

# **Economic and Social Impacts of the Coppabella Mine on the Nebo Shire and the Mackay Region**

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on the Nebo Shire  
and the Mackay Region**

**PART IA: Executive Summary**

**Central Queensland UNIVERSITY**

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## **PART 1**

### **REPORT OVERVIEW – EXECUTIVE SUMMARY**

The Coppabella Mine has been established within the Nebo Shire by Australian Premium Coals. Mining operations commenced in 1998, and contractors are used to perform all mining operations. The mine produces approximately 5.5 million tonnes of coal per annum, and about 340 people are employed at the mine site.

The Coppabella Mine has contributed to the transformation of Nebo from an agricultural and administration centre towards a more mining focus. Previously, the impacts of mining in the Nebo Shire had been concentrated in Glenden (a mining town in the north of the Shire) and Coppabella (a railway town built to service the mining industry).

The mining industry makes a major contribution to the state and regional economies of Queensland. The industry accounts for significant job creation in the state because of the high income levels of employees and significant spending on business inputs. Beneficial flow-on effects result when that income to employees and suppliers is spent for business, consumption or investment purposes.

Despite the general appreciation of mining as a major economic driver of regional economies in Queensland, the impacts of mining on many local communities is harder to quantify. This is the situation for Nebo, where the development of a major mine 39 kilometres from the town has not appeared to have caused major adverse economic or social impacts. There are three broad reasons why the assessment of economic and social impacts is important for Nebo.

The first is that the local community is interested in maximising the positive benefits that flow from mining. These might include increases in population and business opportunities. However, the shiftwork operations of the mine contractors mean that most employees are based outside of the Shire and have little connection with Nebo. There has been no construction of a dormitory town and associated infrastructure as occurred with other mines in the region. As well, businesses servicing the mining industry have tended to be located at a regional centre rather than smaller townships.

The second reason is that the local community may be anxious to avoid economic and social problems associated with mining. In recent years some mining communities have struggled to cope with change as the industry has reorganised and reduced its labour force. Many mines only have an economic life of 15 – 30 years, and closure has subsequent impacts on their service communities.

The third reason is that communities are essentially in the position of having to compete for population and businesses, because good communication and transport links make it easier for employees and services to be more mobile. Communities and local and state government have to provide the infrastructure and services that make communities viable and attractive. Identification of the economic and social opportunities available can be important in allowing communities such as Nebo the chance to capitalise on the opportunities available.

## PART II

### ECONOMIC IMPACTS ASSESSMENT - EXECUTIVE SUMMARY

In this report the economic impact of the Coppabella Mine on the Nebo Shire and wider Mackay region has been detailed in several ways. The resulting information can be summarised into several key outcomes.

Total operating expenses of the mine are approximately \$230 million per annum, of which \$192.6 million can be attributed to expenditure in the region. There are further \$20 million in development costs per annum which may also impact on regional economic activity. From the operating expenditure, it is estimated that \$5.4 million is directly expended in the Nebo Shire as wages, contracted services and miscellaneous costs (Table 4.3.1). A further \$1.7 million is captured from miners who do not live in the Nebo Shire but spend some money there while working at the mine.

**Table 4.3.1 Summary of direct spending flows into region from Coppabella Mine**

	Nebo Shire (\$ Million)	Mackay Area (\$ Million)	Rest of Mackay region (\$ Million)
Direct wage expenditure	4.51	15.09	15.87
Expenditure from miners not living in area	1.715	0	0
Contracted services and supplies from businesses	0.282	Not assessed	Not assessed
Miscellaneous services and supplies from businesses	0.595	11.687	0.331
<b>Total</b>	<b>7.102</b>	<b>26.777</b> (excluding contracted services)	<b>16.201</b> (excluding contracted services)

The secondary economic impacts on the Shire can be estimated by firstly calculating the marginal propensity to consume local goods and services, and secondly to calculate the proportion of business inputs that are sourced locally. The first has been calculated from survey information at 15%, while the second has been calculated from interviews with business at 23.5%. The resulting multiplier for incomes that has been estimated is 3.66%. This means that the net additions to incomes are assessed at \$260,000. This is approximately 22% of business spending, so the total additional turnover that is generated is approximately \$1.18 million, bringing the total economic impact of the Coppabella Mine to \$8.28 million (Table 5.6.1).

