be local hires and 80% (274 employees) non-local hires; and
- At peak production, 20% (93 employees) of the operations workforce will be local hires and 80% (373 employees) will be non-local hires, with 20% (75 employees) of these drawn from outside the Northern SD and interstate.

Non-local hires will predominantly consist of experienced maintenance workers, mine operators and professional staff. Local hires are likely to include mine operators, maintenance workers, local ancillary staff, apprentices and graduates.

3.1.4 Labour Force Residence Location

A review of the Narrabri Coal Mine Stage 2 SIA (Corkery & Co. Pty Limited, 2009) and Boggabri Coal Mine SIA (Hansen Bailey, 2010) was undertaken in order to determine the appropriate breakdown of workforce residential distribution.

Corkery & Co. Pty Limited (2009) estimated 90% of the workforce would equally settle in Gunnedah or Narrabri, with the remaining 10% residing in smaller towns such as Wee Waa or Boggabri.

Table 11 illustrates the residential towns which Boggabri Coal Mine draws upon for its existing workforce. The data for current operations at Boggabri Coal Mine indicates that, 39% of employees are based in Gunnedah, 25% are located in Narrabri and 19% reside in Boggabri. Due to the close proximity of Boggabri Coal Mine to the Project, this data has been assumed to be the most suitable comparison for this SIA. It is anticipated that the workforce residential distribution for the 93 local hires will be similar to that of Boggabri Coal Mine.

It has been assumed that all non-local hire operational employees will relocate to the local area with the following distribution: 30% Gunnedah; 55% Narrabri; 10% in Boggabri and the remainder in other local areas (**Table 11**). The rationale for the predicted residential pattern for non-local hires is to mitigate against cumulative impacts in Gunnedah. This would be achieved through Aston's commitment to encouraging non-local hires to relocate to the Narrabri LGA (as outlined in more detail in **Section 9**).

The residential pattern associated with the construction phase workforce is anticipated to include the same residential breakdown for the 68 local hires as described in **Table 11**. The remaining 274 non-local hires will require short-term accommodation options and will utilise the proposed worker's accommodation village located near Boggabri.

Table 11
Existing Boggabri and Potential Workforce Residential Pattern

Residential Location	Residential Pattern of Boggabri Coal Workforce (%)	Projected Residential Pattern of new local hires (%)	Anticipated Residential Pattern of non-local hires (%)
Narrabri Township	25	25	55
Gunnedah Township	39	39	30
Boggabri Township	19	19	10
Other local areas	14	17	5
Other North Western NSW Areas	3	-	-

Hansen Bailey (2010)

3.2 PROJECT WORKFORCE – SCENARIO 2

3.2.1 Construction Workforce

Project construction is anticipated to commence in Year 1 and continue for a period of 15 months. The anticipated peak workforce during construction is 340 equivalent full time persons.

3.2.2 Operational Workforce

During operations, the Project will employ approximately 239 persons in Year 1. The workforce will increase to approximately 398 employees by Year 5 following full production being achieved. A peak operational workforce of approximately 466 will be utilised.

3.2.3 Labour Force Supply

Due to the difficulty in absorbing such a large number of job availabilities in a short space of time, this second scenario has been considered which involves the utilisation of a remote workforce.

The same assumption that approximately 80% of a construction workforce will generally be required to be sourced from outside the local area and 20% will be local hires has been assumed for Scenario 2.

For the purposes of Scenario 2 it has been anticipated that:

- 20% (68 employees) of the peak construction workforce will be local hires and 80% (274 employees) non-local hires; and
- At peak production, 20% (93 employees) of the operations workforce will be local hires and 80% (373 employees) will be non-local hires. Of the non-local hires, it is assumed that 75% (280 employees) will be remote and travel by air (via Narrabri Airport), and 25% (93 employees) will travel by car and bus to / from other regional centres. The 80% non-local hires will utilise the Boggabri MAC accommodation.

It has been assumed that non-local hires will predominantly consist of experienced maintenance workers, mine operators and professional staff. Local hires are likely to include mine operators, maintenance workers, local ancillary staff, apprentices and graduates.

3.2.4 Labour Force Residence Location

The anticipated residential breakdown for the workforce under Scenario 2 includes:

- Local hires for both the construction and operational workforce having the same residential breakdown as the existing Boggabri Coal workforce presented in **Table 11** and being: 39% of employees based in Gunnedah, 25% located in Narrabri, 19% reside in Boggabri and 14% from other local areas; and

- Non-local hires during shifts utilising:
  - 350 beds within the worker’s accommodation village to be located at Boggabri for construction workers; and
  - 200 beds within the worker’s accommodation village to be located at Boggabri for operation workers.

Of the non-local operational workforce, it is anticipated that 75% will travel by air from areas greater than 200 km from the Project (for example Newcastle, Sydney, Wollongong or interstate.) to the worker’s accommodation village. It is anticipated that the remaining 25% will travel by bus or car (both personal vehicles and chartered buses) from areas such as Moree, Tamworth and Muswellbrook to the worker’s accommodation village. It is expected that this model overstates the proportion of long distance (air) travel to ensure maximum impacts are assessed.

4 STAKEHOLDER ISSUES IDENTIFICATION

This section outlines the stakeholder consultation process, and key identified regulator, landholder and local community issues. A detailed discussion of the stakeholder consultation process is provided in the main volume of the EA along with project related issues and how each has been addressed. A review of the media was also undertaken to identify any mining-related issues for the Gunnedah Basin.

4.1 STAKEHOLDER CONSULTATION SUMMARY

Table 12 summarises the stakeholder consultation process carried out to date.

Table 12
Stakeholder Consultation Process

Stakeholder	Engagement Method
Community Stakeholders	
Individual Near Neighbours	• Offer of Briefings to near neighbours in Project Newsletters • Face to face briefings (approx. 10 individual near neighbours) • Project Newsletters • Local media coverage
Gunnedah, Narrabri and Maules Creek Local Communities	• Project Newsletters • Local media coverage • Boggabri Business Promotions Association – various monthly meetings • Fairfax School Maules Creek Meeting on 16 November 2010 • Presentation to Boggabri Business Community on 18 April 2011 • Presentation to Narrabri Business Community on 18 April 2011 • Presentation to Gunnedah Business Community on 16 May 2011 • Maules Creek Campdraft Committee (various meetings) – Campdraft on 26/27 March • Boggabri Community meeting (re: MAC Accommodation Village on 11 April 2011) • Maules Creek Recreation Reserve Committee - various meetings
Aboriginal Community	• Notice in Paper on 15 June 2010 • Aboriginal Heritage Planning Meeting on 10 August 2010 • Fieldwork on 23 August – 10 September 2010 and 29 September – 1 October 2010 • Review of Draft Assessment (3 November 2010 – 1 December 2010) • Briefing with Red Chief Land Council – 9 February 2011
Relevant Neighbouring Mines, Industry and Service Providers	• Project Newsletters • Face to face meetings • Consultation in relation to the implementation of a regional EMP • CRC and University of NSW – discussions in relation to the groundwater impact assessment • Ochre Health – Discussions on Medical facilities and resources Boggabri on 11 May 2011

