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Dyno Nobel Asia Pacific Limited

Moranbah Ammonium Nitrate Project

Social Impact Assessment

September 2006



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Executive Summary

Introduction

This report investigated the social impacts associated with the proposed construction and operation of an AN (AN) and emulsions manufacturing plant in the central Queensland regional town of Moranbah.

Moranbah is an open mining town, established to service the Goonyella-Riverside and Peak Downs mines. Moranbah has a large working age population compared to both the Belyando Shire and Queensland, and was home to 6,673 people in 2003. Compared to Queensland, the populations of the immediate and regional study area are highly involved in mining and agricultural activities.

The Project

Dyno Nobel is a leading producer of explosives and explosives precursors and is widely acknowledged to be one of two significant suppliers of integrated AN and initiated systems in the world.

The combined plants would produce AN emulsion and prill to service the rapidly expanding demand for AN for mining in Queensland and New South Wales. The current concept for a Moranbah operation is to construct a 350,000 tonnes per annum plant, to make AN prill (solid) and AN emulsion (viscous liquid).

Community Profile

The majority of people in the immediate study area are employed on a full-time basis, which again is comparable to the region but less than the State. The unemployment rate of the immediate study area is comparable to the region, but lower than the State, while the immediate study area has the highest percentage of weekly household income falling in the bracket \$1,500 to \$1,999.

Dwelling types in the immediate study area are comprised mostly of separate houses, which is consistent with both Belyando Shire and the State. The relatively high percentage of other dwellings, which includes improvised homes/tents, reflects the mining focus of the town of Moranbah. This dwelling type is also high within Belyando Shire. A higher proportion of dwellings are rented in the immediate study area, while a lesser number are fully owned.

Consultations with the Moranbah community revealed the following issues already existing within the community and which may be compounded as a result of the project.

- » Limited availability of housing;
- » Restricted participation in sporting and community service organisations;
- » Waiting lists to access medical and dental services in Moranbah and other surrounding regional centres;



- » Current water restrictions for domestic use of water in Moranbah;
- » Limited access to childcare services; and
- » High cost of living.

Moranbah is well serviced with community infrastructure and services. Many services are at their upper threshold, especially availability of land and housing, availability of medical and dental services, access to water. Additional growth in Moranbah will need to be in keeping with the provision of adequate community services and facilities.

Impact Identification

Through examination of the existing environment and consultations with the Moranbah community has identified the following impact categories were identified.

- » Population;
- » Social/cultural profile of Moranbah;
- » Economic profile of Moranbah;
- » Community values;
- » Current lifestyles of local residents;
- » Housing and household income;
- » Local business, health care;
- » Community services and cohesion; and
- » Construction camp impacts.

Impacts associated with each of these categories will be dependent on the source of the potential workers at the Plant. Employees sourced from the local Moranbah community will ensure that the social fabric of Moranbah remains solid, and that the cohesion of the community is built on rather than decayed. Use of fly in/fly out or drive in/drive out staff for the Plant will add to the continuing decline in community values in Moranbah discouraging sustainable growth for the town.

Constraints exist within the current environment to cope with the added pressures of housing and water resources at present, and these will only be compounded as a result of the project. Increased pressure on an already limited availability of housing (including high prices and lack of available land) and water were identified as potential issues.

Significance of Impacts

In order to prioritise the impacts identified in this SIA, GHD has developed a methodology that allows for ranking of impacts by significance. The following presents a synthesis of the highly significant impacts.



Table 1 Significance of Impacts

	Construction Impact	Operation Impact
<i>Highly Significant</i>	Impact on Housing Increased number and type of Vehicles of Road Construction Camp Water Supply to Moranbah	Impact on Housing Number of Vehicles of Road Construction Camp Water Supply to Moranbah Increased terrorism target
<i>Moderately Significant</i>	Population impacts Social/Cultural/Economic Profile of Moranbah Community values Current lifestyles Emergency services Community services and community cohesion	Social/Cultural/Economic Profile of Moranbah Community values Current lifestyles Emergency services Current land uses

Mitigation, Enhancement and Monitoring of Impacts

Appropriate mitigation strategies are necessary to both manage the negative impacts and provide opportunities to enhance the positive impacts identified through this SIA process. The following provides a brief summary of mitigation strategies proposed for this project.

Table 2 Mitigation and Enhancement Strategies

Impact	Mitigation Strategy	Enhancement
Housing	Ensure that adequate housing and associated infrastructure are provided within the existing constraints of the Belyando Shire Council, the State and community aspirations.	Any permanent housing associated with the operational phase should be environmentally and aesthetically appropriate.
Construction Camp	Follow all required development application procedures required by Belyando Shire Council and the Queensland Government. Remain aware of the impacts of another construction camp on the community values and aspirations of the Moranbah community.	



Water Supply	Ensure the project and the construction camp do not negatively impact on the water supply (already under restricted use) for the town of Moranbah.	Source water for housing and other sources in Moranbah and the region.
Increased number and type of vehicles on a road	Ensure there is minimal road traffic during the hours of 5am-9am and 5pm-9pm due to high volumes of traffic for shift change over and school bus operating times.	Ensure that there is no road access to transport vehicles between the hours of 5am-9am and 5pm-9pm due to high volumes of traffic for shift change over and school bus operating times.

Monitoring of impacts also provides the opportunity to verify the mitigation and enhancement strategies identified as a component of this SIA.



1. Introduction

1.1 Project Overview

Dyno Nobel Asia Pacific Limited (DN) is the proponent of the Proposed Ammonium Nitrate Plant, Moranbah, Queensland. Dyno Nobel Asia Pacific Limited is a leading producer of explosives and explosives precursors and is widely acknowledged to be one of two significant suppliers of integrated ammonium nitrate (AN) and initiated systems in the world.

Dyno Nobel Asia Pacific Limited produces and markets explosives and detonation devices for coal, metals quarry, tunnelling, construction and seismic industries.

1.2 Project Description

1.2.1 Aim of the Project

Dyno Nobel Asia Pacific Limited is seeking to construct and operate a new AN plant and an emulsions manufacturing plant in Queensland. It has commenced studies to develop an additional facility in the Moranbah area (refer to Figure 1).

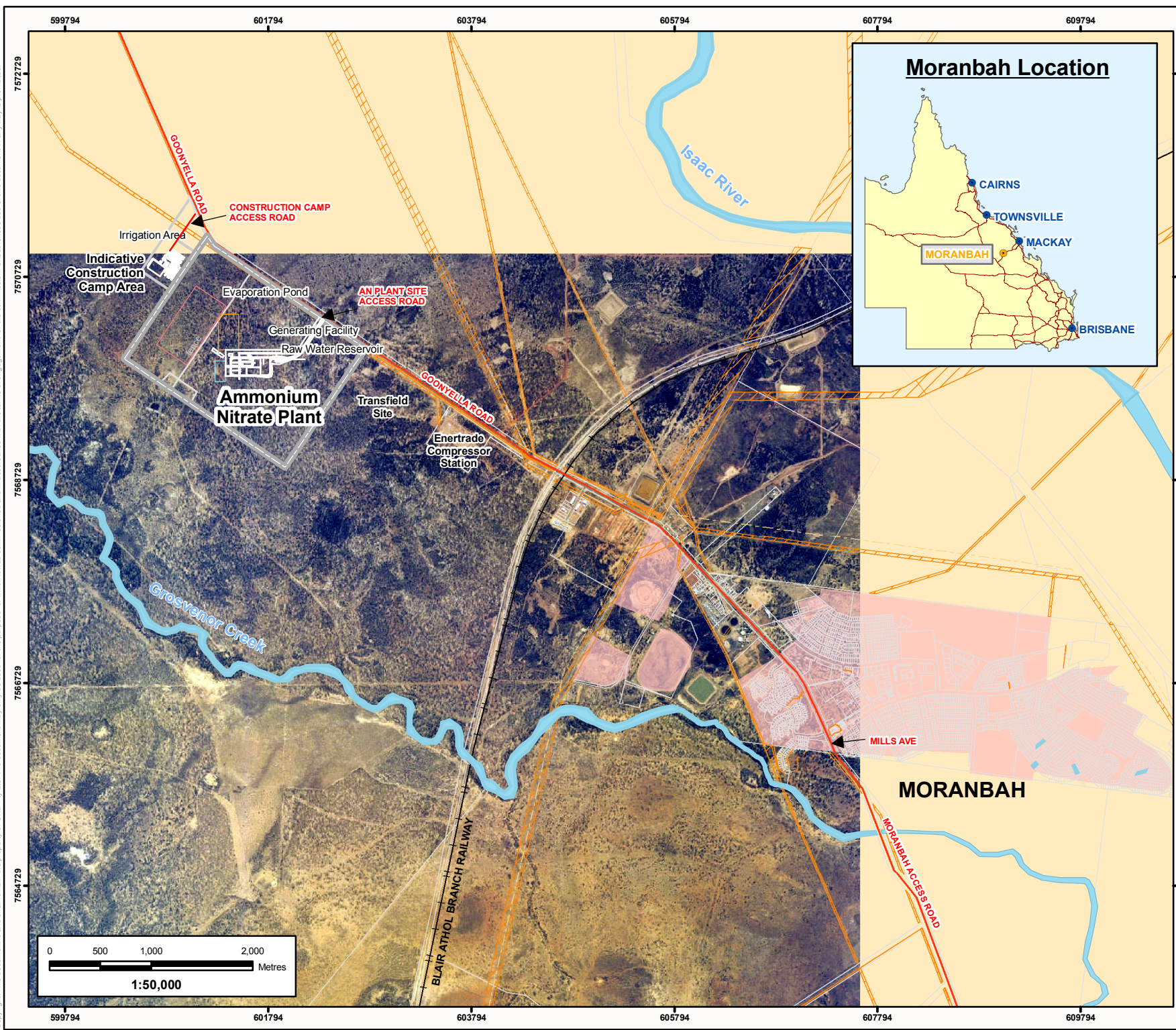
The AN plant will produce AN emulsion and prill to service the rapidly expanding demand for AN from mining in Queensland.

1.2.2 Site Choices

Dyno Nobel Asia Pacific Limited chose Moranbah as the site of their Proposed AN Plant (the project) and emulsion manufacturing plant following a broad investigation of options across Queensland. Key selection factors for Moranbah as the preferred location are:

- » Availability of sufficient freehold land or leasehold land for the planned size of the project and potential expansion area critical to the viability of the Project.
- » Low probability of triggering Commonwealth Environmental legislation.
- » The opportunity to share existing infrastructure (gas, water, rail, road and power) thereby reducing the environmental impact of new facilities and capital costs.
- » Low risk of impacting 'endangered' regional ecosystems and declared flora and fauna.
- » Reasonably flat terrain providing minimal disturbance to the existing landscape.
- » Low risk for potential public amenity disturbance.

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Date: 02-10-06 Rev C
Datum: GDA94 (MGA) Zone 55
Source: Base data sourced from the State of Queensland, Department of Natural Resources, Mines. All other infrastructure supplied by Dyno Nobel Asia Pacific Ltd.
File: G:\4115824\GIS\Maps\Final\MXD\fig1_Site_Location_RevC.mxd

Legend

- Ammonium Nitrate Plant Site
- Evaporation Pond
- Generating Facility*
- Raw Water Reservoir
- Cadastre
- Easements
- Developed Area
- Watercourse
- Major Road
- Railway
- Powerlines

*Generating Facility location is subject to detailed engineering.

Moranbah Ammonium Nitrate Plant

Environmental Impact Statement

Figure 1 Site Location



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1.3 Major Production of the Project

The project will involve the production of the following major components:

- » Ammonia gas (NH_3) will be manufactured from coal seam methane gas sourced locally;
- » Nitric Acid (NA) will be produced from ammonia and atmospheric air. The raw materials are combined at elevated temperature and pressure and passed over a platinum containing catalyst where the ammonia reacts with oxygen in the air. The resultant process gas is passed through the heat exchanger train where the major proportion of this reaction energy is recovered as heat. The process gas is cooled and oxidised further in the cooler condenser and absorber where nitric oxide, nitrogen dioxide, oxygen and water combine to form NA.
- » 350,000 tpa plant expandable to 350,000 tpa. AN solution will be used to make AN prill (a solid) and AN emulsion (a viscous liquid). The AN plant will comprise the following main components:
 - Internal power (electricity) for the NA and AN plants may be sourced where needed from the ammonia distribution system. Internal power is the generation of electricity within the plant (from the ammonia synthesis reaction and production of nitric acid). Steam is generated from waste heat, which in turn can generate electricity.
 - Nitric acid product storage facilities of 250,000 tonnes (1 tank) 60% concentration.
 - AN prill storage facilities of 11,000 tonnes.
 - AN solution (concentrated liquid AN (ANSOL)) stored in a 480 tonne tank, and emulsion stored in three 120 tonne tanks within the emulsion plant area.
 - Fuel (diesel and/or emulsifiers) storage ($2 \times 20\text{m}^3$).
 - Liquid nitrogen storage ($2 \times 12\text{m}^3$).
 - Plant infrastructure (systems required to operate the plant but not the part of the manufacturing process such as roads, buildings, building services, security, communications etc).
 - Utilities (fluids not directly in the manufacturing process such as steam, compressed air, water, power, etc).
 - Imported power, utilities and services including water and communications.
 - Access to roads to Queensland Main Roads standards and connecting water and gas pipelines.
 - Treated wastewater (wastewater treatment is the treatment of wastewater prior to reuse or discharge from the plant into the evaporation lagoons).

The operational plant will require 70 personnel for 24-hour operation and maintenance. The Project is anticipated to have a lifespan of at least 35 years.



1.3.1 Workers Camp

A Workers Camp is also proposed to provide for the initial accommodation of approximately 400 people¹. The camp will be located within close proximity to the plant. The development area of the camp is proposed to be approximately 15 ha and will comprise the following components:

- » 400 (with a maximum of 550) rooms, comprising fit out with own entry;
- » 50 site staff beds;
- » Separate ablution and laundry blocks;
- » Covered walkways;
- » Canteen comprising dining room and kitchen;
- » First Aid/Administration room;
- » Recreation room;
- » Roads, fencing and general security features;
- » Water supply and holding tank; and
- » On-site effluent treatment and disposal.

1.3.2 Inclusion of a Power Generation Plant into the Project

In August 2006, DN announced that an Enertrade Pty Ltd is proposing to construct a 15 MW gas-fired power generation facility for the supply of electricity to DN's proposed ammonia nitrate plant at Moranbah. It is intended that Enertrade Pty Ltd will own and operate the facility, which will serve the DN ammonia nitrate plant only. The facility is intended to provide a fully embedded supply (not grid connected) designed to meet DN's requirements. Gas will be supplied from coal seam gas resources located in the Moranbah area. Any social impacts created by the inclusion of the power generation facility have been included in this SIA.

It should be noted that GHD has not undertaken any consultations on the inclusion of the power generation plant into the proposed project. This is based on the assessment that as long as the power generation plant is included as part of the project and not separate, there won't be any *additional* significant social impacts.

¹ Including the employees and contractors required for the power generation plant.



2. Methodology

2.1 Introduction

The methodology for the SIA was designed to respond to the Coordinator General's Terms of Reference (ToR) for the project. The relevant sections of the ToR are set out in Appendix B.

2.2 Study Areas

As a basis for comparison of social impacts, study areas have been identified that incorporate immediate, regional and State areas. The following sections define each of these.

2.2.1 Immediate Study Area

The town of Moranbah is defined as the immediate study area due to the proposed plant being located on the outskirts of the town. Figure 1 illustrates the location of the proposed plant in comparison to Moranbah. Moranbah is comprised of several Australian Bureau of Statistics (ABS) collection districts (CD) (refer to Figure 2). The proposed site of the AN plant is located in the CD directly adjacent to the town of Moranbah and has also been included in the data analysis. In order to accurately assess the social impacts of the project, data from the following eleven CDs has been collated. They include 3031601, 3031604, 3031605, 3031606, 3031607, 3031608, 3031609, 3031610, 3031611, 3031612 and 3031613. Consequently, the data from these CDs will be used as baseline data from which to assess potential social impacts.

2.2.2 Regional and State Study Areas

The regional study area is defined as the Belyando Shire. The state study area is defined as Queensland. Figure 3 illustrates the location of Moranbah in relation to the Belyando Shire and Queensland.



Figure 2: Belyando Census Districts

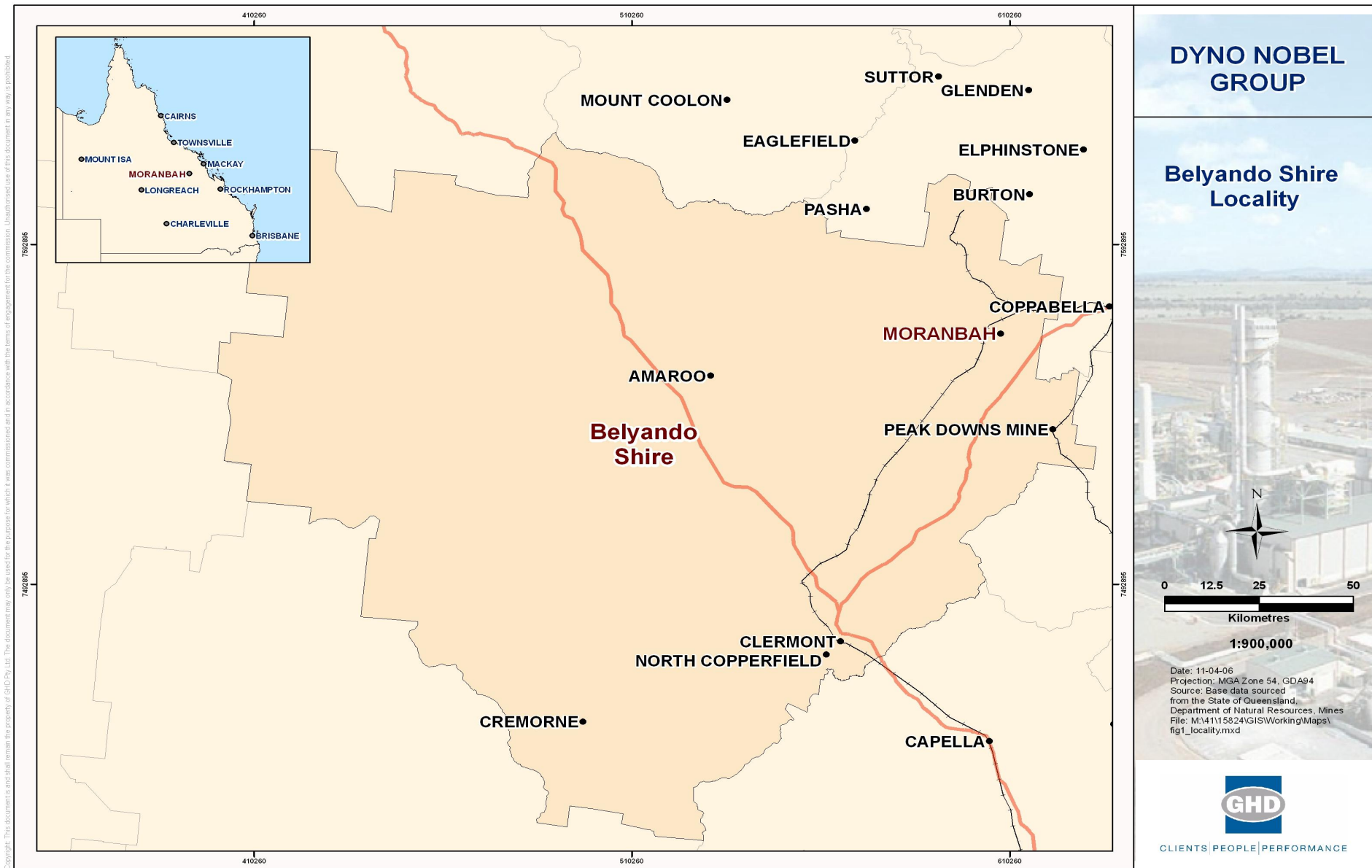


Figure 3: Regional and State Areas



2.3 Social Impact Assessment Methodology

The methodology for this Social Impact Assessment (SIA) was developed based on published SIA methodologies, however it was amended to take into consideration the specific nature of the project and resources. The SIA methodology is set out in Table 3.