**Table 5.6.1 Total economic impact of the Coppabella Mine on the Nebo Shire**

	Total Economic Impact (\$ Million)	Net addition to incomes (\$ Million)
Direct wage expenditure	4.510	4.510
Expenditure from miners not living in area	1.715	0.385
Contracted services and supplies from businesses	0.282	0.062
Miscellaneous services and supplies from businesses	0.595	0.131
Indirect impacts	1.182	0.260
<b>Total</b>	<b>8.284</b>	<b>5.35</b>

An input-output study to estimate the impact of the mine on the local economy predicts that expenditure levels from the Coppabella Mine will be higher, but that the share of total

incomes will be lower. Total additional expenditure is assessed at \$10.7 million, while the total increase in income is assessed at \$5.1 million (Table 6.5.1.1). The total effect on employment in the Shire is assessed at 62 additional jobs.

**Table 6.5.1.1 Estimated Economic Impacts of Coppabella Mine on the Nebo Shire**

	Output (\$m 2000-01)	Income (\$m 2000-01)	Employment (FTE persons)	Value added (\$m 2000-01)
Direct	\$7.7	\$4.5	36	\$4.7
Indirect	\$3.0	\$0.6	26	\$1.3
<b>Total</b>	<b>\$10.7</b>	<b>\$5.1</b>	<b>62</b>	<b>\$6.0</b>

FTE = Full-time-equivalent employment positions.

Source: AECeconomics.

An input-output study to estimate the impact of the mine on the Mackay region economy predicts that total additional expenditure from the Coppabella Mine is \$289.6 million, while the total increase in income is assessed at \$55.8 million (Table 6.5.1.2). The total effect on employment in the Mackay region is assessed at 783 additional jobs.

**Table 6.5.1.2 Estimated Economic Impacts of Coppabella Mine on the Mackay Region**

	Output (\$m 2000-01)	Income (\$m 2000-01)	Employment (FTE persons)	Value added (\$m 2000-01)
Direct	\$209.0	\$35.5	283	\$129.3
Indirect	\$80.6	\$20.3	500	\$39.9
<b>Total</b>	<b>\$289.6</b>	<b>\$55.8</b>	<b>783</b>	<b>\$169.2</b>

FTE = Full-time-equivalent employment positions.

Source: AECeconomics.

The evidence suggests that the Coppabella Mine has had a substantial economic impact on the Nebo Shire. The mine directly injects more than \$7 million into the Shire. In comparison, total income from agriculture is \$27 million, but Nebo does not service all agricultural businesses or capture a high proportion of business or consumption expenditure. It is likely that mining is becoming as important, or as more important than agriculture in supporting the economic base of the Nebo township.

This conclusion was supported by a survey of businesses in Nebo. Eighty-nine percent of businesses in Nebo and Coppabella identify the mining industry as being very important to their business. The Coppabella Mine provides the most custom to local businesses, with half of the latter identifying Coppabella Mine as the major source of their mining related business.

It appears that mining has contributed to an expansion of business opportunities in Nebo. The average number of employees per business has risen by 2.8 persons over the previous two years, representing a 32% increase. Most of the increases have been in businesses which provide accommodation or other services to the mining industry (Table 3.2). It is possible as well that economic stimulus from mining activities has masked a downturn in agriculture from the drought in 2001 – 2002.

However, there is also some evidence of missed business and development opportunities. The number of mines developed or being developed in the Nebo Shire would suggest that there are opportunities for more service businesses to be located in Nebo and Coppabella. It appears that there is unmet demand for housing in Nebo, and potential for housing development to occur. A survey of miners at the Coppabella Mine showed that there is some interest from mine workers based outside of the area in relocating closer to the Coppabella

Mine. It was estimated that 19% of those mine workers would be interested in relocating closer. This represents 45 workers from the 245 workers estimated to be based outside of the Nebo Shire.

## **PART III**

# **SOCIAL IMPACTS ASSESSMENT - EXECUTIVE SUMMARY**

### **Introduction**

Social impacts refer to all changes in the way that people live, work, play, relate to each other, organise to meet their needs and generally cope as members of society. Included among these changes are cultural impacts involving the values, norms and beliefs that guide social action. Impacts may thus be either, positive or negative, small or large in magnitude, short or long term, and so on. They may also have different implications for different groups within the community. Ultimately, assessment of whether a particular impact, or social change, is positive or negative, is entirely dependent on community values and aspirations.

This particular study differs from most Social Impact Assessments (SIAs) in that rather than attempting to estimate the impacts, in advance, of a proposed development, it represents an ex post evaluation of an existing development and attempt to extrapolate the longer-term implications of existing impacts.

### **Attitudes Regarding Social and Environmental Impacts**

Residents of both Nebo and Mackay were generally positive about coal mining and believed it creates more jobs in their local area, supports local businesses, helps their towns to develop, and supports better roads and services.