Stakeholder	Engagement Method
Regulatory Stakeholders	
SEWPaC	• Project Briefing on 1 September 2010 • Project Newsletters • Follow up Briefing on proposed offsets on 14 December 2010 • Briefing with Minister T Burke on 7 March 2011
DoP	• Initial Project Briefing on 16 March 2010 • Project Update Meeting on 29 June 2010 • Planning Focus Meeting (PFM) on 21 July 2010 • Cumulative impact discussions with neighbouring miners on 28 October 2010 • Project Newsletters • Follow up briefing on proposed offsets on 2 December 2010
GSC Mayor, General Manager and Planning Manager	• Project Briefing in March 2010 • PFM on 21 July 2010 • Project Newsletters • Various briefings and discussions including discussions on the Voluntary Planning Agreement
NSC Mayor, General Manager and Councillors	• Project Briefing March 2010 • PFM on 21 July 2010 • Various briefings and discussions, including discussions on the Voluntary Planning Agreement • NSC Presentation MAC Village Boggabri 15 March 2011 • Project Briefing on 5 April 2011 • Project Newsletters
DECCW	• PFM on 21 July 2010 • Project Newsletters • Presentation of draft findings for noise, air quality and Aboriginal Heritage and proposed Offsets on 20 December 2010
NOW	• PFM on 21 July 2010 • Meeting in Tamworth on 22 November 2010 • Project Newsletters • Various briefings and discussions
I&I NSW	• Meeting to discuss draft MOP on 9 April 2010 • Project Summary Note 28 April 2010 • CPDP meeting with I&I NSW to discuss mine plan on 6 May 2010 • PFM on 21 July 2010 • Mining tenement planning discussion on 27 August 2010 • Project Briefing on 23 February 2011 • Project Newsletters

Stakeholder	Engagement Method
Namoi CMA	• PFM on 21 July 2010 • Project Newsletters • Project briefing and discussion of Offset Strategy and findings of other technical assessments on 8 February 2011
RTA	• PFM on 21 July 2010 • Project Newsletters • Project briefing and discussion of traffic impact assessment on 16 February 2011
ARTC	• PFM on 21 July 2010 • Project Newsletters • Various briefings and discussions
Country Rail Infrastructure Authority (CRIA)	• PFM on 21 July 2010 • Project Newsletters
Maules Creek Community Council Committee	• Various briefings and discussions
Relevant State and Commonwealth Members of Parliament	• Project briefing with Peter Draper, former State Member for Tamworth in March 2010 • Project Briefing with Kevin Humphries, Minister for Western NSW in May 2011 • Project Briefing with Kevin Anderson State Member for Tamworth in May 2011 • Project Newsletters

4.2 REGULATORY CONSULTATION SUMMARY

A summary of regulator issues identified throughout the consultation process is provided in **Table 13**.

Table 13
Regulator Project Related Issues

Ref	Issue Raised	Who Raised?
1	***Air Quality***	
a	An assessment of PM_{10} 24 hour average on a cumulative basis in accordance with the Approved Methods	DECCW
b	Air quality predictions provided for vacant land, receivers and background levels	DoP
2	***Employment and Community***	
a	Socio-economic study with regard to employment	GSC
b	Socio-economic study with regard to cumulative impacts of population growth	GSC
c	Potential conflicts with Agriculture such as employment base, accommodation and rail competition	I&I NSW
d	Training and employment opportunities for cleanskin local labour	NSC
e	Housing requirements and opportunities as a result of the Project	NSC
f	Early development of Community Consultative Committee	NSC
g	Cumulative impacts of mining on sense of community and local agricultural industry	NSC, GSC
h	Impact on the local housing and development market	NSC, GSC
i	Economic impacts to the GSC and NSC LGAs and provision of services and infrastructure	NSC, GSC
3	***Noise and Blasting***	
a	Operational noise for the Project kept below 35dB	DECCW
	Requirement to include inversions within the Noise Assessment	DECCW
b	Noise generated from additional rail movements as a result of the Project	DoP, RTA
c	Noise assessment to provide a detailed review of potential cumulative noise impacts from the Project and other mining operations	DECCW, DoP
e	Cumulative blasting impacts from the Project and other mining operations in relation the number of blasts per day	DECCW
6	***Surface Water***	
a	Maintenance of Namoi River flow throughout bridge construction	NOW
b	Address the Namoi Catchment Action Plan targets	Namoi CMA
c	The potential for the Project to impact on regional surface water catchments and water quality, especially in consideration of the agricultural industry	I&I NSW
7	***Groundwater***	
a	The potential for impacts on local and regional groundwater reserves, especially in consideration of the agricultural industry	I&I NSW

Ref	Issue Raised	Who Raised?
b	Impact on nearby residents as a result of connection between the alluvium and the Permian coal measures	NOW
C	Cumulative impact of neighbouring mines altering regional groundwater resources including depressurisation linkage Boggabri Coal	NOW
8	***Traffic***	
a	One rail line and bridge in consultation with Boggabri Coal	DoP
b	Assumptions used with regard to cumulative impacts of rail additions	DoP
c	Concern relating to the noise impacts of rail movement on the Werris Creek and wider community	DoP, NSC, DECCW
d	Increased traffic volumes for local road and rail network as a result of the Project	DoP, RTA, NSC, GSC,
e	Increased number of rail movements travelling through Gunnedah township	GSC
f	Request provision of information and input into rail bridge spur and access road prior to lodgement	NSC
9	***Final Land Use and Void Management***	
a	Potential land use for the area on completion of the Project and potential loss of agricultural land	I&I NSW
b	Rehabilitation should be described as part of the proposal rather than an impact	DoP
10	***Cumulative Impacts***	
a	Expectation that Aston will work with Boggabri Coal to resolve any cumulative impact issues	DoP
11	***Flora, Fauna and Heritage***	
a	Development of appropriate offset commitments	DECCW
b	Direct impacts of Project on CEEC Box Gum Woodland Community	DECCW
c	Cumulative impact (including indirect impacts) of mining on the local environment and flora and fauna species, especially with regard to Critically Endangered Ecological Communities	DECCW
d	Upgrading riparian corridor on Namoi River would be positive.	DoP
e	Offsets should be considered strategically with other mines and a bio banking assessment of the offsets should be completed	DECCW
f	Aboriginal heritage offsets should be combined with biodiversity offsets	DECCW

4.3 NEAR NEIGHBOUR CONSULTATION SUMMARY

As at 1 December 2010, discussions had been held with 10 neighbouring landholders. Responses to issues of concern related to the Project are listed in **Table 14**. Near neighbour liaison was initiated early in the planning stages and continued throughout the EA process. Project related issues identified by neighbours were non-specific and generally related to the physical environment.