Consultations with the Moranbah stakeholders (see Appendix C) were a critical component to the SIA and were used to verify the data developed in the desk-based research and to assist in identifying the social impacts and mitigation and enhancement strategies.

Results of the consultations with Moranbah stakeholders are reported throughout the report, rather than having a section dedicated to stakeholder consultations.

2.4 Social Impact Assessment Consultation and Community Consultation

The SIA consultations with stakeholders will be included as part of the community consultation strategy undertaken as part of the EIS.

The outcomes from other community consultation implementation tools include:

- » Newsletter on the findings of the draft EIS; and
- » Feedback from the planned staffed information display on the findings of the draft EIS will be incorporated into the final SIA.

Table 3 Methodology for the Project

Step in SIA Methodology	Section of SIA Report	Task #	Timeframe	Desk Based Research	Consultation	TOR Reference
1. Scoping	Methodology	1	April	Review TOR, methodology, timeframe and budget Development of social indicators	-	-
2. Problem Identification	Introduction	2	April	Issues Matrix	-	-
3. Establish Alternatives	Introduction	3	April	What would happen if the Project did not go ahead	-	-
4. Profiling	Demographic Profile	4	April	Demographic profile of the immediate, regional and state study areas	Belyando Shire Council	Section 4.9.1 Existing Conditions
	Community Profile	5	April	A review of services provided to the Moranbah community at the immediate and regional level	Belyando Shire Council	Section 4.9.1 Existing Conditions
	Local and Regional Profile	6	April	A review of the development history of the immediate and regional study areas.	Belyando Shire Council	Section 4.9.1 Existing Conditions
5. Projection	Impact Identification	7	April and May	Comparative Study with another AN plant case study	-	Section 4.9.2 - Potential Impacts and Mitigation Measures
		8	May		One-on-one meetings with key stakeholders and focus group workshops with stakeholder groups (impact webbing and impact mapping exercises undertaken)	Section 4.9.2 - Potential Impacts and Mitigation Measures
		9	May	Review other technical reports drafted for the EIS (inc. land, air quality, waste, noise, health and safety, hazard and risk)	-	Section 4.9.2 - Potential Impacts and Mitigation Measures

Step in SIA Methodology	Section of SIA Report	Task #	Timeframe	Desk Based Research	Consultation	TOR Reference
6. Assessment and Evaluation	Significance of Impacts	10	May	Significance of impacts workshop (internal GHD process) based on impacts significance matrix (may include follow-up phone calls).	-	Section 4.9.2 - Potential Impacts and Mitigation Measures
7. Mitigation	Mitigation Strategies	11	May	Develop mitigation strategies based on the consultations and desk-based research (may include follow-up phone calls).	-	Section 4.9.2 - Potential Impacts and Mitigation Measures
8. Monitoring and Management	Monitoring	12	May	Develop monitoring and management strategies (linked to social indicators) to be included in the Project EMP based on the consultations and desk based research (may include follow-up phone calls).	-	Section 4.9.2 - Potential Impacts and Mitigation Measures



3. Case Study

3.1 Introduction

This case study involves the EIS prepared for the construction and operation of an AN nitrogen facility located on freehold land at Pickanjinie in South West Queensland. This example was chosen as the case study for this SIA due to the similarities in anticipated impacts. Ecos² undertook the SIA as one of the technical studies for the EIS.

3.2 Case Study Background

The facility will produce four main products to agricultural and industrial customers including 80,000 tpa of ammonia, 350,000 tpa of urea, 2000 tpa of nitric acid and 150,000 tpa of AN (prill and emulsion).

Covering an area of 40 hectares, including 20 hectares for the Plant and an additional 20 hectares for the water storage dams and evaporation ponds. The Plant will operate 24 hours a day for approximately 365 days per year over a minimum design life of 20 years.

3.3 Social Impacts

The benefits of the project were identified as:

- » Increasing investment and employment directly associated with construction and operation of the facility;
- » Secondary or multiplier effects giving rise to further substantial increases in regional and national output and employment;
- » Greater regional economic stability through a broadening of the economic base; and
- » Improved utilisation of social and economic infrastructure in the region.

The social impacts associated with the construction and operations of this AN Plant were anticipated to be most evident in the surrounding towns of Roma (34 kilometres from Pickanjinie) and Wallumbilla (eight kilometres from Pickanjinie). The following social impacts were identified:

- » Direct increase in population to Bendemere Shire, in the Roma district, particularly during construction;
- » Increased temporary housing and accommodation competition in an already limited market;
- » Increased demand and competition for local goods and services;
- » Increased demand for water, and other essential services; and

² Ecos Consulting (Australia) Pty Ltd (2001)

- » Road impacts associated with the movement of workers, equipment and product.

3.3.1 Population Impacts

The anticipated impacts on population identified in the EIS case study involved the influx of predominantly male, construction workers who had the potential to cause a major increase in the already male dominant population. Employment for up to 500 construction workers and 150 operational staff was planned and the limited availability of accommodation was likely to result in this additional population being housed at Roma. The following tables illustrate the expected additional population for the construction and operational phases of the EIS case study.

Table 4 Population Impacts for Pickanjinnee during Construction

Category	Number
Maximum construction workers	500
Minimum Non-local construction workers	285
Average over peak period	325
Non-local average	210
Partners accompanying – maximum	65
Children accompanying – maximum	150

Table 5 Population Impacts for Pickanjinnee during Operation

Category	Number
Maximum operational workforce	150
Mean Non-local (max 130, min 85)	45
Partners accompanying – maximum	30
Children accompanying – maximum	75

3.3.2 Increased Demand for Community Services

The anticipated increase in demand for community services identified as a social impact of the Nitrogen Facility at Pickanjinnee was accommodated by the existing facilities at Roma. The possibility of the need for additional teachers was also identified.

3.3.3 Road Impacts

Impacts associated with the movement of workers, equipment and product during the construction phase was identified as an impact. During this phase, 500 workers during



peak periods will be required to travel to the site from Roma. Plant equipment was to be transported by road travelling via the highway and trucks were used to distribute produce from the site.

3.4 Implications for the Proposed Moranbah AN Plant

The impacts highlighted in this EIS case study are expected to be similar to those likely to be experienced by Moranbah, however impacts on available services such as housing and community services may be greater. Moranbah has very limited housing stock, both temporary and permanent, and the addition of extra people will add to the already existing demand for housing in the area. Due to the nature of the town of Moranbah and the smaller population in comparison to Roma, impacts identified through the case study may be more severe. For example, Roma was capable of supporting the increases in population and demand on services, while Moranbah may not. The anticipated workforce for the Proposed Moranbah AN Plant is expected to be sourced from outside Moranbah, increasing the social impacts identified in the case study by bringing additional population into the area such as need for housing and community services. In addition, given that Central Queensland is in drought and water shortages are likely, increases in population will put further strain on the available infrastructure supplies. These issues require careful consideration of mitigation strategies as a component of this SIA.

4. Demographic Profile

4.1 Introduction

This section provides a summary of the demographic profiles of the immediate, regional and state study areas identified for this SIA. This information will be used to:

- » Provide baseline demographic data from which to identify impacts at the immediate, regional and state level; and
- » Develop appropriate mitigation, monitoring and management strategies (through the use of social indicators).

The importance of understanding the make up of the Moranbah community was stressed during consultations with Stakeholders. For example, there are people living in Moranbah that do not have any direct connection to the coal mines and a proportion of households do not have access to the 'mine salary'.

4.1.1 Data Sources

Data used in this demographic profile was obtained from several sources including the Australian Bureau of Statistics (ABS) 2001 Census; the Planning, Information and Forecasting Unit (PIFU) of the Queensland Department of Local Government, Planning, Sport and Recreation; and Queensland Treasury.

Due to the Census data now being almost five years old and considered out of date, the information and analysis provided herein should be considered indicative only. The more recent PIFU data, including population forecasts, however can be viewed with greater accuracy.

Where possible, the results of the demographic profile were discussed with Moranbah stakeholders to verify the results. Where the statistics were no longer accurate (if based solely on the 2001 Census) discussions were held on the current situation which was based on anecdotal evidence only.

The representative from Belyando Shire Council noted that the 2001 Census results are no longer representative of Moranbah, and that the 2006 Census results will be more accurate. The Census however may not properly account for the people living in transition accommodation (for example construction camps).

4.2 Social Indicators

Social indicators are used to measure the current state of a population or adequacy of provision of services. In this case, social indicators will be used to provide an assessment of the state of the social environment of Moranbah, aid in identifying the potential social impacts and the development of monitoring programs for the project.

Reference will be made to the following indicators:

- » Statistical indices such as Socio-Economic Index for Areas (SEIFA) and Accessibility/remoteness Index of Australia (ARIA)

- » Unemployment rate;
- » Gender composition; and
- » Housing availability (both rental and for purchase).

The state of each indicator will be noted as well as the implications and potential impacts in section 4.3 onwards.

4.3 Population

As at 30 June 2003, Moranbah had an estimated resident population (ERP) of 6,673 people (OESR 2004), with an average age of 35 years (Belyando Shire Council 2006).

At 30 June 2005, the regional study area had an ERP of 10,651 people. Belyando Shire has seen a rate of population change of 1.1 % between June 2000 and June 2005 compared with the State with 2.2 % growth over the same period. Projections suggest that the Belyando population will see a decline from 9,948 in 2001 to reach 9,133 in 2026.

Mining is a vital component of the economy of the Belyando region. Figure 4 illustrates the impact of the expansion of mining activities in the area. There is the potential with the expansion of mining activities (and associated service provision) that the population of Belyando region could increase by approximately 6,000 people. While this projected growth would occur over a period of 5 to 10 years, the social impacts of such an increase in population would necessitate the need for careful planning of social infrastructure for the region.

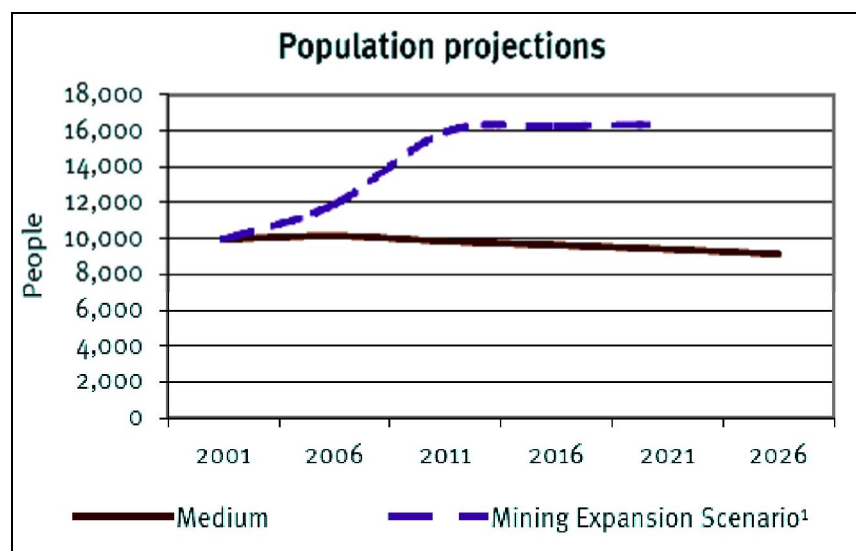


Figure 4: Population Projections Incorporating Mining Expansion in the Belyando Region (PIFU 2006)

During consultations with Moranbah Stakeholders there was consensus that the population of Moranbah will increase following the PIFU population projects based on the mining expansions (and associated service provision).

Moranbah Stakeholders estimate there are between 2,500 and 3,500 people in temporary accommodation in the town and within close proximity of the town.

Moranbah Stakeholders also explained that there is a seasonal population decrease during the Christmas and Easter school holidays. This maybe explained by the high disposable income allowing families to leave Moranbah and go on holidays or for families to relocate to their homes in Mackay or other regional centres for the school holidays.

4.3.1 Transience (B22)

In 2001, the majority of the immediate study area population appeared to be relatively stable on a short-term basis (same address as the year prior to the Census) with 79.1 % of people retaining the same address as they did for the previous year. This rate is comparable for both the Belyando Shire (80.1 %) and Queensland (77.4 %).

Table 6 presents the data on population transience.

Table 6 Population Transience, All Study Areas (ABS 2001)

	Same Address as 1 Year Ago	Different Address as 1 Year Ago	Same Address as 5 Years Ago	Different Address as 5 Years Ago
Immediate Study Area	79.1 %	20.9 %	49.5 %	50.5 %
Belyando Shire	80.1 %	19.9 %	51.3 %	48.7 %
Queensland	77.4 %	22.6 %	49.5 %	50.5 %

Results are also comparable on examination of longer-term residence (5 years). The immediate study area has the same percentage of people who retained the same address as 5 years ago as Queensland (49.5 %), which is slightly lower than the region (51.3 %). This means that about half the population of the immediate study area and Queensland had moved address in the previous 5 years.

Anecdotal evidence suggests that these results were applicable for 2001, with the down turn in the coal mining industry in the late 1990's and the upturn in early 2000s.

Anecdotal evidence also suggests that the population of Moranbah is stable at the moment due to the lack of available land and housing (not taking into consideration the development and people staying in accommodation camps), however there is a turnover of people/families living in Moranbah.

The Principal of the Moranbah State High School reported a turn over of 60 students in 2005 and up to one-third turn over of teaching staff (although this is linked to the Department of Education 3 year rotation of staff).

4.3.2 Age Structure (B03)

In 2001, the immediate study area had a greater proportion of people aged between 25 and 54 compared to both the region and State. Figure 5 illustrates the age structure of the three study areas.

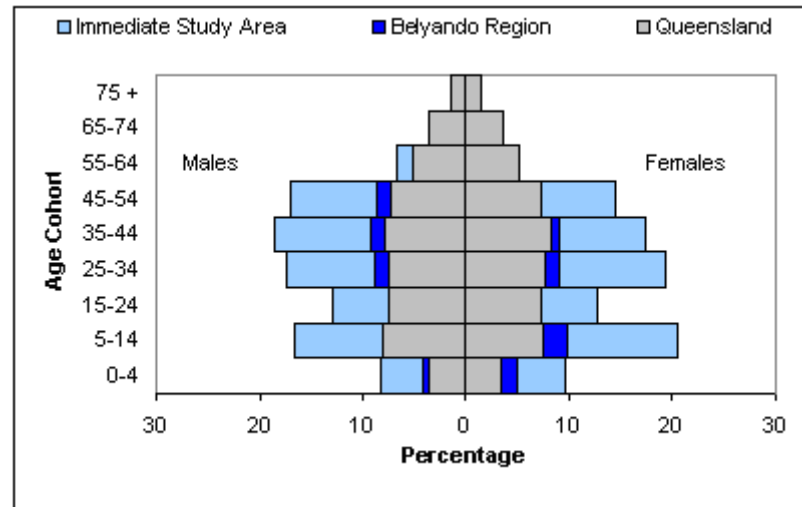


Figure 5: Age Structure, Immediate, Region and State Study Areas (ABS 2001)

In 2001 the immediate study area had no people aged over 75 years, however this is no longer the case. A greater percentage can be found in this age cohort amongst the regional and state populations as indicated. There is a wide spread of the immediate study area population from the 5 to 14 age cohort to 25 to 54, which reflects a large working age population consistent with the mining activities in the area. These greater numbers are offset by the more gentle spread throughout the age cohorts of the regional and state populations.

Anecdotal evidence provided by Moranbah Stakeholders suggests that there are people living in Moranbah in the older age cohorts and not moving 'to the coast' for retirement. Reasons for people in the older cohorts not going to the coast include the cost of relocating and the desire to remain close to their family living and working in Moranbah. There are some families that have lived in Moranbah since the town was established in 1969, with up to 4 generations of the same family living in town.

In terms of gender make-up the immediate study area has a similar percentage of males aged between 25 and 44 when compared to the region and state. At the time of the 2001 Census, the ratio of males to females was 1.3:1, indicating a substantial male population. This can be attributed to the occupations and industries prominent in the area and the high numbers of families in the area that accompany the workers. In contrast, there are larger percentages of people aged between 0 and 14, which could indicate numbers of workers' children. These percentages are also greater than the region and state, and may foreshadow the need for future social services directed at these age cohorts.

At the time of the SIA consultations for the project, Moranbah Stakeholders estimated that there were between 2,500 and 3,500 people living in the accommodation camps, with a significantly high population of males occupying the rooms. This changes the gender proportions of Moranbah considerably, with significantly more males than females in the 25-44 year old age cohort.

4.4 Families (B17)

In 2001, family types varied considerably across the three study areas, with the majority of the immediate study area (66.1 %) comprised of dual parent families with children. This percentage increases at the regional level (71.5 %) and then decreases at the State level (59.2 %). The immediate study area has similar numbers of couple families with children when compared to Queensland.