However, they also expressed concern about increased crime rates, risks associated with increased traffic, and the possibility that local rates might be impacted. There are also some concerns from Nebo residents that new people moving into the area will change Nebo for the worse.

There were a number of significant differences between the perceptions of Nebo and Mackay residents about the economic and social impacts of the mining industry. Mackay residents tended to be more confident about the positive economic impacts of the industry, while Nebo residents were more inclined to agree that there may be some offsetting social impacts.

Neither Nebo nor Mackay residents identified the environmental impacts of mining as highly significant relative to other environmental issues. Nebo residents were more likely to think that environmental impacts from mining were an issue, but more than 50% of Nebo respondents thought that there were no serious environmental impacts from mining.

## Population Characteristics

### Demographic Change

The overall demographic picture is of a community that has developed increased vulnerability to downturns in the mining industry with the likelihood of substantial outmigration, reduction of services and limited capacity among remaining residents to initiate alternative development paths. Key findings include:

- Mining activities have led to an increase in the total population of Nebo and Coppabella. The increases have mostly been males who have temporary accommodation in those towns.
- That increase in population has been offset within the Shire to some extent by further population declines in Glenden.
- In the longer-term the population is expected to decline, further reducing the likelihood of attracting services.
- Few members of Traditional Owner groups live in the area due to earlier periods of forced outmigration and limited employment opportunities.
- Education levels are low and likely to be a significant constraint on the ability of the community to initiate alternative economic opportunities.
- Income levels are, on average, relatively high. However, these are highly polarised with those outside the mining sector dominating lower income brackets.
- Mining has become the largest employer in Nebo Shire, with unskilled and semi-skilled positions predominant.
- Unemployment is extremely low, in part due to the shortage of low-cost accommodation in the area.

### Human Services

Little discernable change has been evident to the low level of human services available in Nebo Shire. Expected increases in school enrolments have not occurred, while the only additional medical service has been the appointment of a full-time ambulance officer.

### Housing

There is considerable unmet demand for housing in Nebo Shire with some indication that an increase in permanent housing may lead to modest immigration of families to the Shire.

However, the ability of the market to meet housing demand is severely constrained and more incentives may need to be offered by government or developers before private entrepreneurs respond to this demand. The short mine life of 25 years is likely to be constraining the development of permanent housing in the town.

## **Community Infrastructure**

There has been some debate over community infrastructure such as mains sewerage and sport and recreation facilities between the Nebo Shire Council and mine developers. Community infrastructure is the responsibility of governments, but it is possible that private industry may make voluntary contributions.

The area of highest priority for Council is mains sewerage for Nebo township, a development that will improve services for existing residents and reduce the cost of further investment in the town by developers. Sport and recreation facilities are inequitably distributed across the Shire while the shiftwork patterns maintained by the mining industry limit participation in sport and leisure activities.

## **Crime**

Residents of Nebo Shire perceive themselves to be at significantly greater risk of crime than prior to the development of the Coppabella mine due to the large number of unknown temporary residents staying in camp-style accommodation around the town.

While cause and effect relationships are difficult to determine, there is some evidence that crime rates have increased since commencement of the Coppabella Coal Mine project, but that overall rates remain extremely low.

Anecdotal evidence suggests that informal sanctions against ‘acting up’ are placed on employees while in the general proximity of the mine site. This may mask the effects of social issues often associated with crime such as substance abuse, problem gambling and domestic violence, and deserves further investigation at a regional level.

## **Community Participation and Integration**

Participation in community activities and groups is extremely limited among mine employees due to shiftwork patterns and the temporary nature of their residence in Nebo Shire.

This creates an extra burden for voluntary emergency service organisations such as the State Emergency Services that face extra demands due to the increased road traffic in Nebo Shire without providing extra members to share this burden.

Lack of integration and participation among mine employees suggests that when there is a downturn in the Shire’s mining industry few will remain in the area or contribute to the development of new economic futures.

## **Traffic and Fatigue**

Increased volumes of commuter and commercial traffic are evident on the Peak Downs Highway. A proportion of the increase can be attributed to the development of the Coppabella and Moorvale mines.

Residents not involved in the mining industry expressed a high level of concern over road safety. In addition to the increased risk of being involved in an accident that accompanies increased traffic volumes, residents experienced the psychological impact of increased stress and fear together with the extra burden of providing volunteer emergency services.

Exacerbating the increased potential for road accidents associated with increased volumes of traffic are shiftwork practices that contribute to fatigue through long hours and disturbance of sleep patterns. Offsetting this potential have been improvements in the quality of major roads and fatigue management programs.