4.3.1 Community Project Issues

Table 14 provides a summary of the key social and environmental issues identified during landholder discussions.

4.3.2 Community Needs Survey

As part of near neighbour consultation each landowner was also asked 'As part of the Project, Aston is likely to offer contributions to the local council. Do you have any views on what this monetary contribution should be spent on in the local community?' **Table 15** summarises each area of expenditure raised and the number of responses for each area.

Table 14
Near Neighbour Stakeholder Project Related Issues

Ref	Issue Raised	No. of Times Raised
1.	Noise impacts	9
2.	Dust generation	7
3.	Ground water impacts	8
4.	Visual amenity	5
5.	Surface water impacts	4
6.	Air quality impacts	2
7.	Light pollution	1
8.	Water	1
9.	Traffic and roads impacts	2
10.	Loss of firewood and fencepost resource	1
11.	Changes to community from peaceful to neighbouring mine site	1
12.	Impact on local property prices	1

Table 15
Landholders Community Needs Summary

Ref	Issue Raised	No. of Times Raised
1.	Improved healthcare	7
2.	Improved education	6
3.	Improved roads	6
4.	Require another doctor at Boggabri	3
5.	Improved Indigenous health facilities	1
6.	Improved daycare facilities	1

4.4 MAULES CREEK COMMUNITY COUNCIL

A meeting was held at the Maules Creek Hall with the Maules Creek Community Council on 30 October 2010 which was attended by representatives from Aston, Hansen Bailey and over 60 individuals and aimed to identify and respond to the concerns of the community. The community was provided the opportunity to submit a series of questions prior to the meeting, which Aston responded to at the meeting. A presentation was provided to the community which detailed the Project and the EAs and methodologies which will be carried out in order to identify areas of impact.

Issues raised by the Maules Creek Community Council are summarised in **Table 16**.

Table 16
Maules Creek Community Council Issue and Concern Summary

Ref	Issue Raised
1	***Air Quality***
a	Monitoring of $PM_{2.5}$
b	Fitting of machinery with filters
c	Monitoring locations, responsibility and data availability
d	Community input into monitoring locations
e	Source and relevance of wind data
f	What dust and environmental conditions will lead to triggers to cease mining
g	Cease mining trigger thresholds and community participation in triggers
h	Dust generation from rail movements and use of chemical dust suppressants or covers
i	Dangerous gas emissions relating to blasting and monitoring of such emissions
j	Dust impact on stock, pasture and crops
k	Implementation of only one $PM_{2.5}$
l	Machinery ability to meet or exceed Tier 4 emissions standards
2	***Water Quality and Quality***
a	Water testing for heavy metals
b	Potential penetration of groundwater aquifer
c	Penetration of the aquifer by chemicals use in coal washing facility
d	Burial of chemicals in pit
e	Sediment deposition into Maules Creek
h	Compensation if groundwater is affected
i	Forensic water testing on grid moving out from the mine to develop baseline data
3	***Trains and Traffic***
a	Rail line intersecting with Therribri Road and Kamilaroi Highway
b	Road transport of coal
c	Need for helicopter pad
d	Employee road use

Ref	Issue Raised
e	Sealing of Therribri Road
f	Times of shift change
g	Control of traffic on smaller roads
h	Location of roads and Maules Creek Village on maps
i	Need to upgrade Iron Bridge to B-Double standard if proposed to be preferred route
j	Capability of railway to handle increased transport
k	Impact of railway on other freight and passenger trains
l	utilising shared rail facilities with other mines
m	Absence of Browns Land on maps and possibility of traffic studies on the road as Browns Lane provides a shorter route to the mine
n	Public road contributions
4	***Noise and Blasting***
a	Distance of blast noise and vibration impact
b	Blasting schedule and communication of schedule to community
c	Operational noise levels and noise minimisation techniques
d	Train noise minimisation
e	Train line operation times
f	Operation hours
g	Assessment of noise impact on stock
5	***Land Acquisitions***
a	Purchase of ‘offset’ blocks and type and size of land of interest
b	Future use of acquired land
6	***After 20 Years – What Next?***
a	Final void
b	Plans for mining after 20 years
7	***Other***
a	Recognition as a stakeholder and regular ongoing consultation ‘at every step of the process’
b	Time of two day open forum in Boggabri
c	Consultation with community as part of assessments / studies
d	Impacts on and Communications with Fairfax School in Maules Creek
e	Method of calculation of net production benefit to society and period of delivery
f	Intentions for Authorisation 346
g	Destination of coal
h	Timing and length of EA exhibition period
i	Sale of gravel to Councils

Additionally, a meeting was also held between with the Principal of Fairfax School at Maules Creek. The main concerns and needs identified for the school are described in **Table 17**.

Table 17
Fairfax School at Maules Creek Concerns and Needs Summary

Ref	Issue Raised
1.	Reducing pupil numbers
2.	Air conditioning
3.	Water supply to top floor of the building
4.	Removal of redundant equipment such as gas bottles

4.5 MEDIA

A review of media sources was conducted in order to identify the general assumptions and concerns of the wider community. The main concerns identified included competition for land and water resources, the progression of the Namoi water study and coal seam gas mining.

Positive contributions which mining companies provide to the community are also regularly demonstrated in the local community newspapers and on community radio, including details of financial contributions made to community based projects and development of educational and training programs.

All issues raised by various stakeholders have been addressed in the main volume of the EA.

5 CONSTRUCTION PHASE IMPACTS

This section outlines the predicted impacts of the construction phase of the Project on housing and accommodation, the labour pool, small business and community facilities and services.

As noted previously, Scenarios 1 and 2 are ‘extreme’ scenarios to assess the potential maximum social impacts. After the application of proposed mitigation and management strategies a more moderate ‘Mitigated Case’ outcome is likely.

The demand for short-term accommodation for construction workers will be up to 340 units of accommodation (assuming one single accommodation unit per worker). Assuming 20% (68 employees) of the construction workforce is employed from the local area and can be accommodated in their existing housing, the remaining 80% (272 employees) will require local accommodation.

The trend of the construction phase workforce requirements indicates a peak of approximately 340 employees in month nine of construction, reducing at the commencement and cessation of the construction period. The greatest impact on housing and accommodation facilities will be during this peak period.

5.1 CONSTRUCTION PHASE IMPACTS – SCENARIO 1 AND 2

The construction phase of the Project is likely to have a short-term impact on housing and accommodation in the region. Aston, in conjunction with MAC, is pursuing an application for a worker’s accommodation village in the vicinity of Boggabri township (see **Section 2.5.7**) in order to assist in accommodating the workforce for the Project.

As a result of the short-term nature of the construction phase, the majority of non-local hires are unlikely to bring families. In light of this, there will be minimal impact on the population of the region as well as community values, aspiration and lifestyle.