The immediate study area has a greater percentage of couples without children (27.7 %) compared to the region (21.1 %) and State (25.1 %). Conversely Queensland has the highest percentage of one parent families amongst the study areas with 14.5 %, followed by the Belyando region (7 %) and the immediate study area (6 %). Queensland has the highest percentage of other family types. Table 7 presents the family types of all three study areas.

The trends in family composition may reflect the differing lifestyles in each of the study areas that range from rural to urban and the subsequent community types.

Table 7 Family Type (numbers of families), All Study Areas (ABS 2001)

Family Type	Immediate Study Area	Belyando Region	Queensland
Couple with Children	1,260 (66.1%)	5,368 (71.5 %)	1,640,531 (59.2 %)
Couple without Children	527 (27.7%)	1,585 (21.1 %)	694,265 (25.1 %)
One Parent Family	115 (6%)	522 (7 %)	401,193 (14.5 %)
Other Family	3 (0.2%)	33 (0.4 %)	34,939 (1.3 %)
Total	1,905	7,508	2,770,928

4.5 Cultural Diversity (B06)

In 2001, the immediate study area has 83.3 % of people born in Australia. This percentage is comparable to both the Belyando Region (84.6 %) and Queensland (76.2 %). 5.1 % of people in the immediate study area were born in Main English Speaking (MES) countries including the UK and New Zealand, while these figures were higher for both the region (4.7 %) and State (9.6 %). These trends were also mirrored in the numbers of people who were born in Non-Main English Speaking (NMES) countries such as China, with the immediate study area having 3.0 %, the region 2.2 % and the State 4.5 %. Figure 6 illustrates these trends.

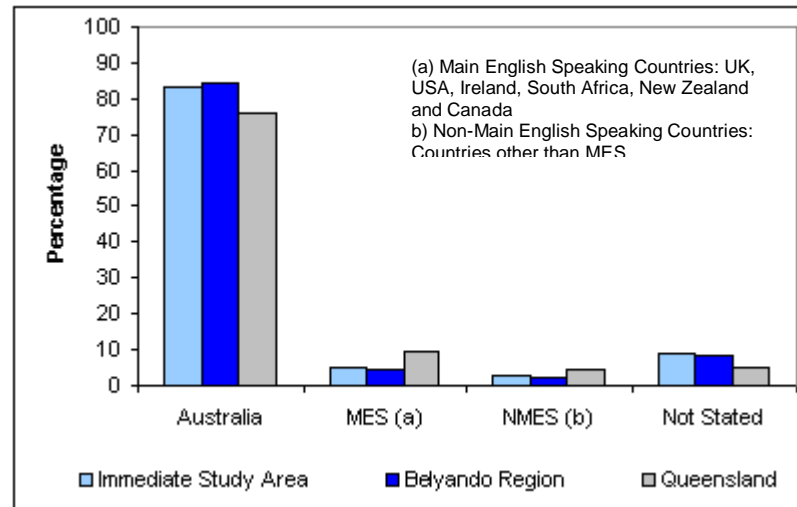


Figure 6: Birth Place by Country (ABS 2001)

There are a total of 126 Indigenous and Torres Strait islanders within the immediate study area. This accounts for 1.9 % of the total population within the immediate study area in 2001, which is lower than the Shire (with 2 %) and Queensland (with 3 %).

4.6 Education (B11)

In 2001, the majority of people within the immediate study area are not attending an educational institution (68.3 %). Of those that are however, 11.9 % (or 774 people) are attending primary school, a smaller number (426 people or 6.6 %) are attending secondary school.

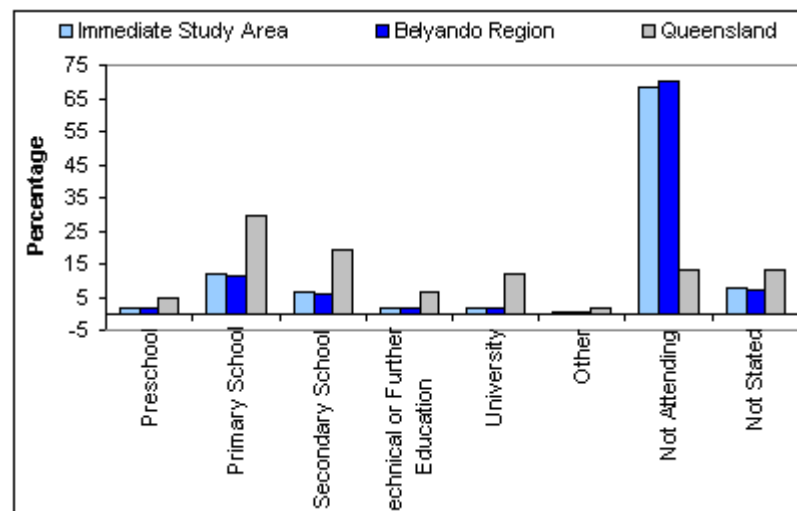


Figure 7: Attendance at Educational Institutions (ABS 2001)

These trends are similar in the Belyando region, with 11.3% in primary school and 6.2% attending secondary school. A much higher percentage of people are not attending any educational institution. These trends are reflected in the age structure of

the population of both the immediate and regional study areas. The lower percentage of people within the school age cohorts contributes to the small number of children attending school. The greater numbers of people within the adult age cohorts of 25 and above (especially those of working age) (as discussed in section 3.2) account for the large percentage of people not attending any form of schooling at the time of the 2001 Census.

According to consultations with the Principals of the Moranbah State School and Moranbah State High School, there are an estimated number of 1,000 students attending both primary schools and 500 students attending the Moranbah State High School.

In 2001, the highest category of educational attainment within the immediate study area is certificate (22.7 %), followed by bachelor degree (6%) and advanced diploma (3.2%). 54% of people indicated that they had no post-school qualifications, which may reflect the type of occupations within the immediate study area. 32 people (or 0.7%) had postgraduate degrees or graduate certificates (1.1%). These figures are higher in the Belyando region, where 20.5% of people attained a Certificate, 5.7% of people were awarded bachelor degrees and 0.6% of people had a postgraduate degree.

In Queensland, 8.3% of people indicated that they had attained a bachelor degree, followed by 5.5% with an advanced diploma. 1.4% of people had a postgraduate degree. Table 8 presents the data on educational attainment.

Table 8 Level of Education Attainment (B23) (ABS 2001)

Level of Education	Immediate Study Area	Belyando Region	Queensland
Postgraduate Degree	32 (0.7 %)	42 (0.6 %)	38,740 (1.4 %)
Graduate Diploma and Graduate Certificate	53 (1.1 %)	58 (0.8 %)	31,775 (1.1 %)
Bachelor Degree	288 (6 %)	420 (5.7 %)	235,113 (8.3 %)
Advanced Diploma and Diploma	152 (3.2 %)	236 (3.2 %)	156,001 (5.5 %)
Certificate	1,088 (22.7 %)	1507 (20.5 %)	451,525 (16 %)
Not stated	588 (12.3 %)	895 (12.2 %)	305,262 (10.8 %)
Not applicable	2,587 (54 %)	4202 (7.1 %)	1,604,681 (56.8 %)

The trends associated with educational attainment in the immediate study area are linked to the occupations and industries in the area (to be discussed in section 4.9) in which most become qualified through attaining a certificate or graduate diploma.

4.7 Housing (B18, B19)

In 2001, dwelling types across the three study areas are comprised mostly of separate houses, with the immediate study area having a lower percentage of separate dwellings (77.1 %) than both the region and State. 3.5 % of dwellings were identified

as flats or units within the immediate study area and townhouses account for 0.7 % of dwellings. Figure 8 illustrates these trends.

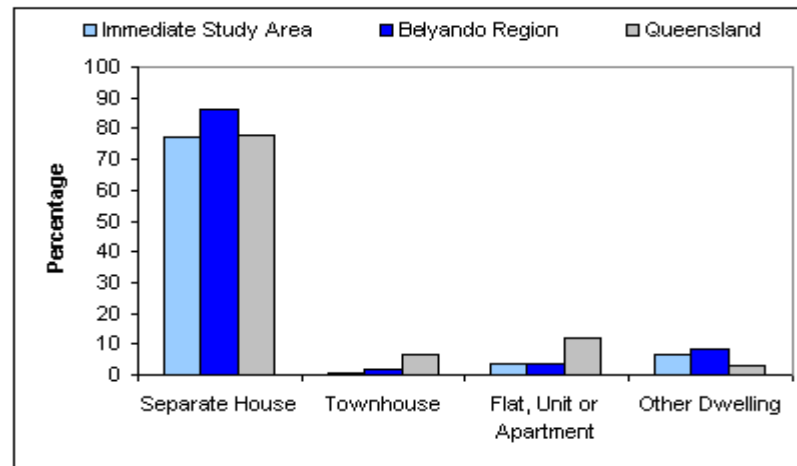


Figure 8: Dwelling Types, All Study Areas (ABS 2001)

The mining focus of the immediate study area is reflected in the relatively high percentage of dwellings identified as 'Other', which includes improvised homes or tents (6.4 % of dwellings). The percentage of these types of dwellings is comparable for the region (8 %), but much lower for the State (3 %) (see Figure 9).

These trends could be explained by the transportable accommodation used in the 'accommodation camps' or 'construction camps'. Since 2001, there has been a significant increase in the number and size of 'accommodation camps' in Moranbah, for example MAC Accommodation.

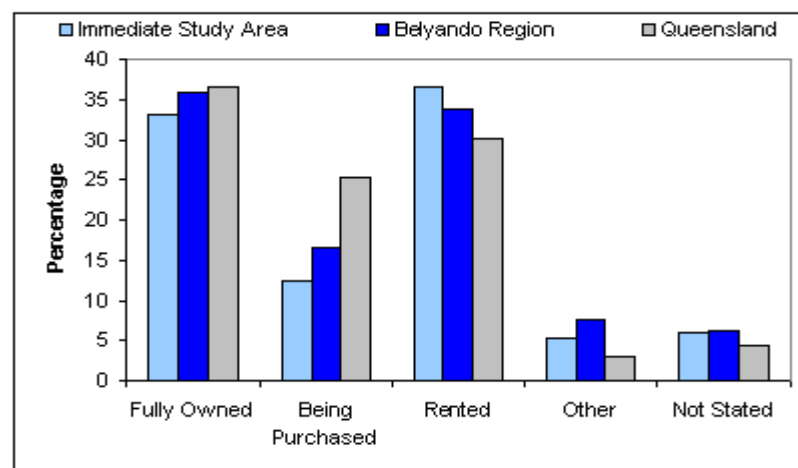


Figure 9: Tenure Type, All Study Areas (ABS 2001)

There have also been several new housing developments since 2001, the majority of these have been separate houses to accommodate the families moving to Moranbah, refer to section 4.71.

In 2001, 33 % of dwellings in the immediate study area were fully owned. In the same category, the region had 36 % and the State had 37 %. A higher proportion (37 %) of dwellings were rented when compared to those being purchased in the immediate study area (13 %).

Moranbah Stakeholders explained that these percentages could reflect the up turn of the coal market in the early 2000s, with the percentage of individuals owning their own homes versus the mining companies owning the properties and renting them back or interstate investors owning the properties and renting them out.

4.7.1 Housing in Moranbah

Property prices in Moranbah have increased 6.3 % between the December and September quarters of 2005 from \$300,000 to \$319,000³. For the same period, the Belyando region saw a 5.3 % increase, rising from \$290,000 to \$305,500⁴.

At year-end 2005, 180 residential dwelling unit approvals were made in the Belyando region (OESR 2006). While only representing 0.4 % of the overall approvals for the State, these still totalled \$37.6 million. Residential building approvals for the Belyando region for the December 2005 quarter equalled \$8.4 million. For the same period, Queensland had \$2,062.4 million of residential approvals.

Consultations with Moranbah Stakeholders identified the housing shortage in Moranbah. Moranbah Stakeholders also linked the housing shortage to the increase in housing prices – based on demand, and the inability of families to move to Moranbah because of there is nowhere for families to move too.

Based on consultations with Moranbah Stakeholders, rent for 3-4 bedroom houses can vary from \$300 to \$900 per week, and \$150-\$200 per room in a house. No formal data on rental costs in the immediate study area was available.

According to Moranbah Stakeholders, the only 'affordable' housing in Moranbah is considered to be the caravan parks, however these are permanently occupied.

There is short term and crisis accommodation available in Moranbah (as managed by ELAM), however it is limited and only available for people who meet the Centrelink criteria.

4.8 Income (B31)

In 2001, Queensland generally had a varying spread across the income brackets, while the immediate study area and the Belyando region peak in household income around the highest brackets. The immediate study area has the highest percentage of weekly household income at the \$1,500 to \$1,999 bracket (24 %). Figure 10 presents the percentages of households within each age bracket for each study area.

³ Source: REIQ (2006) *Queensland Property and Lifestyle: The Latest in Real Estate Trends*

⁴ Source: REIQ (2006) *Queensland Property and Lifestyle: The Latest in Real Estate Trends*

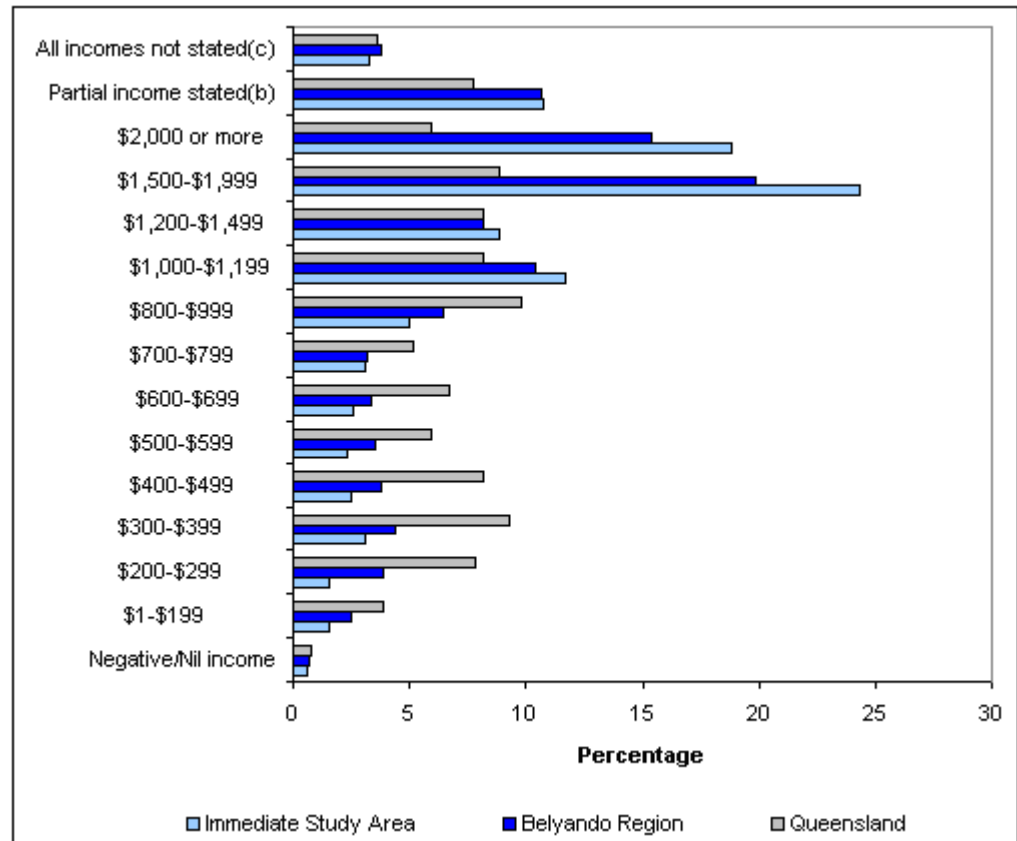


Figure 10: Weekly Household Income (ABS 2001)

Regional data is similar with 20 % of households earning between \$1,500 and \$1,999 and 15 % earning \$2,000 or more. These figures are much greater than Queensland in these brackets (8.9 % and 5.9 %). The immediate study area also has smaller numbers of households earning lower than \$800.

This concentration of household income around the higher brackets can be linked to the industries that utilise the immediate and regional study area to carry out operations. Mining contributes a percentage of money to the local economies of these areas and this is reflected in the amount that people get paid.

Based on the anecdotal evidence of Moranbah Stakeholders, even though there are more people in Moranbah, there is less money being spent in town. This is because those people staying in the accommodation camps are only in town for 4 nights and when the mining or related service provision employees and contractors are staying in the accommodation camps they are not spending money in town. If they are, it is only minimal. This is because when not working, they are sleeping and the accommodation camps provide meals.

It is also important to note that there are some families in Moranbah who are on Centrelink payments and do not have access to the mining wages to support the household income. Based on consultations with ELAM, there are increasingly fewer people living in Moranbah in this situation due to the rising cost of living.

4.9 Labour Force (B22)

4.9.1 Labour Force Status

In 2001, the majority of residents (70.3%) in the immediate study area are employed on a full-time basis, compared to 69.8% of Belyando Region and 58.6% of Queensland. People employed on a part-time basis within the immediate study area account for 23.1% of the workforce, while those employed part-time at a regional level is similar at 23.3% and slightly higher at 30.3% for Queensland. Refer to Figure 11. These trends may reflect the nature of occupation of the residents of the immediate study area.

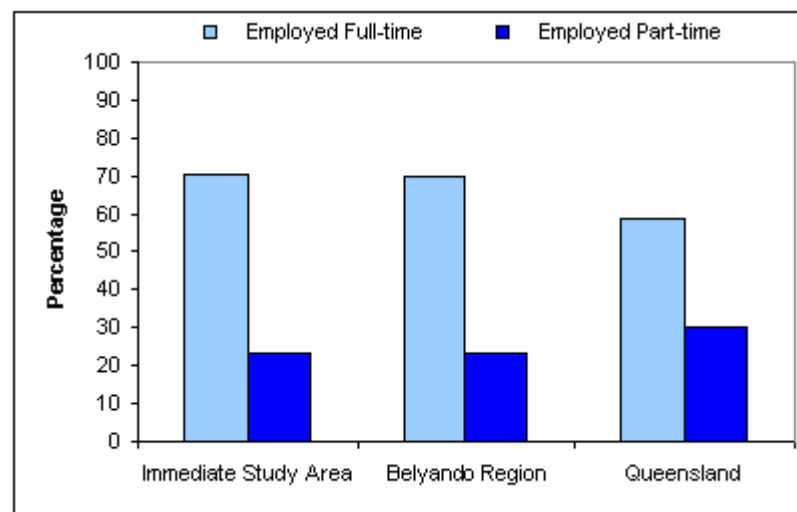


Figure 11: Labour Force - across all Study Areas

4.9.2 Unemployment Rate

In 2001, the unemployment rate of the immediate study area was comparable to the Belyando region and lower than that of Queensland. Table 9 presents a comparison of rates for the three study areas.