While data indicating a drop in the number of accidents over the last 12 months may be indicative of successful fatigue management programs, it may also be a chance event. Ongoing attention to fatigue management and road safety is critical.

## **Community Identity**

Impacts of community identity vary throughout the Shire from negligible impact in Coppabella (still largely a railway town) and Glenden (established as a mining town) to significant community debate in Nebo township (previously an administrative and rural service centre).

Residents of Nebo township welcomed many aspects of mining but resisted the idea that Nebo would become a mining town. Apart from emotional attachment to the town's traditional identity, becoming known as a mining town was seen to be problematic due to the possibility that it would close down other development paths by discouraging new residents and investment in non-mining industries. They were particularly cognisant of what would happen to the town following the life of mines.

## **Economic and Industrial Base**

Mining has come to dominate the economic and industrial base of Nebo Shire and there is some evidence of expansion in other sectors to service the mining industry. However, the flow-on effects to other sectors appear limited and have been, in the case of labour availability, negative.

There is little to indicate that non-mining business expansion is likely to be sustainable beyond the life of coal mining. If this is not dealt with during the life of mines it is possible that when mining in the area declines towns within Nebo Shire will become poorly serviced poverty traps for those who cannot afford to move elsewhere.

In responding to this situation stakeholders emphasised the need they perceived to build community infrastructure so as provide a more attractive environment for investment and to build transferable and entrepreneurial skills among residents.



## **Mine Closure**

Demographic and other changes within Nebo have seen it develop the characteristics of a mining town and increased its vulnerability to mine closure. Coppabella is somewhat vulnerable to economic decline in the mining industry if the demand for rail services decreases. Glenden is a purpose-built mining town that is vulnerable to industry-wide restructuring as well as the closure of any one major employer.

Experiences in Coppabella reveal that downsizing of operations among major employers raises issues in relation to the desire of a number of residents to stay in the town and the limited capacity of local government under these circumstances to maintain services.

Nebo Shire Council's strategy of concentrating development in Nebo township to minimise these issues is rational, but dependent for success on the development of new mines in close proximity to the town and, in the longer-term, economic diversification.

While planning for closure in advance is not the norm in the mining industry there are strong arguments to suggest that it should be. To date, the only closure planning has taken place in relation to rehabilitation of the mine site, a process that has identified a number of opportunities for the economic and cultural development of Traditional Owners. Open and participatory planning is required with other stakeholders to identify additional management strategies.

## **Mine-Community Relationships**

### **Consultation and Communication**

Stakeholder's experience in relation to the accessibility and responsiveness of Australian Premium Coals differed widely, with Traditional Owners, local government and immediate neighbours securing best access.

Considerable concern was expressed over the willingness of the company to negotiate with stakeholders over both their plans for development of the sites at Coppabella and Moorvale and their plans to contribute to community infrastructure.

There remained a perception that mining companies, in general, only do enough by way of communication, consultation, impact assessment and contribution to the community to progress mining development. While APC was seen to be more open and responsive than most companies, there is an ongoing need to seek opportunities to allow genuine input into decision-making related to the mine and management of its impacts.

## **Planning and Governance**

Local government has limited ability to participate in planning and governance in new mine developments because of the state-based approval processes and revenue flows. Nebo Shire Council's objections to the Moorvale Coal operation were, as a result, noted, but appeared to

have little influence over approval or planning for this mining operation. There is no automatic process by which royalty payments from mining collected by state government are shared with local government.

Indigenous people have particular rights of participation in planning and management due to their Native Title and cultural heritage implications. The expression of these rights is often limited by narrow legislative understandings of Native Title and cultural heritage, limited capacity among Indigenous people to participate as volunteers in natural resource management and the absence of culturally appropriate governance processes. There is evidence that APC has acted to address these concerns in relation to their own operation, although it is unlikely that this positive impact will extend far beyond these sites.

Involvement of the wider community is limited, but essential to building the social capital that will ensure a long-term future for Nebo Shire. Despite vigorous processes of local and regional planning there is little engagement by the mining sector with these processes.

## **Cultural Heritage and Native Title**

APC has clearly developed a constructive relationship with Traditional Owners that is sensitive to competing Native Title claims and which has sought to identify opportunities for cultural, economic and social development.

While the disturbance of country through mining is a substantial negative impact on Aboriginal cultural heritage, this has been offset to a large degree through increased opportunities for access to country and expression of cultural heritage that was denied under previous land uses.