In contrast there will be an increase in utilisation of local businesses, especially hospitality and small businesses. There is also likely to be a short-term increase in the use of health facilities, which the available facilities are likely to be able to absorb.

The impacts on the labour pool of the region resulting from the construction phase will be minimal. The anticipated 68 local hires will be easily absorbed from the available workforce however, the Project will strain the skilled labour force in the local area.

6 OPERATIONAL PHASE IMPACTS - SCENARIO 1

This section outlines the predicted impacts of the operational phase of the Project under Scenario 1 on the population, housing and accommodation, labour pool, small business, community facilities, services, community values aspirations and lifestyles.

As noted previously, Scenarios 1 and 2 are ‘extreme’ scenarios to assess the potential maximum social impacts. After the application of proposed mitigation and management strategies a more moderate ‘Mitigated Case’ outcome is likely.

6.1 POPULATION

The operational phase of the Project will require up to 373 non-local hires. At an average household size of 2.5 persons (average for Narrabri LGA and Gunnedah LGA (ABS, 2006)) the Project may result in a permanent population increase of approximately 932 persons (373 x 2.5) across the local area.

Table 18 summarises the potential estimated population increases in the main settlements of the local area which could be attributed to the operational phase of the Project. This information is based on the potential workforce residential plan described in **Table 11**.

In addition to the above potential population increases there is potential for population increase as a result of indirect employment opportunities generated by the Project and the associated workforces. Given the anticipated growth in coal mining in the Gunnedah Basin described in **Section 2.7**, it is likely that there will be growth in the population base which can be attributed to the provision of indirect employment opportunities.

Table 18
Potential Estimated Population Increase from Scenario 1 of the Project

Workforce Profile*	Total Persons**	Narrabri Township**	Gunnedah Township**	Boggabri Township**	Other Areas**
Non-local hires	373	205	112	37	19
Total incoming population	932	513	280	93	47
Estimated Adults (18+ yrs) – (73.9%)	689	379	207	69	34
Estimated children (<18 yrs) – (26.1%)	243	134	73	24	12
Estimated children <5 yrs – (6.6%)	62	34	18	6	3
Estimated primary school children – (10.2%)	95	52	29	10	5
Estimated secondary school children – (10.5%)	98	54	29	10	5

*Notes: * Population breakdown is based on NSW Northern Statistical Division 2006 ABS Census Age Profile*
*** Discrepancies in breakdown of numbers due to rounding*

6.2 HOUSING AND ACCOMMODATION

In addition to the demand for housing associated with the Project, additional future demand for housing in the local area can be attributed to:

- Natural growth (organic growth of the existing population);
- Direct and indirect workforce and their families who move to the local area; and
- Other existing projects in the area and their imported workforce requirements.

As discussed in **Section 2.2** future population projections for both the Narrabri and Gunnedah LGAs forecast population decline rather than increase. These projections are based on historic population growth rates for the LGAs and do not consider any large-scale industrial developments.

The Project will draw, at the modelled extreme, approximately 932 people to the local area (**Section 6.1**). This permanent population increase will generate demand for approximately 373 dwellings across the local area, assuming an occupancy rate of 2.5 (Census, 2006).

Table 19 summarises the potential Project accommodation demand across the local area. The assessment of demand is based on the residential pattern described in **Section 2.5.1**. To ensure the SIA remains conservative, ‘Other’ tenure types and ‘Not Stated’ tenure have been included in rent.

When compared to the available dwellings in both the rental and purchase markets discussed in **Section 2.5.2** and **Section 2.5.3**, there does not appear to be adequate existing housing to accommodate the predicted increase in demand (**Table 20**). There is however, sufficient land available for residential subdivision and therefore construction of new dwellings.

Scenario 1 would require the relocation to the local area of a high number of employees, and their families, in a relatively short period of time. This is likely to lead to a more concentrated level of impact to the local economy, housing and associated services than is modelled under Scenario 2.

Table 19
Accommodation Demand Generated by Scenario 1 of the Project

Township		Total Persons**	Narrabri Township**	Gunnedah Township**	Boggabri Township**	Other Areas**
Total Future Housing Requirements (dwellings)		373	205	112	37	19
Dwelling Type*						
Separate House (88%)	Own (65%)	213	117	64	21	11
	Rent (35%)	115	63	34	11	6
Townhouse / Flat / Unit / Apartment (10%)	Own (65%)	24	13	7	2	1
	Rent (35%)	13	7	4	1	1
Other dwellings (2%)	Own (65%)	5	3	2	1	0
	Rent (35%)	3	2	1	0	0

**Dwelling type % and tenure data from 2006 Census data for Statistical Division (Northern)*
*** Discrepancies in breakdown of numbers due to rounding.*

Table 20
Accommodation Availability and Demand

Dwelling Type		Required	Available	Difference
Separate House	Sale	213	205	-8
	Rent	115	21	-94
Townhouse / Flat / Unit / Apartment*	Sale	29	27	-3
	Rent	16	7	-6