Table 9 Comparison of Unemployment Rates

Immediate Study Area	Belyando Region	Queensland
4.1% ⁵	4.0%	8.2%

The lower unemployment rate of the immediate study area (when compared to Queensland) is reflected in the purpose of Moranbah. Specifically constructed for the miners of the area, it is likely that people choosing to live in Moranbah would do so due to employment in the surrounding mines and associated employment opportunities. It is also reflected in the large numbers of people within the working age cohorts between

⁵ Average of Collection Districts (CDs) in Immediate Study Area

24 and 65 years of age. The rates for the immediate study area and region may be elevated by a higher number of employed youth.

4.9.3 Occupation

In 2001, the immediate study area had a higher percentage of intermediate production and transport workers (29%) followed by tradespersons (21%), and professionals (11%). This makeup of occupations reflects the staple industries of the area such as mining.

In comparison, Belyando Region has a higher percentage of intermediate production and transport workers (25%) and tradespeople (18%). These categories make up 9% and 13% of the Queensland occupations respectively. The occupation in which the greatest numbers of people are employed in Queensland is clerical, sales and service workers (17%) followed by professionals (16%). Figure 12 illustrates the spread of occupations across the three study areas.

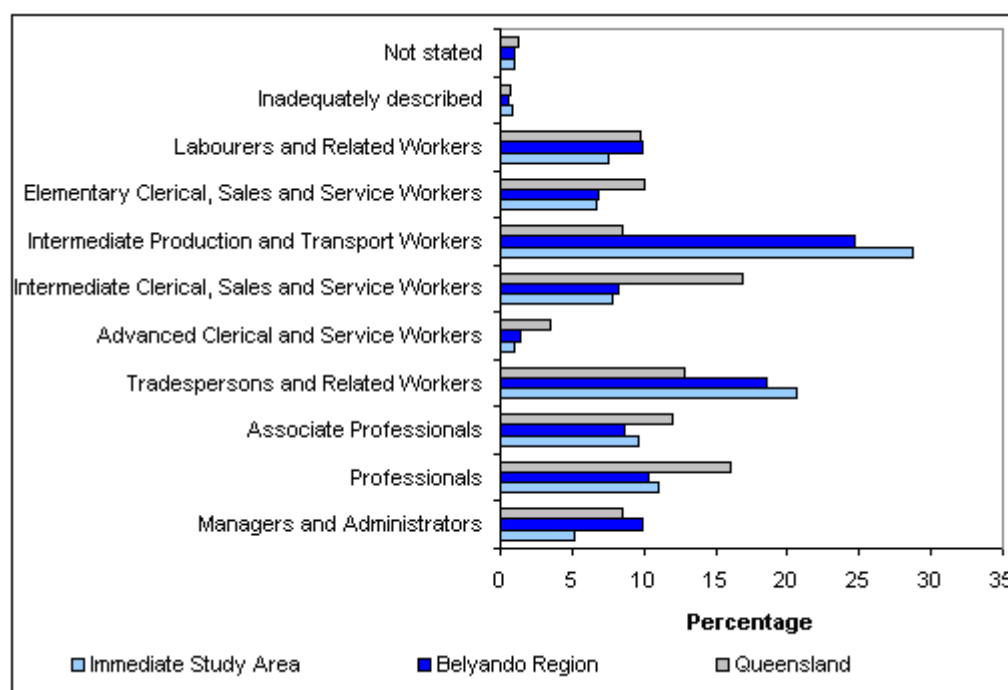


Figure 12: Employment by Occupation, all Study Areas (ABS 2001)

In 2001, the majority of people within the immediate study area were employed in either the mining (42.6%) or retail trade (9.7%) industries. Belyando Region has the highest rate of employment in the mining industry (83.1%), followed by agriculture (2.9%). Figure 13 illustrates the comparison between the three study areas. In contrast, Queensland has the greatest employment in the retail trades (15.3%), followed by manufacturing (10.7%). These trends are consistent with the land uses of both the immediate study area and Belyando Region, with significant mining and rural zonings in both areas. Only 1.2% of Queensland was employed in the mining industry, while only 4.9% of people were employed in agriculture.

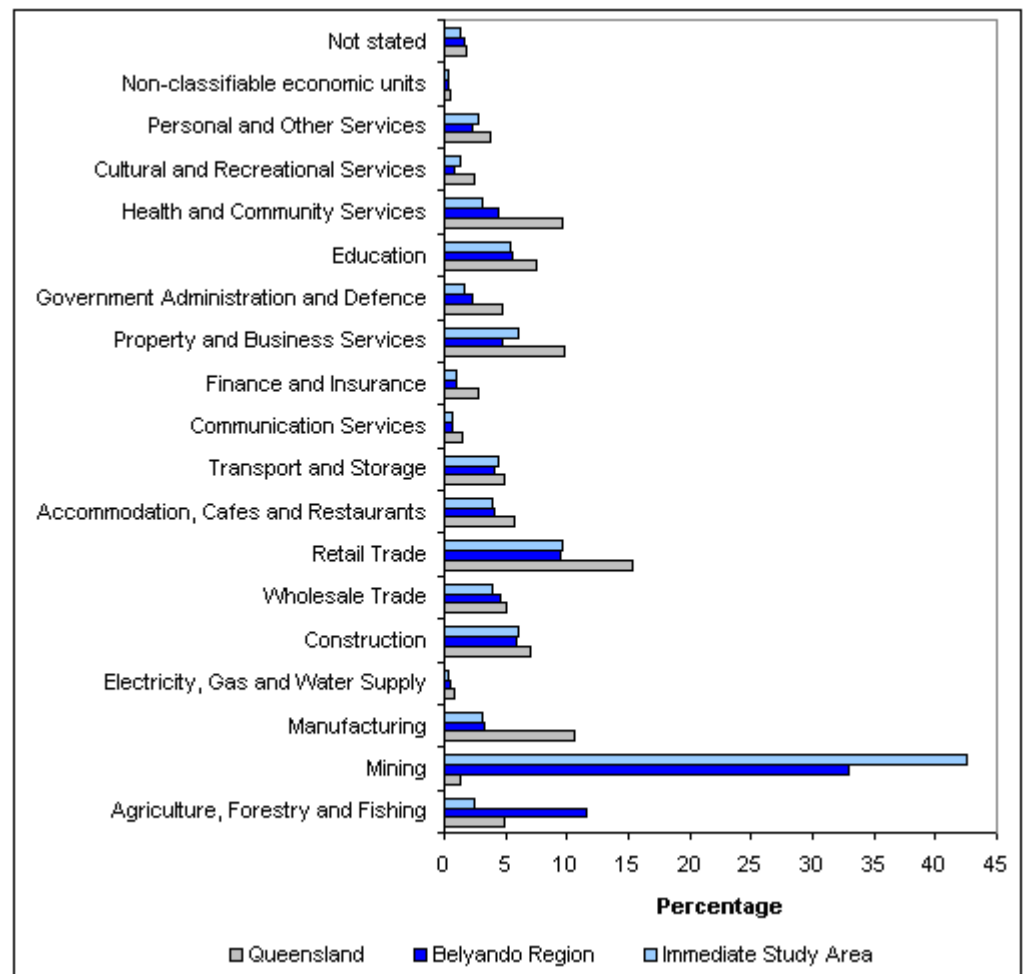


Figure 13: Employment by Industry, All Study Areas (ABS 2001)

4.10 Crime

Data on incidences of crime were only available at a regional level and included an aggregate of both the Belyando and Nebo Local Government Areas (LGAs).

In terms of levels of disadvantage amongst the regional population, Belyando has a greater percentage of people distributed across the higher levels of disadvantage according to the ABS Index of Relative Disadvantage⁶. Queensland has a steady distribution across the range of 1 to 5 with an average of approximately 20 to 25% of the population falling across these levels. In contrast, approximately 40% of the regional study area population falls midway on this range (1 = least disadvantaged and 5 = most disadvantaged), with 23% and 15% falling at the ranges 4 and 5. Table 10 presents the scores for the Index of Relative Socio-Economic Disadvantage (IRSED) of the three study areas.

⁶ A measure of disadvantage taken as an aggregate of Census indicators e.g. unemployment, low levels of education attainment etc.

Table 10 Comparison of Index of Relative Socio-Economic Disadvantage (IRSED) (ABS 2001)

Immediate Study Area	Belyando Region	Queensland
1000.3	983.2	991.5

When comparing the IRSED scores of the three study areas, the immediate study area has a higher score than both the region and Queensland, however Belyando region has a lower score than the State. These figures indicate a higher level of disadvantage amongst the regional population when compared to the state, which has implications for levels of crime and low socio-economic disadvantage across the region. While the immediate study area has an increased lack of disadvantage as opposed to advantage.

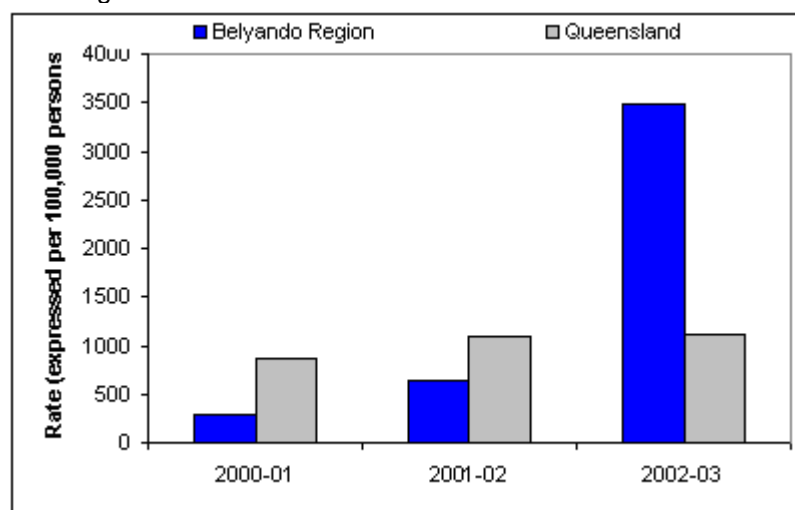


Figure 14: Offences against the person, 2000 to 2003 (OESR 2006)

The Belyando region has seen offences against the person increase slowly for the years 2000-01 and 2001-02, with substantial increases for the 2002-03 years (refer to Figure 14). Rates in this year increased by 1,850 offences per 100,00 persons or 59.3 % on the previous year. This rate was 1,373 offences per 100,00 persons greater than the Queensland rate. This rate was influenced by the large rate of sexual offences (1,809 offences per 100,000 persons). There was also a relatively higher rate of serious assaults (although this is comparable to Queensland). It is unclear what prompted these large increases, however consultations with Moranbah stakeholders reported a strike at the Peak Downs mine during the 2002-2003 year and the peak could be attributed to the result of social impacts of the mine⁷.

⁷ pers. comm.. Peter and Barbara Finlay, 08-05-06

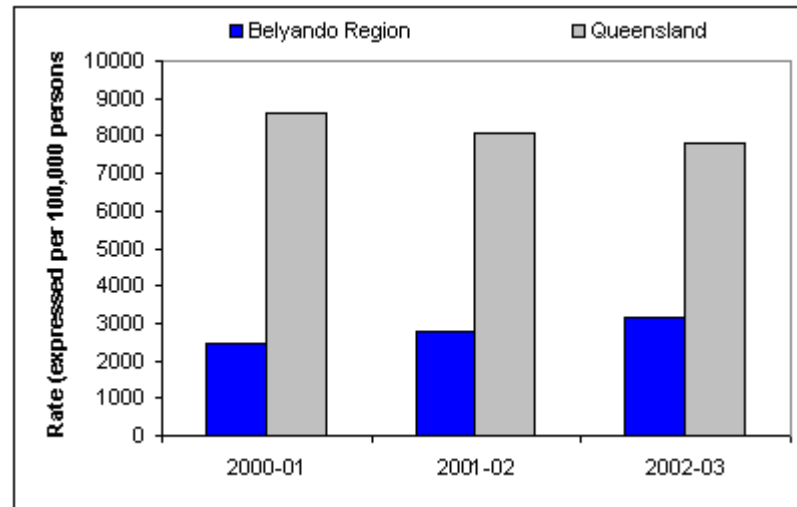


Figure 15: Offences against property, 2000 to 2003 (OESR 2006)

Offences against property (Figure 15) have remained relatively stable, with slight increases across the 2000 to 2003 periods. In contrast, the Queensland rate across these years has been steadily decreasing, however still remains considerably higher than the Belyando region (a rate of 4,619 per 100,000 persons higher than the study region).

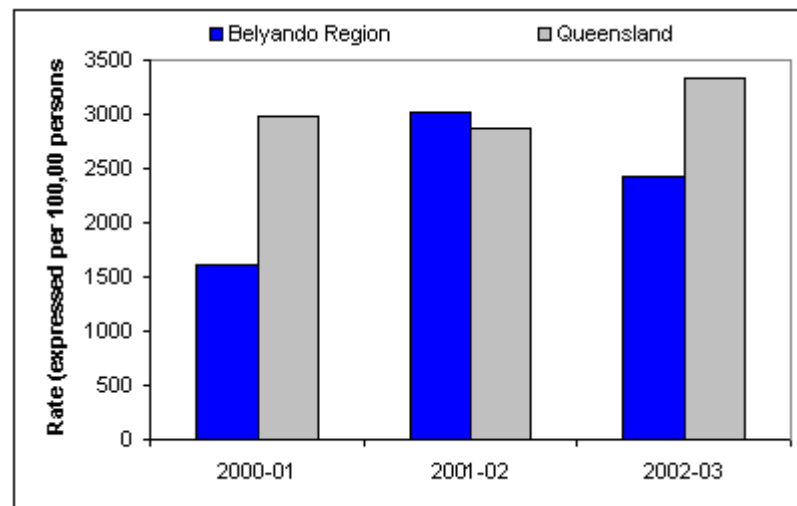


Figure 16: Other Offences

The rates of other offences (including drug and good order offences) have fluctuated for both the Belyando Region and the State (Figure 16). Increases were seen for the region during 2001-02 but these lowered again the following year. Queensland's rates have remained steady for the period 2000 to 2002, however increases were observed during 2002-03.

4.11 Tourism

Many of the tourist attractions in Moranbah give remembrance to the historical aspects of the town with the Isaac River providing recreational opportunities for tourists as well as monuments dedicated to the town's history. Mining equipment is also on show as an acknowledgment to the history of the town.

Tours of the Peak Downs Mine are offered monthly, giving visitors first hand experience of the mining activities that take place.

The natural environment surrounding the region also attracts people wanting to enjoy the outdoors with numerous parks, gardens and walking trails throughout the local national parks. Moranbah also hosts the Rotary Home Show and the Moranbah Rodeo and is famous for its May Day functions that are scheduled annually.

According to Moranbah Stakeholders, tourism has decreased and is restricted to 'day-trippers' only, with the lack of accommodation to support the tourism industry.

4.12 Summary

Moranbah is a town born of mining and the demographics of the area reflect this. With a large working age population compared to both the Belyando Shire and Queensland (Figure 11), Moranbah was home to 6,673 people in 2003. Comprised of a high percentage of families (Table 7), most people with post-school educational qualifications have attained a certificate (Table 8). The industries of the area, mostly mining, reflect the occupations that people are involved in. Compared to Queensland, the immediate and regional study area populations are highly involved in mining and agricultural activities.

The majority of people in the immediate study area are employed on a full-time basis, which again is comparable to the region but less than the State. The unemployment rate of the immediate study area is comparable to the region, but lower than the State, while the immediate study area has the highest percentage of weekly household income falling in the bracket \$1,500 to \$1,999.

The majority of the immediate study area population were born in Australia, with smaller percentages of people born in both main English speaking and non-main English speaking countries.

Dwelling types of immediate study area are comprised mostly of separate houses, which is consistent with both Belyando Shire and the State. The relatively high percentage of other dwellings, which includes improvised homes/tents, reflects the mining focus of the Moranbah. This dwelling type is also high amongst the Belyando Shire. A higher proportion of dwellings are rented in the immediate study area, while a lesser number are fully owned.

Incidences of crime across the Belyando region are much lower than Queensland, except for assaults against the person during 2002-03, where significantly higher offences were recorded (Figure 14).

5. Community Services Profile

5.1 Introduction

This section provides a summary of the services provided to the community in the immediate and regional study areas. This information will be used to:

- » Identify impacts at the immediate, regional and state level; and
- » Develop appropriate mitigation, monitoring and management strategies (through social indicators).



Moranbah Police Station

5.2 Location of Services

Moranbah is generally well serviced in terms of community services for the current population; however potential future increases may require extra provision in healthcare, including doctors and dentists (section 5.3 discusses these issues in greater detail). Table 9 sets out the community services available in Moranbah. Figure 17 illustrates the location of the major community facilities within Moranbah.