** For the purposes of this table 'other dwellings' have been included in townhouse / flat / unit / apartment category.*

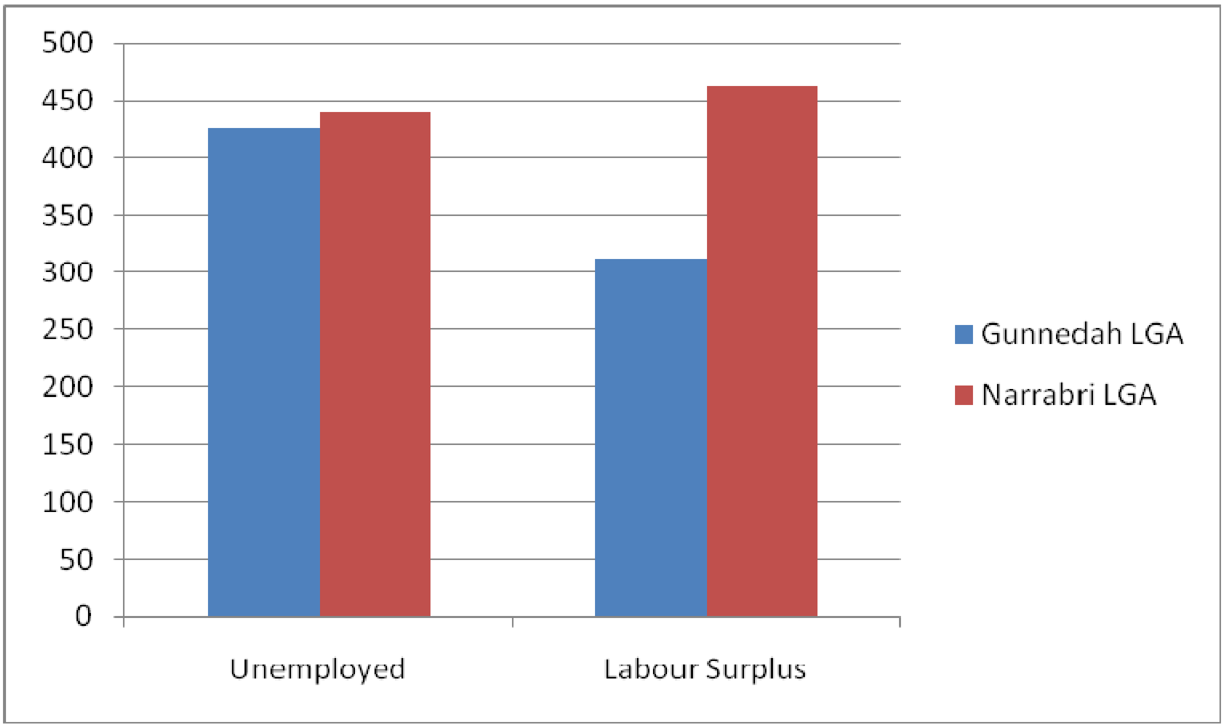
6.3 LABOUR POOL

Figure 4 highlights the available labour in the local area. As discussed in **Section 2.3.1** the total number of people potentially available for employment across the local area is approximately 1,640 people (unemployed and labour surplus). This indicates that although the skills of these individuals are unknown, there appears to be the capacity to absorb the Project.

6.4 LABOUR SKILLS

As noted in **Section 2.3.2** the local area has a relatively small pool of skilled labour. There is potential for the Project to put further strain on the skilled labour force in the region. During the initial stages of the Project this will necessitate a significant number of non-local hires to fill skilled labour positions. During the long-term, the Project will facilitate in increasing the skilled labour force within the region.

Figure 4
Available Labour in the Local Area



Source: ABS Census data 2006

6.5 SMALL BUSINESS

Local business owners have raised concerns regarding the impact of the mining industry on the local labour force, as identified in **Section 3.1.3** and **Section 4**. It is recognised that there is only a small pool of tradespeople in the region with the skills to service the Project and that this pool is even smaller at the local level.

6.6 COMMUNITY SERVICES AND FACILITIES

The local area is currently serviced by a range of facilities and services. There may be available capacity in local infrastructure, services and facilities to accommodate the population increases associated with the Project; however the population increase will place increased pressure on community services and facilities.

Although it would appear that education and health services have the capacity to meet the demand generated by the additional population, these two areas were identified by the community as being areas of need (**Section 4**). The estimated demand for primary and secondary school places in Narrabri, Boggabri and Gunnedah is illustrated previously in **Table 18** and are based on the anticipated workforce residential pattern.

The impact of the Project on education services includes:

- The estimated additional 52 primary and 54 secondary school age children who will attend schools in Narrabri represent an increase of 6% and 9% respectively to existing enrolments;
- The estimated additional 29 primary and 29 secondary school age children who will attend schools in Gunnedah represent an additional 3% to both existing primary and secondary enrolments; and
- The estimated additional 10 primary school age children who will attend school in Boggabri represent an additional 7% increase on current primary school enrolments. The estimated 10 secondary school students from Boggabri would attend school in either Gunnedah or Narrabri.

In addition to these increases to school enrolments, it is anticipated that some of the primary school students will attend school at the Fairfax school at Maules Creek.

The additional population will increase demand for a range of health services including general practitioner and child health services as well as areas of additional family support and children's services such as playgroups. However, given that the Project and other proposed developments in the Gunnedah Basin will contribute to both economic diversity and economic growth in the local area, more service and facility operators and suppliers such as GPs are likely to relocate to the local area.

6.7 COMMUNITY VALUES, ASPIRATIONS AND LIFESTYLE

Previous socio-economic assessments conducted for coal mines in the Gunnedah Basin, notably EAs for Narrabri North Coal Mine Stage 1 and Stage 2 highlighted the potential positive social impacts of new mining operations on social capital and lifestyle in the local area.

The Project will deliver a similar range of positive benefits to the local area primarily as a result of:

- Employment opportunities offered;
- Long-term up-skilling of the workforce;
- Opportunities for Indigenous training;
- Opportunities for urban development; and
- Additional and new permanent population it will attract to the local area as a result of the direct and indirect employment opportunities offered.

The increase in permanent population brought about by the Project has the potential to:

- Increase participation in community service and sporting organisations which in turn will contribute to stronger social networks;
- Strengthen the volunteer services industry in the local area with a resulting indirect benefits to the social capital;

- Strengthen the local economy through local spending;
- Strengthen the local economy through local building;
- Act as a catalyst for the development of local business enterprises;
- Support growth in social infrastructure / services, including those provided by government agencies (e.g. roads, schools, etc); and
- Act as a catalyst for further subdivision and development of residential and commercial land.

The local employment opportunities provided by the Project have the potential to:

- Reduce social stress and improve mental wellbeing through provision of local jobs and enhanced economic stability;
- Encourage young people to stay in the local area through the direct and indirect provision of employment;
- Encourage local women, young people and Indigenous people into the workforce; and
- Contribute diversity to the existing economic base of the Narrabri LGA which is currently heavily reliant on the 'agricultural, forestry and fishing' and 'wholesale trade' sector (ABS 2006).

7 OPERATIONAL PHASE IMPACTS - SCENARIO 2

This section outlines the predicted impacts of the operational phase of the Project under Scenario 2 as described in **Section 3.2** on the population, housing and accommodation, labour pool, small business, community facilities, services, community values aspirations and lifestyles.

As noted previously, Scenarios 1 and 2 are ‘extreme’ scenarios to assess the potential maximum social impacts. After the application of proposed mitigation and management strategies a more moderate ‘Mitigated Case’ outcome is likely.

7.1 POPULATION

The operational phase of the Project will require up to 373 non-local hires. Under Scenario 2, the non-local hires will operate as a remote workforce (travelling by air or road) on an even time roster. Although over time it is anticipated that some employees may relocate to the local area or be replaced by local hires, for the purposes of modelling Scenario 2 it is assumed that all non-local hires will utilise only temporary accommodation.

Under Scenario 2 the anticipated temporary population increase to the local area associated with the operational phase of the Project will be 373 people.

7.2 HOUSING AND ACCOMMODATION

The Project will draw, at worst case, approximately 373 people to the local area (see **Section 7.1**). This population increase is not considered to be permanent and it is anticipated that the workers will be accommodated by the proposed worker’s accommodation village located at Boggabri.

7.3 LABOUR POOL

Figure 4 highlights the available labour in the local area. As discussed in **Section 2.3.1** the total number of people potentially available for employment across the local area is approximately 1,640 people (unemployed and labour surplus). This indicates that although the skills of these individuals are unknown, there appears to be the capacity to absorb the Project based on the assumptions outlined in **Section 3.2.3**.

7.4 LABOUR SKILLS

As noted in **Section 2.3.2** the local area has a relatively small pool of skilled labour. There is potential for the Project to put further strain on the skilled labour force in the region. During the initial stages of the Project this will necessitate a significant number of non-local hires to fill skilled labour positions. During the long-term, the Project will facilitate in increasing the skilled labour force within the region.

As for Scenario 1, the management and mitigation measures introduced by Aston, such as scholarships, apprenticeships and ongoing training, will increase the skilled labour force in the local area.

7.5 SMALL BUSINESS

Local business owners have raised concerns regarding the impact of the mining industry on the local labour force, as identified in **Section 3.1.3** and **Section 4**. It is recognised that there is a small pool of tradespeople in the region with the skills to service the Project and that this pool is even smaller at a local level. Under both scenarios, the strain on the local skilled labour pool would be minimised due to the number of non-local hires. Additionally, the temporary population increase also has the potential to enhance small business through increased goods and services demand, without significantly reducing the skilled labour available to carry out business.

7.6 COMMUNITY SERVICES AND FACILITIES

The local area is currently serviced by a range of facilities and services. On the assumption of approval of the worker's accommodation village, there is generally available capacity in local infrastructure, services and facilities to accommodate the temporary population increases associated with the Project under Scenario 2.

As the workforce is anticipated to utilise the worker's accommodation village, it is highly unlikely that additional pressures would be placed on childcare and education facilities. The additional population will however, increase demand for a range of health services including general practitioner and hospitals.

Under Scenario 2, there would be a significant increase in demand for flights in to and out of the Narrabri airport. Under the current flight arrangements, the airport would not have the capacity to facilitate 60% of all employees flying in and out on an even time roster. The airport will require an increase in flight numbers to accommodate the Project.

7.7 COMMUNITY VALUES, ASPIRATIONS AND LIFESTYLE

Previous socio-economic assessments conducted for coal mines in the Gunnedah Basin, notably EAs for Narrabri North Coal Mine Stage 1 and Stage 2 highlighted the potential positive social impacts of new mining operations on social capital and lifestyle in the local area.

The Project will deliver a similar range of positive benefits to the local area primarily as a result of:

- Employment opportunities offered;
- Long-term up-skilling of the workforce;
- Opportunities for Indigenous training; and
- Opportunities for urban development.

The local employment opportunities provided by the Project have the potential to:

- Reduce social stress and improve mental wellbeing through provision of local jobs and enhanced economic stability;
- Encourage young people to stay in the local area through the direct and indirect provision of employment;
- Encourage local women, young people and Indigenous people into the workforce; and
- Contribute diversity to the existing economic base of the Narrabri LGA which is currently heavily reliant on the 'agricultural, forestry and fishing' and 'wholesale trade' sector (ABS 2006).

It is acknowledged that there is a stigma associated with workforce camps. As a result, MAC has developed successful strategies for creating a pleasant living environment with a multitude of onsite facilities. Additionally, the proposed location of the worker's accommodation village at Boggabri is intended to integrate into the Boggabri and wider communities. As noted in **Section 2.5.7**, the worker's accommodation village in Boggabri will be constructed with 24 sqm standard self-contained rooms for operational workers and significant recreational facilities available for the remote workforce.

These mitigation and management strategies employed by MAC will be discussed further in the development application process for the development and in **Section 9**.

8 CUMULATIVE IMPACTS

This section discusses the potential cumulative impacts associated with the Project and surrounding developments. As discussed in **Section 2.7**, there are a number of existing and proposed mining and gas developments at various stages in the local area. As a result of this there is potential for substantial cumulative social impacts.

For the purposes of this SIA, to determine potential cumulative impacts with the Project, mining related development in the local area have been divided into two categories: 'existing approved projects' (including existing and approved or under DoP consideration) and 'potential future projects' as listed in **Table 10**. In addition to the previously described existing projects and 'potential future projects', AGL holds Petroleum Exploration Licences (PELs) in the Gunnedah Basin.

Table 21
Assumptions for Mining Projects Across the Local Area

Project	Peak Operational Workforce (Mine Year 2)	Peak Operational Workforce (Mine Year 10)	Assumed non-local hire	% non-local hires to relocate to local area
Existing Approved Projects				
Sunnyside Coal Project	40	0	Assume 0%	N/A
Werris Creek Mine	66	0	Assume 0%	N/A
Rocglen Coal Mine Extension	54	54	Assume 0%	N/A
Boggabri Coal mine Extension	400	500	51%	100%
Narrabri Coal mine (Stage 1 & 2)	211	211	62%	100%
Tarrawonga Mine Expansion	120	70	50%	50% local, 50% regional
potential future projects				
Maules Creek Coal Project	280	466	80%	Utilise Scenario 1 & 2 assumptions
Narrabri Coal Seam Gas Project	200	200	N/A – Assume 80%	N/A – Utilise Scenario 1 & 2 assumptions
Watermark Project	0	600	N/A – Assume 80%	N/A – Utilise Scenario 1 & 2 assumptions
Caroona Project	0	600	N/A – Assume 80%	N/A – Utilise Scenario 1 & 2 assumptions
Goonbri Project	0	70	N/A – Assume 80%	N/A – Utilise Scenario 1 & 2 assumptions

Sources, Rocglen EA 2011, Boggabri EA 2010, Narrabri Stage 2 EA 2009, Tarrawonga PEA 2011.

It is important to note that the cumulative assessment includes early stage exploration projects and, for such projects, it is difficult to assess if they will be feasible from an economic or technical perspective as well as from an environmental and planning perspective. The cumulative assessment requires a high level review of the maximum potential impacts of additional mining or gas projects or expansions which have a possibility of being approved in the local area.

8.1 ASSUMPTIONS

In order to carry out an assessment of the two scenarios on a cumulative basis, a number of assumptions have been used. These assumptions relate to the source of employees (local or non-local hire) and the anticipated residential breakdown (relocate to local area or remote) of the non-local hires for each project. For projects where this detail has not been provided, the assumptions used for the Project have been utilised.

For the purposes of modelling the two indicative mine years which have been assessed, it has been assumed that all projects are approved and are being carried out at full production. This is considered a conservative estimate and ensures that the maximum potential cumulative impact has been modelled. This ensures that the cumulative impact analysis identifies, with sufficient lead-time, community services and infrastructure requiring investment and / or planning development in the future.

8.2 SCENARIO 1

8.2.1 Population

In Year 2 of the Project it is estimated that approximately 1,121 people will be employed by the mining industry, an increase of 530 on the individuals currently predicted to work in the mining industry as described in **Section 2.7**. Utilising the assumptions outlined in **Table 21**, the number of non-local hires relocating to the local area is 610. At an average occupancy rate of 2.5 this will result in a population increase of 1,525. This population increase will significantly contribute to halting the predicted population decline in the local area. It is anticipated that the increase in demand for goods and services associated with the Project will also contribute to an indirect population increase through improved employment opportunity.