Table 11 Summary Community Services in Moranbah

Services	Service Available
Police	Yes
Fire	Yes
Emergency (SES)	Yes
Ambulance	Yes
Health/Medical	
Hospital	<p>Moranbah Hospital</p> <p>Hinterland Home and Community Enabling Services;</p> <p>Medical Superintendent (Dr Shulz);</p> <p>Outpatient Services;</p> <p>Physiotherapists;</p> <p>Radiographer/Sonographer; and</p> <p>Visiting Specialists.</p>
General	<p>Community Health Centre</p> <p>Alcohol, Tobacco and Other Drug Services</p> <p>Community and Child Care Nurses</p> <p>Counsellor</p> <p>Director of Nursing and Community Health Services</p>



Moranbah Hospital and Community Health Centre



Leichhardt House Medical Centre



Moranbah State School



Moranbah State High School



Moranbah Library

Services	Service Available
	School Based Youth Health Nurse Speech Pathologists
Child Health	Through Community Health Centre
Mental Health	District Mental Health Service (through Community Health Centre) Adult Mental Health Service Child Care and Youth Mental Health Service Visiting Psychiatrists
Aged Care	Some in-house care or at the hospital
Education and Training	
Preschool	Moranbah East State Preschool Moranbah Kindergarten and Preschool Moranbah State Preschool Playgroup
Primary	Moranbah East State School Moranbah State School
Secondary	Moranbah State High School
Tertiary	TAFE
Training	GW Training Plus IML International Training Joynson Mining Services Mintech Group Rope and Rescue SGS Australia Sharp Training
Other	IMAGE (Initiating Moranbah's Alternative Guidance Education) IMAGE/Learning Network Queensland
Housing	
Public/Department of Housing	ELAM – Emergency and Long Term Accommodation Moranbah
Company owned	BHP and Mitsubishi Alliance (BMA) and Anglo are the main companies but other mining related companies have purchased houses for their employees.
Private Rentals	Through real estates



Belyando Shire Council office in Moranbah



Moranbah Cinema



Moranbah Town Square

Services	Service Available
Retail Association	Yes
Cultural	
Library	Yes
Churches	Anglican Church Assembly of God Catholic Church Uniting Church
Cultural Centre	Yes
Art Gallery	In cultural centre
Government	
Local	Belyando Shire Council
State	Department of Justice Department of Housing Department of Tourism, Sport and Youth Queensland Electoral Office Queensland Transport
Commonwealth	No Commonwealth Government offices
Other Services/Businesses	Accountants Air Conditioning Advertising Agriculture/Animal Services Automotive Bakery Banks/Building Societies Bicycles and Accessories Cafes Cinema Cleaners Clothes stores (inc. Target Country and Rockmans) Communications Couriers/Freight Computers and Accessories Curtains and Blinds Driving School



Moranbah Fair – Shopping Centre



Grovensor Estate



Moranbah Swimming Pool

Services

Service Available

Dry Cleaners
 Drug and Alcohol Testing
 Employment Services
 Electrical Repairs and Sales
 Electricians
 Engraving
 First Aid Courses
 Florist
 Fruit and Vegetables
 Furniture and Floor Coverings
 Gardening
 Gift and Homewares
 Grocery Stores (inc. Coles)
 Hair and beauty
 Hire
 Ice Supplies
 Industrial and Engineering
 Industrial and Protective Clothing
 Insurance/Finance
 Jewelers
 Lab Testing
 Laundry Services
 Legal Services
 Mechanical Repairs
 Music/Electrical Stores
 Newsagent
 Painters
 Panel Beaters
 Pest Control
 Pharmacy
 Plumbers
 Post Office
 Produce Store
 RACQ
 Real Estates
 Restaurants, Cafés and Takeaways
 Screen Printing
 Secretarial/Office Services



Road sign to community clubs outside of Moranbah



Moranbah Bowls Club

Services	Service Available
	Security Services
	Service Clubs
	Service Stations
	Solicitors
	Taxation Services
	Vet
Tourism	
Hotels, Motels and Accommodation	Black Nugget Hotel/Motel Drovers Rest Motel Grosvenor Village Moranbah Accommodation Centre Moranbah Caravan Village Moranbah Motor Inn Moranbah Outback Motel Western Heritage Motel Coal Country Caravan Park
Tourism Information	Yes
Travel Agent	Yes
Roads	
Local	Belyando Shire Council
State	Department of Main Roads
Private	Some of the roads are private roads, operated by BMA
Access	
Road	Peak Downs Highway Moranbah Access Road Goonyella Road It is approximately a 2 hour drive to the closest coastal regional centre, Mackay.
Rail	Freight and coal only
Air	Airport, services run by Macair
Communications	
Radio	Yes (including local radio station, Radio 96.9FM)
Television	Yes (ABC, Seven, Ten, SBS and WIN)
Telephone	Yes
Internet	Connected in 1997, Public internet access in library



Federation Walk



Skate Park

Services	Service Available
	library
Transport	Bus service Taxi Queensland Rail (QR)
Community Organisations	Lioness Club Lions Club Masonic Lodge Moranbah Arts Council Moranbah Gentle Craft Club Moranbah Coal and Country Committee Moranbah Rotary Club Moranbah Rotary-Annes Returned Services League (RSL) Queensland Arts Council Queensland Womans Association QUOTA Club Trefoil Guild
Sporting Facilities/Organisations	Australian Rules BMX Club Bowhunters Bowls Club Boxing Club Bridge Club Campdrafting Dart Club Federation Walk Golf Club Girl Guides Gymnastics Club Highlanders Swimming Club Hockey Association Horse and Pony Club Kart Club Moranbah Line Dancers Moranbah Tennis Association Motor Cycle Riders Club Off-road Club Pistol/Gun Club



Services	Service Available
	Pottery Club
	Race Club
	Rodeo Association
	Rugby League Club (Miners and Rams)
	Rugby Union
	Scouts
	Skate Park
	Speedway Association
	Squash Club and Indoor Sports Centre
	Soccer
	Touch Football
	Rodeo Grounds
	Swimming Pools (50m and heated 25m)

Source: www.belyando.qld.gov.au (downloaded 10-04-06), Moranbah Telephone Directory (2005/06) and adapted by GHD in during SIA consultations.

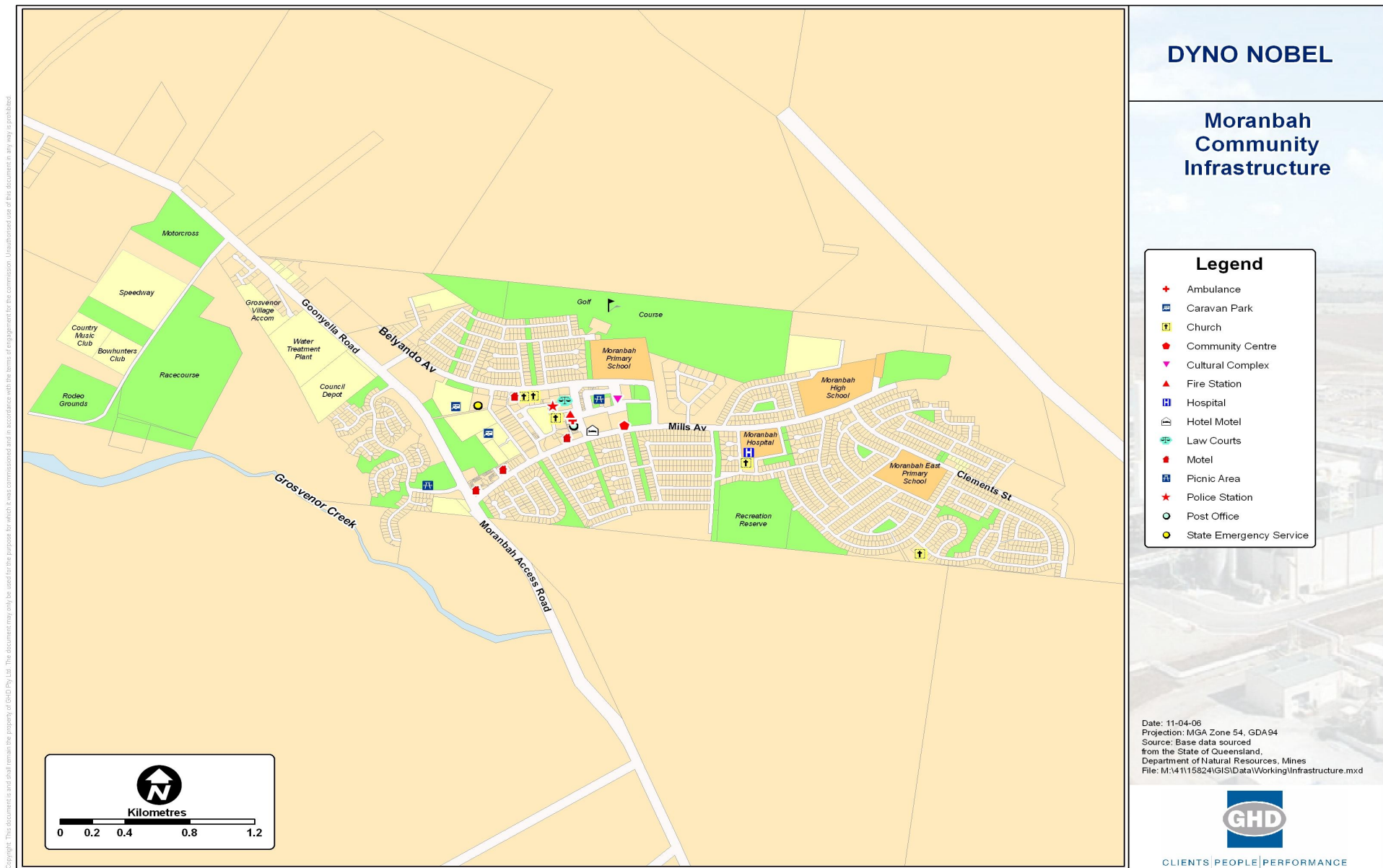


Figure 17: Social Infrastructure of Moranbah

5.3 Community Service Issues Highlighted by Moranbah Stakeholders

During consultations with Moranbah Stakeholders the following issues were highlighted with the existing environment (not in order of significance):

- » Limited availability of housing;
- » Restricted participation in sporting and community service organisations;
- » Waiting lists to access medical and dental services in Moranbah and other regional centres;
- » Current water restrictions for domestic use of water in Moranbah;
- » Limited access to childcare services; and
- » High cost of living.

The following is a description of the issues based on consultations with Moranbah Stakeholders.

5.3.1 Availability of Land and Housing

All Moranbah Stakeholders expressed their concern for the lack of land and housing in Moranbah and the impact this is having on the housing market and community values. With the lack of available land for housing and the growth of the coal industry in the region (there have been three new mines open in the Belyando Shire in the past 12 months) there have been a significant number of people moving to Moranbah to take up employment in the mines.

Due to the lack of land and housing and the increase in employees, there has been an increase in the amount of temporary or accommodation camps. People staying in these accommodation camps are usually people working or associated with the coal mines for the 4 day shifts.

The detached nature of Moranbah at present, with single people living in the accommodation camps and families living in housing in town, has impact on the community values of the town.

There has also been a transition of people occupying housing in Moranbah. With the housing boom in recent years, many long term Moranbah residents who purchased their homes for a nominal \$15,000 have been able to sell their homes for around \$350,000 and relocate their family to Mackay, with the mine employees travelling to Moranbah for work during the 4 day shifts (while staying in the accommodation camps).

Based on the anecdotal evidence of the Moranbah Stakeholders, there can be up to 6 people living in a 4 bedroom house, with a rent of \$150-\$200 per room charged.

There is a housing development currently under construction, known as the Grosvenor Estate, on the south west side of town, refer to Figure 18. This is a privately developed estate.



Figure 18: The Grosvenor Estate

The Belyando Shire Council had approved a housing development on the south east side of town (refer to Figure 19), however this was not approved by the Queensland Government because there was a Mining Development Lease (MDL) over the proposed area. Belyando Shire Council has since held two community meetings to identify another site for housing development.

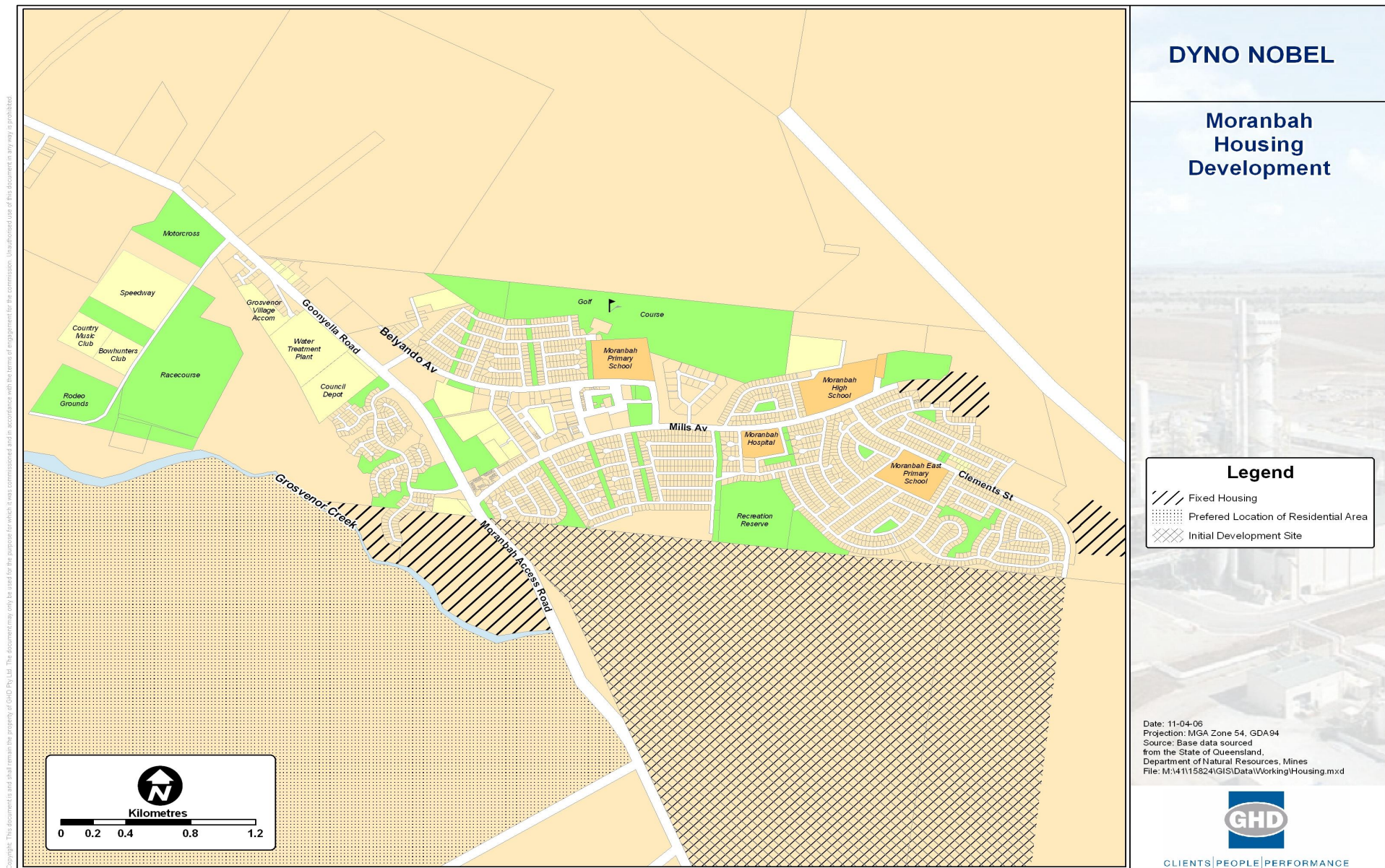


Figure 19: Proposed Housing Development in Moranbah

Figure 19 also shows the preferred location for housing development, as identified by the community meetings. The Belyando Shire Council is aware of the potential for social separation with the potentially half the town on either side of the Moranbah Access Road (which currently experiences a high level of traffic). Plans are in place to design an appropriate underpass to facilitate access to services. There is also the opportunity for future commercial areas with a focus on a shopping centre. It should be noted that this proposed development is in the concept stage only and no submission had been made for a development application at the time of writing this report.

5.3.2 Participation in Sporting and Community Service Organisations

Consultations with the Lions Club and Rotary Club revealed the decrease in people able to actively participate in sporting and community service organisations. The decrease in participation levels was attributed to:

- » The transition of people leaving and moving to town;
- » Members relocating to Mackay and only travelling to Moranbah for their shifts at the coal mines); and
- » The change in shifts at the coal mines (from 5 day shifts, to 7 day shifts and most recently in mid 1990s to 4 day shifts) and how this impacts on people's availability to participate.

5.3.3 Medical and Dental Services

Moranbah Stakeholders reported the demand for medical and dental services in Moranbah and in surrounding towns (including Mackay).

Consultations with the two doctors in Moranbah confirmed that they were working at their capacity, however there was not enough demand to warrant an additional doctor in town because of the type of medical conditions presented. The majority of medical services provided include (but are not limited too):

- » Children and youth;
- » Work place injuries;
- » Acute sickness; and
- » Required work place medical checks (including mine associated medicals).

Both doctors consulted for this report explained that the hospital provides the appropriate services for the town but that there is limited aged care services.

If there were demand for another doctor, Moranbah would be in competition with other regional towns in central Queensland to attract someone with the relevant qualifications and experience.

According to Moranbah Stakeholders there is a minimum three month waiting list (average of 6 months) for the dentist in Moranbah with a similar situation in Mackay.



5.3.4 Access to Water

The town of Moranbah is currently under water restrictions, with watering of lawns allowed only during designated times of the day. The Belyando Shire Council has also put a moratorium on the installation of new pools past July 2006.

5.3.5 Access to Childcare Services

Moranbah Stakeholders reported limited provision of adequate childcare services in town. There are childcare services in Moranbah but they are not adequate for women to actively participate in the workforce, for example the hours they are open and number of places available. It was reported that there maybe a new childcare centre opening in Moranbah.

5.3.6 Cost of Living

According to the Moranbah Stakeholders the cost of all goods and services has been increasing, predominantly the cost of housing, which is linked to the limited access to vacant land. With the lack of land and housing, there are restrictions on local businesses being able to grow to service the existing community. Without the housing local businesses cannot employ additional staff. Where potential employees can access housing, the rents are so high that the wages cannot cover the rent and other costs of living. Local businesses are also losing staff to the coal mines because of the higher wages they can pay, and the potential to access subsidised housing. With the lack of service providers in town, the costs then increase to meet the demand.

5.4 Summary

Moranbah is well serviced with community infrastructure and services. Many of the essential services are at their upper threshold, especially availability of land and housing, availability of medical and dental services, access to water and the cost of living. Additional growth in Moranbah will need to be in keeping with the provision of adequate community services and facilities.

6. Local and Regional Profile

6.1 Introduction

This section provides the historical context and identification of community values in the immediate and regional study areas. It allows the social assessors to gain an understanding of the study area to assist in:

- » Identify impacts at the immediate, regional and state level; and
- » Develop appropriate mitigation, monitoring and management strategies.

6.2 The History of Moranbah⁸

Moranbah is a mining town that was originally developed by Utah Development Company's development of the Goonyella-Riverside and Peak Downs mines. It was proposed in 1968 by the Utah Development Company Ltd. The proposal stated the company's intention to construct a town to house approximately 400 employees of the Goonyella Mine. The land was purchased from the *Moranbah* lease and became crown land, to be leased by Utah Development Company. Construction on the town of Moranbah commenced in the late 1960s and early 1970s

Once cattle country, Moranbah developed because of the need to provide employment and services to the miners and their families who worked in the multi-million tonne Goonyella-Riverside and Peak Downs mines, which are now managed by BHP Australia Coal.