In Year 10 of the Project it is estimated that approximately 2,771 people will be employed by the mining industry, an increase of 2,436 on the currently predicted mines employees. Under the above assumptions, the number of non-local hires relocating to the area is 1,804, resulting in a potential ‘extreme’ total population increase directly resulting from the coal and gas industry of 4,510.

8.2.2 Housing and Accommodation

The permanent population increase anticipated under Scenario 1 will likely lead to increased pressure on the housing and accommodation market. Due to the likely location of potential future projects, greater impact on the Gunnedah housing market and services and facilities may be experienced.

At Year 2 of the Project there would be a requirement for 610 additional houses / apartments / flats due to cumulative effects of mining in the local area. This would place a large amount of pressure on the local housing market, influencing housing availability and affordability should there be no change to the current supply of housing in the region.

At Year 10 of the Project, there would be a requirement for 1,804 additional houses / apartments / flats due to cumulative effects of mining in the local area. This would place significant strain on the local housing market, influence housing availability and affordability should there be no change to the current supply of housing in the region. The current market would not be able to support this influx of population to the local area. A significant amount of urban development would be required to facilitate this Scenario should it occur, to ensure housing affordability remains acceptable.

8.2.3 Labour Pool

It is unlikely that the local labour pool will have the capacity to absorb the Project and surrounding mining developments across either modelled Year (2 or 10). Some incoming non-local hires are anticipated to bring partners and families to the local area. The growing mining industry in the local area is likely to reduce unemployment and increase participation rates and also result in the relocation of individuals trained in non-mine related industries to the local area.

The higher demand for goods and services resulting from the increased population is also likely to draw non-mine workers to the local area, further increasing the population but also assisting to mitigate impacts on community services and facilities.

8.2.4 Labour Skills

With consideration of other existing approved projects and potential future projects, strain will be placed on the skilled labour pool. The expanding industry provides the opportunity for training of local individuals in mining operations and construction works, however there is potential for this to compete with other skilled industries. It is anticipated that by Year 10 the proposed mitigation and management strategies relating to improving the local labour skills will be contributing notably to the local skilled labour force. It is also anticipated that the other contributing projects will have implemented similar strategies.

8.2.5 Small Business

The cumulative impacts on local business of existing approved projects and potential future projects in the local area include an increase in demand for goods and services resulting from the population increase and a potential increase in available labour hire in areas such as childcare, hospitality and retail. As described above, there is potential for competition for the skilled labour force which may negatively impact local businesses under both modelled years.

8.2.6 Community Services and Facilities

Services and facilities in the local area are generally sufficient to support the Project with some additional strain likely. However, the increase in population associated with the growing mining and gas industry is likely to place significant strain on community services facilities in the future if all proposed projects proceed.

Additional strain would be placed on the Narrabri airport as a result of the increased population and the temporary population associated with remote construction and operation workforces across the industry.

In summary, potential areas of cumulative impacts in the local area under Scenario 1 include:

- Housing affordability and accessibility;
- Skill shortages and competition for skilled personnel;
- Economic growth and stability; and
- Supply and demand for community services and facilities.

8.3 CUMULATIVE IMPACTS – SCENARIO 2

8.3.1 Population

As described in **Section 7.1** the operational phase of the Project will require up to 373 non-local hires. Under Scenario 2, the non-local hires will be a remote workforce accessing the area by personal vehicle or bus, or flight on an even time roster. Although over time it is anticipated that some employees may relocate to the local area, for the purposes of modelling Scenario 2 it is assumed that all non-local hires will utilise only temporary accommodation.

In consideration of the existing approved projects and potential future projects under Scenario 2 the Project will not contribute to a permanent population increase however there is potential for a significant increase to the local population, both permanent and temporary as a result of the expanding industry. Under the assumptions provided in **Table 21**, there will be a temporary population increase resulting from the Project and surrounding industry, of 610 in Year 2 of the Project and 1,804 in Year 10.

8.3.2 Housing and Accommodation

Scenario 2 aims to minimise the impacts on local housing and accommodation facilities in order to curb the increase in house prices which may result from a sudden increase in housing demand, within both purchase and rental markets. The existing approved projects and potential future projects will contribute to additional strain on the housing market however it would be assumed that these Projects implement adequate strategies to mitigate this issue.

8.3.3 Labour Pool

Facilitating the accommodation of non-local hires enables employment of individuals from outside the local area. This would decrease the strain on the local labour pool and allow for employment of skilled workers to facilitate training and development of local labour. Additionally, the worker accommodation village would provide additional employment opportunities during construction as well as ongoing employment for individuals in or looking to move into, hospitality, housekeeping, running of a gym and other non-mining vocations.

8.3.4 Labour Skills

The local labour skills are currently considered inadequate to accommodate the likely existing approved projects and potential future projects in the local area. As such, by sourcing skilled labour from outside the local area, mining developments would minimise the depletion of skilled labour from local businesses.

8.3.5 Small Business

The cumulative impacts on local business of existing approved projects and potential future projects in the local area include a potential increase in demand for goods and services. This is likely to result from the potential to increase the population available labour hire in areas such as childcare, hospitality and retail. As described above, it is likely for the skilled labour force to experience competition pressures which may negatively impact local businesses.

The utilisation of a remote workforce aims to minimise impact on local small business and maximise the benefit to these businesses. It is unlikely that under Scenario 2 the Project will contribute to cumulative negative impacts on small businesses.

8.3.6 Community Services and Facilities

By utilising a remote workforce, impacts on local services and facilities will be minimised. It is assumed that employees will largely maintain the use of medical practitioners and other services in their local area. There will however be an increase in population associated with the development of the mining industry which, unavoidably, will place further strain on medical, educational and childcare services and facilities.

The utilisation of a remote workforce will result in a significant increase in demand for flights from the Narrabri airport and indirect impacts on other regional airports such as Mudgee and Tamworth. The current flight availability is significantly less than required to accommodate the demand likely to result from mining developments in the local area.

8.3.7 Conclusion

Adequately addressing the cumulative impacts outlined above is likely to require significant investment into local infrastructure, schools, colleges and hospitals. This investment will require the combined commitment of local government authorities, stakeholders and mining companies.

At this early stage, it is difficult to determine which regional centres are likely to be most impacted as this will be dependent on where and when ‘potential future projects’ occur. The key purpose of the cumulative impact assessment is to highlight areas of infrastructure and community services that will require further planning, development and investment at the appropriate time.

9 MITIGATION AND MANAGEMENT

This section outlines the mitigation and management measures which will be employed by Aston to mitigate negative impacts on the community and assist in development with regard to housing and accommodation, small business, the labour pool and community services and facilities.

It should be noted that Scenarios 1 & 2 are modelled extremes. Once Aston's planned mitigation and management strategies are implemented as described below, it is anticipated that there will be a balance between relocation / local workforce and use of a remote workforce. In reality it is anticipated that Scenario 2 is representative of the very early stages of the Project (particularly during construction).

Subsequently, Aston will encourage relocation of its non-local employees to the local area and promote gradual integration of workers into the community as housing and community services and facilities develop.

Aston is committed to assisting to progress residential development and improvements to community services and facilities and is conscious of the impacts which result when adequate planning is not considered prior to action.

9.1 HOUSING AND ACCOMMODATION

Based on the current availability of housing in both the purchase and rental markets there appears to be inadequate existing supply of housing to accommodate a significant increase in permanent population associated with the workforce for the Project and other developments in the local area. However, land availability for urban development within the local area is adequate to accommodate and facilitate the required urban development to meet demand generated by the Project and future surrounding projects.

Should approval be granted for the worker's accommodation village at Boggabri, pressure on the local housing market would be minimised in the first instance. This accommodation facility would provide adequate time for Aston to implement strategies to assist the development in the local housing market.

Aston will continue to consult with MAC, regulators and the community where necessary to facilitate the approval of the worker's accommodation village located at Boggabri. Aston will assist MAC to implement strategies to integrate the facilities and residents into the local Boggabri community including:

- No tolerance for anti-social behaviour employee policies (including an accommodation village Code of Conduct);
- No sale of alcoholic beverages onsite;
- Developing facilities which the town of Boggabri currently does not have (e.g. gym);
- Avoiding development of facilities which the town of Boggabri already has (e.g. lap pool, medical facilities, bar, and tennis courts); and

- Making available site facilities (e.g. the restaurant, gym and function room / training facility) to the public.

To assist in the provision of adequate housing for the Project workforce and the associated increase in the population of the area, Aston, as a local landholder, will assist NSC in attracting developers to progress appropriate subdivisions. Such developments will encourage non-local hires to locate to the Narrabri area with a relevant emphasis placed on the Boggabri township. Additionally, Aston will implement an Employee Incentive Scheme which will include policies on items such as encouraging progressive relocation to the local area by provision of financial assistance with emphasis on construction of new dwellings.

Aston will monitor housing affordability and availability in the local area and report in the regulatory required Annual Review.

9.2 SMALL BUSINESS

To assist in reducing pressures and competition for human resources, Aston will ensure that its employment policies include a sustainable apprenticeship / trainee program. In addition, Aston will commit, where possible, to give preference to local suppliers and service providers for its Project requirements. Aston has already commenced consultation with small businesses in Narrabri, Gunnedah, Boggabri and Wee Waa in relation to creating a database of local suppliers.

9.3 LABOUR POOL

To ensure the timely recruitment of the Project workforce and to assist in long-term workforce retention in light of competition from existing and proposed mines, Aston shall implement labour force recruitment strategies prior to approval of other major developments in the Gunnedah Basin coal mining sector.

Aston will also implement local labour force recruitment strategies with focus on non-skilled positions to facilitate improving the local labour force skill and implement state wide labour force recruitment strategies with focus on skilled positions as needed to facilitate improving the local labour force skill.

The identified labour skills shortage requires a balance between maintaining a high number of local hires without further reducing the skilled labour pool available to local, small businesses. Aston will adopt within its recruitment policies:

- A local hire strategy for operators, ancillary staff and trade apprentices in the short to medium-term, although it is noted that the commencement of other major mining projects in the region may influence this strategy;
- As part of the local hire strategy, efforts will be made in the recruitment and training of women and local Aboriginal people;
- Continuation of Aston's Scholarship and Apprenticeship Program. This will include the expansion of a local traineeship and apprenticeship program, including at least four onsite apprenticeships per year in the first 10 years of operation (of which at least one will be for Indigenous applicants).

9.4 COMMUNITY SERVICES AND FACILITIES

Aston will ensure the timely provision of information to facility and service operators in the local area (e.g. schools and health services), regarding the potential incoming population associated with the Project. This will assist in ensuring operators are equipped to address the additional demand generated by the Project.

In order to assist Fairfax School at Maules Creek, Aston will encourage relevant members of the workforces' children to attend the school, and continue to consult and provide assistance, where practical.

In order to assist Narrabri Airport to accommodate the increase in usage Aston will contribute a total of $1,500,000 to Narrabri airport paid evenly over three years (as part of the NSC Voluntary Planning Agreement), for the expansion of services and route to include renovation of terminal and upgrade of strip infrastructure.

Employee relocation to the local area will assist to reduce impacts on the Narrabri airport which currently does not have the capacity to service the Project in conjunction with other potential future projects.

Aston is currently working with the NSC to develop programs to encourage families to relocate to the local area.

Additionally, Aston shall provide investment of approximately $100,000 per year into capital equipment for services such as the bushfire brigade, ambulance, Westpac Helicopter and other valued community services.

Aston will also provide the following community related incentives:

- An annual scholarship for a locally based student to study a childcare related course as well as sponsoring a traineeship program for childcare workers;
- Continue to liaise with NSC and Ochre Health (health providers in Boggabri) relating to contributions towards additional health resources and medical facilities; and
- Make a financial contribution of up to $20,000 per year to encourage retainment of medical staff in Boggabri.

9.5 VOLUNTARY PLANNING AGREEMENT

Additionally, Aston is consulting extensively with NSC and GSC to work towards forming a VPA under Section 93F of the EP&A Act to provide in kind and monetary contributions to ensure the potential social effects of the Project are mitigated.

These discussions are ongoing with the VPA to be agreed over the coming months.

9.6 SUMMARY

The two scenarios have been modelled to assess maximum potential social impacts. As a result of the application of Aston's proposed management and mitigation strategies, the intent is that the impact on the local area is likely to be in between the outcomes modelled for Scenarios 1 & 2.

Over a 5-10 year period, with targeted incentives provided to the workforce to encourage relocation to the local area, Aston considers that the 80% non-local workforce would be reduced to approximately 50%. The intent is that this would be achieved through a combination of increasing the skill base of the local area and relocation of the initially non-local workforce.

This 'Mitigated Case' provides for a more gradual relocation of workers into the local area than is contemplated in Scenario 1. Acting in conjunction with the local Councils this will provide Aston an opportunity to optimise the development of local housing and services. This should reduce the concentration of the impacts that would occur under Scenario 1 whilst ensuring that there is integration with the local community and a greater flow of benefits to local industry than would occur under Scenario 2.

Under the 'Mitigated Case', there is potential for cumulative impacts but the incentives and mitigation measures will be used to ensure that housing development progresses at a sustainable rate for the local building industry to accommodate demand. Additionally, pressures on community services such as childcare, education and health facilities will be minimised as families will move to the area once infrastructure has sufficiently developed to support the growth. Aston, through its VPA and other commitments, will support this infrastructure growth.

* * *

For

HANSEN BAILEY

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Environmental Scientist	*Principal*

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