Andrew Scott, a local pastoralist named his property *Moranbah*, which is thought to originate from one of the region's Aboriginal languages. The property became part of the Grosvenor Downs run after several large stations were joined, and gave its name to the Parish of Moranbah. In the 1920s the name Moranbah was used to designate the area of land on which the township was to be developed. The main income for the area during these times was beef.

The cattle industry is still alive in Moranbah today, however not to the extent it once was. There has been a significant reduction in the cattle and agricultural industries in the region due to the establishment and expansion of coal mining.

Moranbah now ranks 28th across the State in terms of population size (OESR 2004 – regional profiles) establishing itself as a regional township that today totals eight square kilometres.

6.3 Description of the Moranbah Community

Community values have changed and were best described by two Moranbah Stakeholders (refer to section 4.5 of chapter 7.3):

⁸ Data sourced from *Nothing but Scrub* (A. Murray 1996) and Belyando Shire Council

"I have seen Moranbah change from a dormitory town, to a community and now we are going back to a dormitory town"; and

"People come here because they want to go somewhere."

It became evident throughout consultations with Moranbah Stakeholders, that there have been significant changes to the town, from a 'dormitory to community and is in the process of changing back to a dormitory town again'.

The process of change from a 'community back to a dormitory town' has been based on a number of factors, including but not limited too:

- » The change in working conditions at the mine sites;
 - Originally Monday to Friday;
 - 1998 - Peak Downs changed to 7 day, 8 hour shifts; then
 - Mid-1990s - change to 4 day, 12 hour shifts.
- » The inexpensive price of housing in the coal downturn in 1998-1999, then the boom in the early 2000s to now;
- » An increase in the number of coal mines in the area (three have opened in the previous 12 months) has increased the number of people living in town, however with the lack of available land for housing, there has been a subsequent increase in the number and capacity of accommodation camps.

According to Moranbah Stakeholders there are between 2,500 to 3,500 people living in the accommodation camps. The accommodation camps only provide accommodation for single people, and most people with families wait to access housing for their family prior to moving the family to Moranbah.

There are a number of social issues created with this number of people living in accommodation camps and travelling to and from Mackay (or other homes away from Moranbah) at the end of shifts, including but not limited too:

- » No or minimal community participation in the Moranbah community (e.g. participation in sporting and service organisations);
- » Minimal economic spending in Moranbah;
- » Safety concerns of people driving on the Moranbah Access Road and Peak Down Highway at the end of a four day shift⁹; and
- » Impact on the families of the person working in the mine, with a partner and or parent absent from the family home for 4 nights per week.

The above impacts have had a flow-on impact to community values, vitality and lifestyle.

Moranbah Stakeholders described their town as somewhere people go to work; it is not a town that people want (or very few because of family connections) want to retire in. People who live permanently in Moranbah, live there to work and take advantage of the high wages associated with the coal mines, then move back to the coast. This is

⁹ Permanent employees have a bed to sleep after the shift but contract workers do not.

evident in the high transient rates of the town; the explanation for the consistent population is the lack of land and housing.

Moranbah Stakeholders also explained that there are limited recreational opportunities in town. The available recreational opportunities include sport and the cinema, however the sporting opportunities are decreasing due to the inability of people to participate in the administrative requirements of the sporting organisations. There are youth specific recreational opportunities including the youth centre (run by ELAM) and skate park (Belyando Shire Council).

The limited opportunities for recreational activities also act as an encouragement to relocate families in the coastal regional centres where there are more opportunities.

6.4 Economic Profile¹⁰

The economies of the Moranbah and Belyando Shire are based primarily on the mining industry, which has invested considerable amounts of money to build the region and the services that support it. The regional economy of the area is soundly supported by the administrative and commercial infrastructure of Clermont and Moranbah.

Beylando is rated as remote under the Accessibility/ Remoteness Index of Australia (ARIA). This index indicates the accessibility to services and relative remoteness of place in Australia. The Queensland Treasury has developed an index using a points rating system to measure the retail prices in regional centres across Queensland, which compares the cost of items across several categories with Brisbane. This data can be used to compare the prices that people pay in regional areas compared to city centres such as Brisbane.

Generally, the prices paid by households vary across Queensland, with items such as food, alcohol and tobacco being more expensive outside Brisbane, however these costs are offset by smaller housing costs (OESR 2001). In addition, transportation was more expensive in the inland regions than coastal centres. Table 12 presents the data for Moranbah¹¹.

Table 12 Indices of Retail Prices for Moranbah (OESR 2001)

Index	All collected items	All collected items less, rents/local authority charges	Food, alcohol and tobacco	Transport	Housing
Moranbah	101	103	105	104	89

Moranbah rates higher than Brisbane for all indices except for housing. The housing index for Moranbah is 11 points lower than Brisbane, indicating Moranbah residents pay less for housing than those in Brisbane. Conversely, Moranbah residents pay

¹⁰ Data in this section refers to the town of Moranbah and the region of Belyando Shire.

¹¹ (OESR 2001)

more for all other categories of goods than their city counterparts, although the difference is minimal overall (1 point).

The economic resources of an area indicate the economic situation of the people that live within a specified area. Table 13 presents data from the Index of Economic Resources produced by the ABS.

Table 13 Comparison of Index of Economic Resources (ABS 2001)

Immediate Study Area	Belyando Region	Queensland
1120.9	1045.3	991.5

The immediate study area has a higher score on the index of economic resources than both the Belyando region and Queensland. This score indicates that the area has a higher proportion of the population that falls in the low-income bracket. In addition, this higher score also denotes more households living in large houses.

Based on the anecdotal evidence provided by Moranbah Stakeholders, there is limited economic benefit to the town from the construction camps due to the fact that the people staying in the construction camps are only in town for their four-day shifts. Generally, if the workers are not on shift they are sleeping, and with meals provided by the construction camps, there is no reason to travel into town.

People staying in the construction camp would predominately spend money in Moranbah in the following way:

- » Coles (but just for small purchases such as soap, toothpaste and minor food items);
- » Take away stores (KFC, Red Rooster and Dominos); and
- » Alcohol, but this is limited given the no-drug policies of the coal mines.

6.5 Existing Housing Market

In direct response to the terms of reference (section 4.9.1), the following description is provided on the existing housing market in Moranbah.

Table 14 Existing Housing Market

Terms of Reference	Response
The size of the private rental market in the area	According to estimates provided by Moranbah Real Estate, 30 to 40% of the housing market is comprised of rental properties.
The vacancy rate of rental accommodation, including assessment of seasonal fluctuations.	There is a consistent vacancy rate of rental accommodation throughout the year, however rentals only remain empty during the year for a maximum of 4 days. On average there are 1-2 houses per week advertised for rent throughout the year. There is an increase in vacancies in December with up to 10 houses becoming available, however these properties are only available for up to 2 weeks, due people being on holidays.
Typical rents for the area.	Typical rents in the area: <ul style="list-style-type: none"> » 3-4 bedroom houses, \$600-\$900+ per week; and



Terms of Reference	Response
	<p>» Rooms, \$150-\$200 per week.</p> <p>There are limited units, townhouses or apartments available for rent, where available prices can range from \$200-\$500 per week.</p> <p>Moranbah Stakeholders reported that the coal mines assist by subsidising rental costs.</p>
The availability and typical cost of housing for purchase in the area.	<p>There is limited availability of housing in Moranbah. When a property is on the market, it would be sold in an average 1-2 weeks because of the high demand.</p> <p>According to Real Estate Institute of Queensland (REIQ), property prices have increased by 6.3% between the December and September quarters of 2005, from \$300,000 to \$319,000.</p>
The availability of social housing in the area.	<p>According to ELAM¹² there is limited or no available affordable housing (provided by ELAM) in Moranbah. ELAM manages the following properties¹³. They are only available for a short term lease and potential tenants must meet the Centrelink criteria:</p> <ul style="list-style-type: none"> » 6 crisis units; » 3 crisis houses; » 5 units for long term tenancies of single people who are 25 years old or older; » 4 three bedroom houses for families requiring long term tenancies; » 2 two bedroom houses for families requiring long term tenancies (owned by the Queensland Department of Housing). <p>Due to increased need outside the Centrelink target groups, ELAM also provide crisis accommodation for individuals and families who don't fit this criteria and have genuine need.</p> <p>ELAM has recently provided accommodation to apprentices and trainees. This accommodation was initiated and developed by ELAM Inc due to demand created by the increasing financial difficulty for most trainees and apprentices, particularly those not employed within the mining industries to afford even the rental costs for a single room in the private rental market in Moranbah.</p> <p>ELAM is hoping to provide another similar project given the increasing demand for such accommodation.</p>

According to Moranbah Stakeholders, the only people who can afford to live in Moranbah who do not have part of their household income associated with the mines, are those people who purchased their houses prior to the housing boom in the early 2000s. Reportedly there are fewer and fewer of these people/families in town because

¹² ELAM manages the 'affordable' housing in Moranbah.

¹³ These properties are owned by the Department of Housing, except one and are provided under either the Crisis Accommodation Program or Community Housing Program

of high increase in the housing prices; people/families are selling their home for the high prices and moving to the coast where they can get a 'nicer' house in a 'nicer' location for the same money.

6.6 Existing Land Use

The AN site is located approximately 4.5 kilometres northwest of the township of Moranbah. The site and surrounding land is currently used predominantly for grazing purposes. Land uses immediately adjacent to the site are described in Table 15.

Table 15 Adjacent Land Uses

Direction	Land Use
North	<ul style="list-style-type: none"> » Goonyella Road runs along the northern boundary of the site. » Land on the north side of Goonyella Road is grazing land and used for gas extraction. » Moranbah North coal mine is approximately 30 kilometres north of the site. » The Isaac River is northeast of the site.
East	<ul style="list-style-type: none"> » An Enertrade Compression Station is adjacent to the site. » Wotonga Blair Athol Mine Railway is located approximately 3 kilometres east of the site. » There is an Ergon Power Station, including a workers camp, immediately east of the Railway. » Land east of the site is also used for gas extraction. » The township of Moranbah lies east of the site.
South	<ul style="list-style-type: none"> » Land to the south is grazing land. » Grosvenor Creek is approximately 2 kilometres south of the site. » Copperbella coal mine is approximately 30 kilometres southeast of the site.
West	<ul style="list-style-type: none"> » Land to the west is grazing land.

The nearest industrial development is an Enertrade Compression Station, which is immediately adjacent to the eastern boundary of the site. An Ergon Power Station is approximately 3 kilometres east from the site. A workers camp is also located at the Power Station and is the nearest residential development to the site. Enertrade is currently using land north and east of the site for gas extraction. Consequently, an extensive network of subterranean gas piping exists, including pods and surface holding ponds. Moranbah North coal mine is approximately 30 kilometres north of the site and Copperbella coal mine is approximately the same distance southeast of the site.

6.7 Summary

Construction on the town of Moranbah began in the late 1960s with plans to provide housing for 400 employees of the Goonyella mine. Moranbah was home to some 6,673 people in 2003, and today there are an estimated 10,651 people living in this area, the



28th largest town in Queensland (in population) that is still predominantly reliant on the mining industry with some services provided to the agriculture industry in the region.

If the mining industry became economically unviable the town would begin to decline in population and service providers (similar to what happened in the late 1990s). The lack of variety in purpose is a concern for the town's sustainability. The proposal for an alternative (but related industry) will assist in the sustainability of the town.

7. Social Impact Identification

7.1 Introduction

Social impacts were identified by examining the existing environment, and then by theoretically adding the project e.g. consulting with Moranbah stakeholders, see Figure 20.

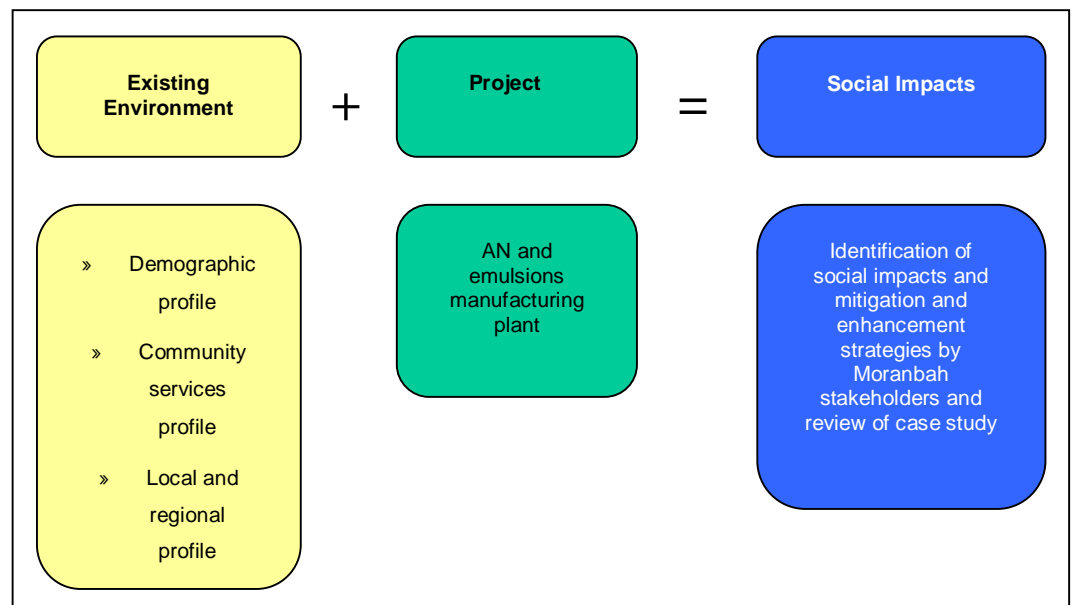


Figure 20: Identification of Social Impacts

7.2 Summary of Impacts

Based on our analysis of the existing environment data and consultations with the Moranbah Community, the following impacts were identified. The operation impacts also include those that are anticipated during construction. Therefore the operational impacts noted are in addition to those impacts, which are anticipated. It is acknowledged that the severity or the value of each impact will differ during the construction and operation phases of the project.

Based on discussions with the landholders (the Camm family), Picardy Station will be impacted during construction and operation of the AN Plant. These impacts are summarised in the following table (Table 16). Picardy Station is located approximately 5 km from the proposed site along Goonyella Road in the direction of the Goonyella mine. Refer to section 8 for discussion of significance of impacts during these phases.

Table 16 Summary of Impacts

Construction Impacts	Operation Impacts
Impact on Picardy Station: <ul style="list-style-type: none"> » Maintaining access to grazing rights on the property; » Ensuring availability of water for cattle; and » Potential contamination of the water stored in the property's dam. 	Impact on Picardy Station: <ul style="list-style-type: none"> » Maintaining access to grazing rights on the property; » Ensuring availability of water for cattle; and » Potential contamination of the water stored in the property's dam.
Population of Moranbah including: <ul style="list-style-type: none"> » Increase in the population of Moranbah during construction and operation of the project because of the limited potential to employ local people. 	Increased terrorism target including: <ul style="list-style-type: none"> » Safety and security requirements Increased training and resources for emergency services
Social/Cultural/Economic profile of Moranbah influenced as a result of the increasing and changing nature of the population of Moranbah.	Air emissions including: <ul style="list-style-type: none"> » Impact of the emissions from operation; and » impact on the health of people living in Moranbah
Impact on the local residents of Moranbah and their lifestyles and the subsequent changes in community values	Social/Cultural/Economic profile of Moranbah influenced as a result of the increasing and changing nature of the population of Moranbah.
Current land uses	Impact on the local residents of Moranbah and their lifestyles and the subsequent changes in community values
Housing	Current land uses
Local businesses and enterprises	Housing
Potential for reduction in community services and community cohesion	Local businesses and enterprises
Household income and jobs likely to flow to Moranbah and surrounding communities	Potential for reduction in community services and community cohesion
Demand for places in schools and tertiary education – capacity of the local schools to accept more enrolments	Household income and jobs likely to flow to Moranbah and surrounding communities
Restrictions by the cost of living and training and the subsequent ability of people to participate in the regional and local employment assistance and training opportunities	Demand for places in schools and tertiary education – capacity of the local schools to accept more enrolments

Construction Impacts	Operation Impacts
Increased number and type of vehicles on the Goonyella Road, Moranbah Access Road and the Peak Downs Highway influencing travel times for shift workers	Restrictions by the cost of living and training and the subsequent ability of people to participate in the regional and local employment assistance and training opportunities
Access to the water supplying Moranbah. Moranbah is already on water restrictions and the potential to increase water restrictions further if more people are using the resource.	Increased number and type of vehicles on the Goonyella Road, Moranbah Access Road and the Peak Downs Highway influencing travel times for shift workers
Emergency services including pressure of available resources	Access to the water supplying Moranbah. Moranbah is already on water restrictions and the potential to increase water restrictions further if more people are using the resource.
<p>Construction camp impacts including:</p> <ul style="list-style-type: none"> » Water supply (Moranbah is currently on water restrictions) » Location of the camp either near the proposed site or in existing accommodation camps in the vicinity of Moranbah » Impact on the community cohesion and participation of workers in the Moranbah community » Travel of workers to and from the work site, and to and from home base » Potential flow-on businesses based in Moranbah 	Emergency services including pressure of available resources
<p>Local employment during construction including:</p> <ul style="list-style-type: none"> » The potential to employ local people during construction and contract local service providers » People changing jobs to work on the construction of the proposed plant 	Local employment during operation including people changing jobs to work on the construction of the proposed plant

The indirect, regional and cumulative impacts are all dependent on whether the number of people employed i.e. the number of permanent employees who relocate to Moranbah, bring their families and the working conditions of the permanent employees. Table 17 presents population estimates to be used as a basis for impact analysis in the following sections.

Table 17 Impact on Population and Estimates During Operation

Local	Regional	Cumulative
Estimated population increase of 200 people. Based on a current estimated population of 10,000 ¹⁴ = 10,200 people living in Moranbah.	Estimated population increase of 550 (i.e. 100 of the construction workers relocate their families of 3.5 people) Based on a current estimated population of 10,000 ¹⁵ = 10,550 people living in Moranbah.	Estimated population increase of 700 (i.e. including workers, potential families and associated workforce and flow on economic development during construction and potential families). Based on a current estimate population of 10,000 ¹⁶ = 10,700 people living in Moranbah.

The following sections present a detailed analysis of the impacts identified in Table 16. These impacts relate to both the construction and operational phases of the proposed project, except for sections 7.2.20 and 7.2.21, which deal specifically with impacts identified for the operation phase.

7.2.1 Impact on Picardy Station

No residences are located on the property, which is uninhabited. The Camm family employ five families as part of their farming business. Concerns highlighted include:

- » Maintaining access to grazing rights on the property;
- » Ensuring availability of water for cattle; and
- » Potential contamination of the water stored in the property's dam.

7.2.2 Impact on the population of Moranbah

According to estimates, the population of Moranbah could increase from 200-700 people during the construction phase of the AN plant. There will be flow-on impacts from this increase in population, which are discussed in the following sub-sections.

7.2.3 Impact on the social/cultural profile of Moranbah

There is potential for increases in the population and changes to the demographic make up of Moranbah e.g. increases in the number of males in the 15-54 age cohorts, increases in the number of females in the 15-54 age cohorts and increases of males and females in the 0-14 age cohorts are likely.

Estimated increases in the age cohorts are set out in Table 18. The current population is based on the 2001 Census data, as no recent statistics were available on this type of information at the time of this report. The estimated increases are indicative only and

¹⁴ Including the people living in accommodation camps.

¹⁵ Including the people living in accommodation camps.

¹⁶ Including the people living in accommodation camps.

relate to proposed proportion increases in population age cohorts as set out in the previous section and utilising the assumptions presented in Table 17.

Table 18 Estimated Increases in Age Cohorts

Age Cohort	Male		Female	
	Current ¹⁷	Estimate Increase	Current ¹⁸	Estimate Increase
0-4	315	325	274	296
5-14	622	675	581	626
15-24	484	525	362	391
25-34	654	712	548	593
35-44	695	756	494	535
45-54	640	695	413	446
55-64	252	272	113	122
65-74	42	45	24	24
75+	38	41	21	21

This increase across the age cohorts will have a direct impact on the goods and services accessed in Moranbah and the region, for example, education, recreational activities, businesses and community service organisations, these impacts will be discussed in the following sections.

7.2.4 Impact on the economic profile of Moranbah

Based on the assumption that DN will have salaries comparable to the coal mines, there will be an increase in household income. If the construction workforce is based in Moranbah then the result of this increase in income will reflect on Moranbah. If construction is based on a fly-in/fly-out or drive-in/dive-out workforce then the increase in income will be reflected where the construction workforce lives. This could be either in Mackay or distributed up and down the Queensland coastline, from South East Queensland to Cairns.

Based on whether the construction workforce is permanently located in Moranbah or whether the construction material is sourced from Moranbah will affect the potential to increase or decrease the level and type of businesses in Moranbah.

7.2.5 Impact on community values

This impact will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families and the

¹⁷ Based on the 2001 Census

¹⁸ Based on the 2001 Census

working conditions of the permanent employees. These two scenarios are discussed below.

Majority of Fly-in/Fly-out and/or Drive in/Drive out Workforce based in construction camp

If the majority of permanent employees for the construction stage of the proposed project are fly-in/fly-out or drive in/drive out, there will be a change in the community values of Moranbah. Fly-in/fly-out and/or drive in-drive out workers are predominantly male in the 15-54 year age cohort (although the number of women doing the shift work is also reportedly increasing) and do not bring their families because there is only single accommodation available.

While in the accommodation camps, the workers do not have the opportunity to participate in the local community because of the 12 hour shifts, so the workers go to work and then sleep and the majority of workers eat in the camps. Generally at the end of their shift they return to their homes.

To date this has had a negative impact on the community service and sporting organisations in Moranbah, a decrease in the 'community feel' of Moranbah due to the lack of age diversity.

The community values change from a family focus to a work focus, based on who is participating in the community. The Moranbah Stakeholders consulted as part of this report do not want a "dormitory town", they would rather the town be supported by the growth of a family focus and the community values associated with it.

Majority of Workforce Based in Moranbah

If the majority of permanent employees for the construction stage of the proposed project are based in Moranbah with their families¹⁹ there will be the opportunity to develop the family focus and associated community values. This includes participation in:

- » Community service and sporting organisations;
- » Local economy by spending money locally (rather than Mackay or other locations along the coast); and
- » Children attending the local preschool, primary schools and high school.

7.2.6 Impact on the local residents of Moranbah and current lifestyles

Similar to the impact on community values, the impact on the local residents of Moranbah and their current lifestyles will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families, and the working conditions of the permanent employees.

During consultations with Moranbah Stakeholders, the biggest social impacts will be on:

¹⁹ With recognition that there is limited or no available land, housing and the town is currently under water restrictions.

- » Available land and housing (where will the new employees live?);
- » The provision of water to the proposed plant and to the proposed new houses if new employees will be living in Moranbah; and
- » Impact on the sporting and community service organisations (with the opportunity to participate in the organisations).

7.2.7 Impact on current land uses

The current land use of the proposed site will change from a pastoral lease running cattle to a major AN production facility – a significant change. There is also the potential for the current land uses in Moranbah to change with the development, to provide goods and services for the project. This will also require the development of other land uses near the plant (eg: for the construction camp).

7.2.8 Impact on housing

The impact on housing in Moranbah will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families, and the working conditions of the permanent employees.

The Dyno Nobel Initial Advice Statement (IAS) states that the construction workforce may be accommodated in a construction camp near the plant or within existing construction camp facilities in the vicinity of Moranbah²⁰. At the time of writing, it is anticipated that the construction workforce will be accommodated in a construction camp adjacent to the AN plant

Majority of Fly-in/Fly-out and/or Drive in/Drive out Workforce based in construction camp

If the construction workforce is accommodated in a construction camp near the plant, there will be a social impact of no or limited participation in the Moranbah community, which will have a flow-on impact to:

- » Local businesses and enterprises; and
- » Community service and sporting organisations.

Water source is under investigation and will be similar to the source for other major users in the area. Water will be accessed via private pipeline and both plant and potable water will be provided for this facility, including construction and operation, its workforce and their families. The town is currently on water restrictions.

If the construction workforce is accommodated in existing construction camp facilities, the current facilities will require expansion given they are already at capacity servicing the coal mines and other associated industry, which may concern regarding lack of available land for the expansion.

²⁰ Dyno Nobel (March 2006) Initial Advice Statement for Moranbah AN Project, p.15

Majority of Workforce Based in Moranbah

At the time of writing this report, the workforce would not be able to be based in Moranbah in permanent housing with their families because of:

- » Lack of available housing;
- » High price of entering the rental and purchasing market for housing;
- » Lack of land for new housing; and
- » Current water restrictions for existing Moranbah residents.

7.2.9 Impact on local businesses and enterprises

Impact will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families and the working conditions of the permanent employees. Impact will also depend on whether materials and goods are sourced from businesses based in Moranbah.

There is the opportunity to facilitate a positive impact on the local businesses and identify new enterprises (e.g. child care centre) to assist in the active participation in the direct, indirect and cumulative impacts of the proposed project.

However, it should be appreciated that many of the local businesses are restricted by the difficulty to attract staff (because of the land and housing shortage and high rental and purchase price of housing) and to retain staff. According to the Moranbah Stakeholders, those businesses that employ local people do not retain them for long because of the attraction to the coal mines and access to higher wages. An example of this was provided by the owner/manager of the Mitre 10 in Moranbah, who said that all his staff are females who have a husband or partner who work in the coal mines or associated industries.

If there were available land and housing at an affordable rate, local businesses would be able to further provide goods and services in town and to customers in the regional area by being able to employ more staff.

7.2.10 Impact on the demand for health care service providers (public and private) in the region

Impact will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families and the working conditions of the permanent employees. These scenarios are discussed below.

Majority of Fly-in/Fly-out and/or Drive in/Drive out Workforce based in construction camp

Based on consultations with the two doctors in Moranbah, the impact of the proposed construction workforce of an average of 150-200 (with a peak of 400) will be limited. This is based on the demographics of the construction workforce, i.e. healthy people in the 15-54 year old age cohort, which would only be receiving medical services for work place injuries, acute sickness and required work place medical checks (including mine associated medicals).

The hospital is equipped for emergencies and, where required, the Royal Flying Doctor Service or CQ Helicopter can be accessed.

Majority of Workforce Based in Moranbah

However, if there is a significant number of families relocating to Moranbah and bringing their families, there may be the need to attract another doctor because of the change in medical services required. Both doctors explained that the medical service provision needed to be viewed in a regional context; there is a shortage of doctors in the region²¹ so Moranbah will be in competition not only for other regional towns but also major coastal centres for doctors.

7.2.11 Impact on community services and community cohesion

Impact will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, if they bring their families and the working conditions of the permanent employees. These scenarios are discussed below.

Majority of Fly-in/Fly-out and/or Drive in/Drive out Workforce based in construction camp

By accommodating the workforce in an existing or new purpose built construction camp:

- » Community services will be relied upon but limited or no contribution to their maintenance will occur; and
- » The community cohesion will change to focus on the construction camp rather than families, as the number of people in the construction camps increase in proportion to the number of people permanently based in Moranbah.

The beginnings of a social divide between those people in the construction camps and those that live permanently in Moranbah is occurring, and another construction camp will increase this divide.

People staying in construction camps usually have limited ownership of the community they are staying in (with ownership being with their home base), and this can be reflected in the way people act and attitudes towards those people living in the community. This can also be linked to participation in the community, with no or limited numbers of people participating in local organisations who are living in the construction camps. Those that are participating are people that have lived in Moranbah and relocated to the coastal area, while retaining work in the region and being able to continue their participation in the community (although on a limited basis).

Majority of Workforce Based in Moranbah

If the majority of the workforce is based in Moranbah it will assist in the provision and maintenance of community services. The community cohesion will be based on the individuals moving to Moranbah. Consultations to date show no negative response to the proposed project, with the majority of people viewing the proposed project as a

²¹ A medical centre in Mackay is planned to close because they can not replace the relocating doctors.



positive for the town and the region, if the land, housing and water issues are dealt with appropriately.

7.2.12 Impact on household income and jobs likely to flow to Moranbah and surrounding communities

Impact will depend on the number of local people employed, the number of permanent employees who relocate to Moranbah, and their family situation. These scenarios are discussed below.

Majority of Fly-in/Fly-out and/or Drive in/Drive out Workforce based in construction camp

The impact on the household income will be focused on the household income of where the workers are based, e.g. Mackay or other towns on the coast. There is the potential for local economic growth in Moranbah if employees and services are sourced locally. Maintaining staff is an existing issue. According to the Moranbah stakeholders (see appendix C), those businesses that employ local people do not retain them for long because of the attraction to the coal mines and access to higher wages. An example of this was provided by the owner/manager of the Mitre 10 in Moranbah, who said that all his staff are females who have a husband or partner who work in the coal mines or associated industries.

If there were available land and housing at an affordable rate, local businesses would be able to further provide goods and services in town and to customers in the regional area by being able to employ more staff.

Majority of Workforce Based in Moranbah

If the majority of the workforce were based in Moranbah, the impact on household income (if Dyno Nobel was to have similar wages to the coal mines) would remain consistent with current levels (a weekly average household income of \$1,500 to \$1,999 per week).

An indirect impact of this increase in the number of households having a high income may affect those households that do not have access to these incomes. It may also contribute to the increasing pressure on house and rental prices, making housing even less accessible to those on lower incomes.

7.2.13 Impact on the demand for places in schools and tertiary education

Consultations with the principals of the Moranbah State School and Moranbah State High School revealed that both schools have the capacity to take more enrolments. There will need to be a significant number of enrolments to trigger the employment of more teachers based on the current enrolments. If new teachers are employed then the Department of Education will be responsible for providing accommodation for them and their families (if appropriate).

CQ TAFE has a campus associated with the Moranbah State High School and offers limited training.



Access to tertiary education is through on-line courses and long distance education programs, with the closest university campuses in Mackay.

7.2.14 Impact on the ability of people to participate in the regional and local employment assistance and training opportunities

The impact on the ability of people to participate, in the regional and local employment assistance and training opportunities, will be restricted by the cost of living and cost of training.

There are a limited number of people living in Moranbah who receive employment assistance. According to NEATO (local employment assistance service), people seeking employment assistance usually relocate with someone who already has employment (and accommodation is provided as part of the employment package). This is because of the shortage of available and affordable housing in Moranbah.

Those people, who do relocate to Moranbah to find work, usually find work through the employment agencies, either Skilled Engineering or TESA (for mining related employment) or NEATO for other employment.

Training opportunities in Moranbah are focused on providing the training required in the coal mining industry. There are other limited training opportunities provided by TAFE or traineeships through existing businesses.

7.2.15 Impact on the number and type of vehicles on the Goonyella Road, Moranbah Access Road and the Peak Downs Highway

Moranbah stakeholders (see appendix C) believe that the number and type of vehicles on the access roads to and from the site (through Moranbah) will have an impact. These impacts include the potential safety risks associated with increased number of workers on the roads before and after shifts and the school bus.

The majority of workers travelling to or from shift are focused between 5 and 8 in the morning and at night. Anecdotal evidence suggests that there is more traffic on the roads on Fridays (average of 3,000 vehicles) compared to other days in the week (average of 2,000 vehicles).

The school buses operate to transport children from outside Moranbah (from Copperbella and the pastoral stations) to school and operates between 7.30 am and 8.30 am and at 3.00 pm to 4.00 pm Monday to Friday.

7.2.16 Construction camp impacts

The main social impacts from the construction camp are:

- » Water supply (Moranbah is currently on water restrictions);
- » Location of the camp either near the proposed site or in existing accommodation camps in the vicinity of Moranbah;
- » Impact of the community cohesion and participation of workers in the Moranbah community;

- » Travel of workers to and from the work site, and to and from home base; and
- » Potential flow-on businesses based in Moranbah.

7.2.17 Impact on the access to the water supplying Moranbah

It is not clear in the Initial Advice Statement where the source of the water for construction will come from. Moranbah is already on water restrictions and the potential exists to increase water restrictions further if more people are using the water source.

7.2.18 Impact on emergency services

According to consultations with the Moranbah stakeholders (see appendix C) there will be limited impact on the provision of emergency services during the construction of the proposed AN plant.

7.2.19 Impact on Local employment during construction

According to Moranbah stakeholders (see appendix C), there is the potential (although limited) to employ local people during construction and contract local service providers. There are limited opportunities to employ men unless they transfer from coal mine related employment. According to NEATO, the greatest opportunity for local employment is the employment of women on a part time or job sharing basis, given the is adequate child care to be sourced.

There is also the consideration of sourcing people already employed in the local area, if the conditions and wage are better or comparable to the wages paid associated with the coal mines. There is the risk that people employed in Moranbah in unrelated coal mining employment may leave their current employment to work on the construction of the proposed plant.

Given the limited opportunities to employ local people, there will be an increase in the population of Moranbah during construction and the impacts associated with this have been discussed in this section.

7.2.20 Impact of Terrorism

Moranbah stakeholders (see appendix C) identified the increased risk of terrorism by:

- » The proposed plant itself as a terrorism target; and
- » The use of the AN sourced from the proposed plant in terrorism activities.

The impact of the possibility of the above occurring will impact on:

- » Safety and security requirements in the services utilised by people living in Moranbah (e.g. the airport); and
- » The requirement for increased training and resources for emergency services.



7.2.21 Air Emissions

There was a concern of Moranbah stakeholders (see appendix C) regarding the perceived impact of the emissions from operation and impact on the health of people living in Moranbah. The report was completed and is included in Appendix 7.5.10 Air Quality Assessment. The air emissions are within those set under the Queensland Environmental Protection (Air) Policy of 1997 and measured against the 1997 National Environmental Protection Measure (Ambient Air Quality).

8. Significance of Social Impacts

8.1 Introduction

This section prioritises the social impacts in order of significance. The methodology of prioritising the social impacts is described in Appendix D. The social impacts (both positive and negative) with the higher ratings are the focus of enhancement and mitigation strategies respectively.

8.2 Identified Impacts

Table 19 presents a summary of the significance of social impacts during the construction and operation stage based on the methodology adapted by GHD.

Table 19 Significance of Impacts

Impact	Highly Significant	Moderately Significant	Slightly Significant	Not Significant
Impact on Picardy Station		ü		
Impact on the population of Moranbah		ü	ü	
Impact on the social/cultural profile of Moranbah		ü		
Impact on the economic profile of Moranbah		ü		
Impact on community values		ü		
Impact on the local residents of Moranbah and current lifestyles		ü		
Impact on current land uses		ü(O)	ü(C)	
Impact on housing	ü			
Impact on local businesses and enterprises			ü	
Impact on the demand for health care service providers (public and private) in the region			ü	
Impact on community services and community cohesion		ü		
Impact on household income and jobs likely to flow to Moranbah and surrounding communities			ü	
Impact on the demand for places in schools and tertiary				ü



Impact	Highly Significant	Moderately Significant	Slightly Significant	Not Significant
education				
Impact on the ability of people to participate in the regional and local employment assistance and training opportunities			ü	
Impact on the number and type of vehicles on the Goonyella Road, Moranbah Access Road and the Peak Downs Highway	ü			
Construction camp impacts	ü (C only)			
Impact on the access to the water supplying Moranbah	ü			
Impact on emergency services		ü		
Increased terrorism target	ü(O only)			
Air Emissions	Refer to EIS			
C = construction impact				
O = operation impact				
All other impacts apply to both the construction and operation of the plant except where indicated.				

9. Mitigation and Enhancement of Social Impacts

9.1 Introduction

Social impacts are both positive and negative, this section sets out ways to mitigate the negative impacts and enhance the positive impacts.

9.2 Mitigation and Enhancement Strategies

This section details the construction impacts and potential strategies to either mitigate the negative impact or enhance the positive impact. Table 20 presents this information for the construction phase of the project.

Table 20 Mitigation and Enhancement of Social Impacts During Construction

Social Impact	Mitigation	Enhancement
<i>Impact on Picardy Station</i>	<p>Negotiation of grazing rights for the property (including access to cattle)</p> <p>Negotiation of access to water of quality and quantity required for grazing cattle economically on the station.</p> <p>To follow the construction and operation EMP for ground and rainwater maintenance.</p>	<p>Negotiate a Good Neighbour Policy with the landowners to address:</p> <ul style="list-style-type: none"> » Access for grazing; » Access to water; » Maintenance of Dyno Nobel infrastructure on Picardy Station (e.g. roads); » Maintenance of boundary infrastructure between Dyno Nobel and Picardy Station (e.g. fences).
<i>Impact on the population of Moranbah</i>	<p>Inform the relevant service providers of the population change and the detail (number and make up) of the proposed construction workforce to allow them to plan for adequate service provision.</p>	<p>Inform the general Moranbah community of proposed project impacts through a community consultation program for the construction project (including informing the community when and for how long the construction workforce will be present)</p>
<i>Impact on the social/cultural profile of Moranbah</i>	<p>Include the construction workforce in community service and sporting organisations.</p>	<p>Actively promote the participation of Dyno Nobel workers in community service and sporting organisations.</p>



Social Impact	Mitigation	Enhancement
<i>Impact on the economic profile of Moranbah</i>	Source where possible goods and services from Moranbah to ensure a positive economic impact from the construction phase of the project.	Dyno Nobel to actively support existing businesses in Moranbah.
<i>Impact on community values</i>	Provide the permanent housing for workers to live in Moranbah and participate in the community.	Dyno Nobel to work with the Moranbah community to ensure that existing community values are taken into consideration when planning for the project.
<i>Impact on the local residents of Moranbah and current lifestyles</i>	Provide permanent housing for workers to live in Moranbah and participate in the community.	Provide permanent housing for the construction workforce to allow them to more easily participate in the Moranbah community. Have shifts that are conducive to allowing employees to participate in the community. The 12 hour 4x4 day shifts are not as conducive.
<i>Impact on current land uses</i>	Ensure the community values attached to the land needed to undertake the project are taken into consideration.	



Social Impact	Mitigation	Enhancement
<i>Impact on housing</i>	<p>Ensure that adequate housing and associated infrastructure are provided within the existing constraints of the Belyando Shire Council, the State and community aspirations.</p> <p>Dyno Nobel is currently in negotiations with a land developer who is in the process of constructing a housing estate at Moranbah. Dyno Nobel has reached agreement for the development for dwellings of various dwelling types.</p> <p>Dyno Nobel is also in discussions to ensure they can secure additional permanent housing for employees in Moranbah as land becomes available.</p>	Any permanent housing associated with the construction phase should be environmentally and aesthetically appropriate.
<i>Impact on local businesses and enterprises</i>	Source where possible goods and services from Moranbah to ensure a positive economic impact from the construction phase of the project.	Dyno Nobel to actively support existing businesses in Moranbah.
<i>Impact on the demand for health care service providers (public and private) in the region</i>	Ensure that the medical service providers are aware of the potential impact on the services they provide.	Work with medical service providers to ensure that medical services required can be sourced from Moranbah.
<i>Impact on community services and community cohesion</i>	Ensure that the construction workforce are included as much as possible into the community, through purchasing items from local retailers to participating in community service and sport organisations.	Dyno Nobel to actively support the participation of the construction workforce when utilising community services and actively participating in the community.

Social Impact	Mitigation	Enhancement
<i>Impact on household income and jobs likely to flow to Moranbah and surrounding communities</i>	Ensure that wages and conditions are similar or an improvement on the coal mining experience when people live permanently in Moranbah.	Encouraging construction workers (and their families) to live in Moranbah will assist the average household income to increase in Moranbah, in turn having a positive economic impact for businesses in Moranbah.
<i>Impact on the demand for places in schools and tertiary education</i>	Ensure that the educational service providers are aware of the potential impact on the services they provide.	Work with the Moranbah High School to promote apprenticeships and traineeships with Dyno Nobel for local school leavers.
<i>Impact on the ability of people to participate in the regional and local employment assistance and training opportunities</i>	Support the employment and training of local people who want to work in the proposed plant.	Work with the Moranbah High School to promote apprenticeships and traineeships with Dyno Nobel for local school leavers.
<i>Impact on the number and type of vehicles on the Goonyella Road, Moranbah Access Road and the Peak Downs Highway</i>	Ensure there is minimal road traffic during the hours of 5am-9am and 5pm-9pm due to high volumes of traffic for shift change over and school bus operating times.	Ensure that there is no road access to transport vehicles between the hours of 5am-9am and 5pm-9pm due to high volumes of traffic for shift change over and school bus operating times.
<i>Construction camp impacts</i>	<p>Follow all required development application procedures required by Belyando Shire Council and the Queensland Government.</p> <p>Remain aware of the impacts of another construction camp on the community values and aspirations of the Moranbah community.</p>	
<i>Impact on the access to the water supplying Moranbah</i>	Ensure the construction camp and the construction camp do not negatively impact on the water supply (already under restricted use) for the town of Moranbah.	Source water for housing and other sources in Moranbah and the region.

Social Impact	Mitigation	Enhancement
<i>Impact on emergency services</i>	Ensure that the emergency service providers are aware of the potential impact on the services they provide.	During operation, actively work with emergency service providers to ensure a quick and appropriate response when required.
<i>Local employment during construction and operation</i>	Promote local employment to people looking for work in Moranbah Advertise available positions locally	Create positions that are suitable for those people living in Moranbah looking for work, e.g. women who would prefer part time or employment on a job-share basis. Advertise through NEATO's Moranbah office for non-skilled workers and for skilled positions advertise through Skilled Engineering or TESA (both have offices in Moranbah).
<i>Increased terrorism target (operational phase only)</i>	Meet all legislative requirements for operation	
<i>Air emissions (operational phase only)</i>	Meet all legislative requirements for the air emissions and the requirements of the EMP	Provide the Moranbah community with air emissions testing results.

9.3 Summary

This section has presented suggested mitigation and enhancement strategies for the social impacts identified in this SIA. Mitigation strategies involve maintaining communication between Dyno Nobel and the community on activities of the plant and that in recruiting people for jobs in both the construction and operation of the plant, local opportunities are investigated first. Maintaining and enhancing community values in Moranbah will be paramount to ensuring that the Moranbah community grows in a sustainable manner.

10. Monitoring of Social Impacts

10.1 Introduction

Identifying impacts is only one component of a SIA. Monitoring the impacts and ensuring that the situation is controlled is just as important. This section details the methods proposed to monitor the identified impacts and to ensure that the anticipated impacts do not increase in severity.

10.1.1 Social Indicators

Social indicators are a useful tool used to measure the current state of a population or adequacy of provision of services. In this case, social indicators will be used to aid in identifying the potential social impact of the project and provide an assessment of the state of social environment within the surrounding communities. Particular reference will be made to the following indicators, statistical indices such as SEIFA and ARIA indices, unemployment rate, and gender composition and housing availability (both rental and for purchase).

The state of each indicator will be noted as well as the implications and potential impacts identified in section 3.3 and 4 onwards.

10.2 Construction

Table 21 presents a composite of the identified social impacts during the construction phases, the indicators to be utilised and the associated monitoring strategies.

Table 21 Monitoring of Social Impacts During Construction

Social Impact	Social Indicator	Monitoring Strategy
Population and demographic impacts	Gender composition Family composition Unemployment rate Education Weekly household income Employment	Review of 2006 Census data when released.
Housing	Average housing price Available land Rental prices	REIQ ("Queensland Property and Lifestyle" magazine)
Water	Amount of water used by the community	As part of Belyando Shire Council.
Construction Camp (should be combined with other social impacts and indicators)	Change in retail turnover	Meetings with Moranbah Retail Association



Social Impact	Social Indicator	Monitoring Strategy
* During construction phase only	Crime	Bi-annual meetings with the police
Economic impacts	Change in retail and commercial turnover	Meetings with Moranbah Retail Association
Transience	Turn over of students at the Moranbah State School and Moranbah State High School	Quarterly meetings with the relevant Principals
Community values	Number of people participating in local organisations in executive roles and assisting in infrastructure maintenance.	Biannual meetings with organisations
Safety of students catching the school bus	Reports from the bus driver on safety of the school students. Records of incidents of traffic accidents involving school children or near the schools	During construction phase, vehicles should avoid where possible operating during hours that the school bus is operating.
Safety of shift workers when driving to and from work/shift	Number and type of car accidents	Bi-annual meetings with the Moranbah Police

10.3 Summary

This section detailed the social indicators to be included in the monitoring of the social impacts identified. Each identified impact has an indicator used to monitor the state of the impact over a nominated period of time. This process ensures that over the period of operation of the project that impacts are monitored. The success of the mitigation and enhancement strategies identified in this SIA can also be verified through the use of social indicators and monitoring.

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Appendix A

SIA Terms of Reference Checklist



Introduction

GHD has taken into consideration the Coordinator-General terms of reference (TOR) when designing and implementing the methodology for the SIA. As a conclusion to this SIA report, a comparison between the Coordinator-General (TOR) and the findings of the SIA has been made in Table 22.

Terms of Reference Checklist

Table 22 sets out a summary of the Coordinator-General TOR and the summary of the findings from the SIA.

Table 22 Terms of Reference Checklist

TOR	Response from SIA
Existing Conditions	
The amenity and use of the Project area and adjacent areas for rural, agricultural, forestry, recreational, industrial, educational or residential purposes.	Demographic and community services profile, consultation with the Moranbah community and assessment of likely impacts of the development including increased pressures from population growth. Refer to sections 4, 5 and 6
A description of the social values for the affected area.	Demographic profile of the immediate study area including consultation with the Moranbah community. Refer to sections 4, 5 and 6
Information of the existing housing market.	Investigation of the impacts on the existing housing market given the increases in population and availability of current housing stock. Refer to sections 4, 5 and 6
Potential Impacts and Mitigation Measures	
Impacts on demographic, social, cultural and economic profiles	Refer to section 7 and 8.
Impacts on local residents, current land uses and existing lifestyles and enterprises.	Refer to section 7 and 8.
Impacts on the potential demand for health care services and providers (public and private) in the region.	Refer to section 7 and 8.
Impact on community services and community cohesion resulting from the construction and operational workforces.	Refer to sections 7 and 8.
Impact on household income and jobs likely to flow to existing communities in	Refer to sections 7 and 8.



TOR	Response from SIA
Moranbah and the surrounding region.	
Impact on the demand for places in local primary, secondary schools and regional tertiary education facilities.	Refer to sections 7 and 8.
Impact on the ability of people to participate in regional and local employment assistance and training opportunities.	Refer to sections 7 and 8.
Impact on the local and regional housing markets.	Refer to sections 7 and 8.
Any potential impact on the amenity of nearby areas used for grazing, recreation, industry or residential purposes.	Refer to sections 7 and 8.
The impact of the project for future developments in the local area including constraints on surrounding land uses.	Refer to sections 7 and 8.
For identified impacts on social values, proposed mitigation and enhancement strategies should be described, and approaches to facilitate community acceptance of these strategies identified.	Refer to sections 9 and 10
Practical monitoring regimes should also be discussed.	Refer to section 10.



Appendix B

SIA Terms of Reference

Existing Conditions (section 4.9.1 of the TOR)

This section should describe the existing social values that may be affected by the Project.

The amenity and use of the Project area and adjacent areas for rural, agricultural, forestry, recreational, industrial, educational or residential purposes should be described through consideration of:

- » *community infrastructure and services, access and mobility;*
- » *population and demographics of the affected Indigenous and non-Indigenous community (including size, age structure, gender composition, education level, residency, labour force and unemployment rates);²²*
- » *local community values, vitality and lifestyles;*
- » *recreational, cultural, leisure and sporting facilities and activities in relation to the affected area;*
- » *health, emergency services and educational facilities;*
- » *on-farm activities near the proposed activities;*
- » *current property values;*
- » *number of properties directly affected by the Project; and*
- » *number of families directly affected by the Project, including families of workers either living on the property or workers where the property is their primary employment.*

The social values for the affected area should be described in terms of:

- » *the integrity of social conditions, including amenity and 'liveability', sense of community, access to recreation, and access to social and community services and infrastructure;*
- » *traditional owner use of the Project area;²³ and*
- » *public health and safety (refer to Section 4.12).*

Information should also be provided on the existing housing market, with an emphasis on:

- » *the size of the private rental market in the area;*
- » *the vacancy rate of rental accommodation, including assessment of seasonal fluctuations;*
- » *typical rents for the area;*
- » *the availability and typical cost of housing for purchase in the area;*
- » *the level of social housing in the area; and*

²² DATSIP

²³ DATSIP

- » *constraints and opportunities for new housing construction in the area, including the capacity of the local land development and housing construction industries to provide new housing, especially in relation to initiatives currently being managed by the recently convened MGMG.*

10.3.1 Potential Impacts and Mitigation Measures

This section aims to define and describe the objectives for protecting or enhancing social values, and how the achievement of the objectives will be monitored, audited and managed.

A social impact assessment of the Project should consider the information gathered in the community consultation program and the analysis of the existing socio-economic environment, and describe the Project's impact, both beneficial and adverse, on the local community and other stakeholders for both the construction and operation phases.

The nature and extent of the community consultation program are to be described and a summary of the results incorporated in the EIS.

The assessment of impacts should describe the likely response of affected communities and identify possible beneficial and adverse impacts (both immediate and cumulative). These impacts should be considered both at the regional and local level.

The assessment should include consideration of the Project's impacts on:

- » *demographic, social, cultural and economic profiles;*
- » *local residents, current land uses and existing lifestyles and enterprises;*
- » *the potential demand for health care services and providers (public and private) in the region;*
- » *community services and community cohesion resulting from the construction and operational workforces;*
- » *household income and jobs likely to flow to existing communities in Moranbah and the surrounding the region;*
- » *the demand for places in child care, local primary, secondary schools and regional tertiary education facilities;²⁴ and*
- » *the ability of people to participate in regional and local employment assistance and training opportunities.*

An assessment of the predicted impacts of the Proponent's activities (including activities by any sub-contractors) on the local and regional housing markets should also be undertaken. The assessment should refer to the projected accommodation needs for the employees and the likely family members that will be accompanying the workers in both the construction and operational phases, and estimate.²⁵

²⁴ DoC

²⁵ DoC

- » *the capacity of local and regional housing markets to meet the accommodation needs of the Project, including the potential displacement of low-income residents from affordable rental accommodation and diminished availability of accommodation;*
- » *any possible cumulative impacts on the local and regional housing market due to the presence of other existing or proposed major projects in the area (especially existing coal mine expansions and Transfield's proposed Moranbah and Nebo Power Stations Project), and any seasonal employment factors; and*
- » *the impact of the construction phase of the proposal on the local and regional residential development and housing construction industry, with particular reference to the demand for local contractors.*

Any potential impact on the amenity of nearby areas used for grazing, recreation, industry, or residential purposes should be discussed in relation to impacts on social values. The implications of the Project for future developments in the local area including constraints on surrounding land uses should be described.

For identified impacts on social values, proposed mitigation and enhancement strategies should be described, and approaches to facilitate community acceptance of these strategies identified. Practical monitoring regimes should also be discussed.



Appendix C

Moranbah Stakeholders (Consultations)



Stakeholder Consultations (Moranbah Stakeholders)

Date	Organisation	Position	Consultation Type
08-05-06	Belyando Shire Council	Manager Community Services	Interview (in person)
08-05-06	Moranbah State High School	Principal	Interview (in person)
08-05-06	Queensland Police (Moranbah)	Officer in Charge	Interview (in person)
08-05-06	Moranbah Retail Association	President	Interview (in person)
09-05-06	Moranbah Real Estate	Property Consultant	Interview (in person)
09-05-06	Coal Country Caravan Park	Managers and Moranbah Lions Club Members	Interview (in person)
09-05-06	Moranbah State School	Principal	Interview (in person)
09-05-06	NEATO	Administration Support Assistant	Interview (in person)
09-05-06	Dr Johann Shulz	Doctor	Interview (in person)
09-05-06	Moranbah Lions Association	President Member	(meeting with Moranbah Rotary Club)
09-05-06	Moranbah Rotary Club	President	Focus group with members
09-05-06	Dr Graham Rowles	Doctor	Interview (in person)
10-05-06	Emergency and Long Term Accommodation Moranbah (ELAM)		Interview (in person)



Appendix D

Social Impact Significance Matrix Methodology



Introduction

To accurately assess the level of social impacts identified through the SIA process, GHD has utilised a specific methodology for ranking the significance of each impact. The level of significance is based on two elements, the sensitivity of the receptor or impacted feature (for example, residents, public transport or hospital) and the magnitude of the impact (for example, large, moderate, small or negligible). By combining these two elements a level of significance is generated for each impact.

This following methodology provides a detailed description of the process used to develop the level of significance for the social impacts identified in section 8. For each option and the relevant identified impacts, a measure of the impacted feature of receptor was taken along with the level of magnitude resulting in the overall level of significant.

Importance/Sensitivity of Receptor

The sensitivity of the receptor refers to how vital and/or vulnerable a feature is to change or alteration. The higher the vulnerability or importance to socio-economic wellbeing a feature is, the greater its sensitivity. Table A below outlines the sensitivity of socio-economic receptors in the context of the IAS.

Table A. Sensitivity of the Socio-Economic Environment

Receptor Sensitivity	Examples
High	Impacts on hospitals and the essential services they provide Impacts on emergency services and how they provide their services Impacts on vulnerable people and the services they access Impacts on prisons Impacts on schools Impacts on utilities and essential communications Impacts on highways and arterial roads Impacts on attractions of national or regional significance
Medium	Impacts on residents Impacts on child care facilities Impacts on public transport Impacts on attractions of local significance
Low	Impacts on businesses Impacts on public open spaces and waterways Impacts on private vehicles and access



Magnitude of Change

The magnitude of impact (or the degree to which an impact influences the environment) on features of the socio-economic environment can be described as large, moderate, small or negligible using the criteria set out in Table 23

Table 23 Magnitude of Impact on the Socio-Economic Environment

Magnitude	Definitions
Large	Substantial, permanent impacts on the national, state or regional economy, including tourism and recreation. Substantial, permanent social or cultural impacts at national, state or regional level.
Moderate	Moderate temporary or permanent impact on the national, state or regional economy including tourism and recreation. Substantial, permanent impacts on local economy. Substantial, permanent local social or cultural impacts.
Small	Minor temporary or permanent impacts on the national, state or regional economy, including tourism and recreation. Moderate temporary or permanent impacts on the local economy. Moderate temporary or permanent local or cultural impacts.
Negligible	Negligible or undetectable impacts on the national, state or regional economy. Negligible or undetectable social or cultural impacts at the national, state or regional level. Minor temporary or permanent impacts on the local economy. Minor temporary or permanent local social or cultural impacts.

Significance of Impacts

Utilising a result from the previous two elements, an assessment is made of the significance of impacts identified. This significance is a function of the magnitude of change and the sensitivity of the receptor. The categories in Table 24 have been used when classifying overall significance for impacts identified in this SIA.

Table 24 Table for Assessment of Overall Significance

Magnitude	Sensitivity		
	High	Medium	Low
Large	Highly significant	Moderately significant	Slightly significant
Moderate	Moderately significant	Slightly significant	Not significant
Small	Slightly significant	Not significant	Not significant
Negligible	Not significant	Not significant	Not significant



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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	R.Gibson and C. Jux	Monique Chelin		L. Gibson		10/08/06