Training and employment programs for Indigenous people have largely been successful, although challenges remain in recruiting Aboriginal people into more senior positions within the mining industry and ensuring the economic sustainability of Aboriginal enterprises post mining.

Capacity building for Indigenous people must remain a high priority if opportunities afforded by access to, and management of, country post mining are to eventuate.

## **Environment**

The most significant social-environmental impact of coal mining at the present time appears to be the impact of temporary accommodation facilities on the visual amenity and identity of Nebo township. These accommodation facilities have met the appropriate planning and building requirements set by the Nebo Shire Council. While few people appreciated the visual impact of mining at the site of operations, they saw this as more or less inevitable.

Concerns were also raised about the impacts of dust, noise and vibration; land disturbance and tree clearing; and water resources. While environmental management processes are in place, regular communication of monitoring results, together with the involvement of appropriate community groups in environmental management, may alleviate these concerns.

## Conclusion

The main findings of the Social Impact Assessment, together with recommendations regarding management of impacts, are contained in Table 19.1.

Residents of Nebo Shire, on the whole, accept mining and believe it brings positive benefits to their Shire and region, particularly in relation to job opportunities, roads and telecommunications and services such as the permanent ambulance officer and private businesses. In raising issues related to the Coppabella Coal Mine through the course of this study they have been concerned not to oppose mining but to ensure that the interests of local people are not overlooked in planning and decision-making about mining.

While the Coppabella Coal Mine has had many significant impacts, in looking through Table 19.1 it is evident that many of this study's findings relate, in fact, to a lack of impact. While the mine may not be responsible for massive social dislocation, neither has it generated a number of the positive benefits that many may intuitively have expected. This is particularly evident in relation to the slow response of entrepreneurs to the development of complementary and new enterprises and to the construction of more permanent housing. Non-impacts in these respects can clearly be seen as highly significant given the increasing dependence of Nebo Shire on mining for employment and income.

Despite economic growth associated with mining creating only a small increase in population, Nebo Shire displays many of the characteristics of a community that is highly sensitive to any downturn in the mining sector. The Regional Forest Agreement (RFA) social impact assessment process for Queensland identified a number of indicators for the identification of vulnerable communities. These indicators were grouped around three main concepts: sensitivity to change in the local economy, social values about resource use and the service capacity of the locale/region.

Indicators relating to sensitivity to change in the local economy due to changes in resource use included: economic diversity, rates of unemployment, rates of employment in resource-use industries subject to change, levels of education and qualifications, income, housing ownership, purchasing and rental, and age. These indicators clearly point to some areas of concern for Nebo. The Shire's economy is dependent on mining (which will inevitably eventually close down) and agriculture (which is labour shedding), with little evidence of diversification. Unemployment is low as much because affordable rental accommodation is unavailable as because of employment opportunities. While, in the short-term, unemployment is not an issue of major concern, this is likely to change when the mining sector inevitably contracts. Employment is now concentrated in one industry—mining. Education levels are low and jobs are concentrated in the semi-skilled and unskilled categories. Housing availability is low. There has been an increase in the population aged over 65.

Social values on resource use in Nebo are conducive to mining, but recognise that the presence of mining is necessarily finite. The general community have no desire to become entirely dependent on it and believe it necessary to use mining as a platform to support other development paths. This is a positive sign for community capacity to cope with change. However, the service capacity of Nebo is clearly of major concern, placing severe constraints on the quality of life of residents and the ability of the Shire to attract investment and residents.

On the whole, the RFA indicators suggest that the capacity of the Nebo community to deal with any downturn in the mining industry will be limited. Further, with mining encouraging the gradual masculinisation of the Nebo population without increasing participation in social activities and networks, it may be seen as having some detrimental effects on this capacity. Sociologists use the concept of social capital to illustrate the importance of networks to economic, social and cultural development. They argue that constructive relationships between groups and individuals that support diversity, a climate of trust, acceptance of difference, conflict resolution and the mobilisation of resources is critical to the exploration and exploitation of new opportunities (Flora et al 1997; Gray & Lawrence 2001). It appears that mining has done little to enhance social capital in Nebo. This is of significant long-term concern due to the potential, in the event of a downturn in the mining industry, for Nebo to experience significant outmigration and income loss without sufficient capacity to generate alternative development paths and avoid the creation of a poverty trap for those left behind with unsaleable homes, limited capital and nontransferable skills.

Such a future is not inevitable and APC has engaged with some stakeholders in a manner that has enhanced capacity and social capital. The most obvious example of this is the capacity building approach that APC has taken to dealing with Traditional Owners. While Traditional Owners have legal and moral rights that differ from the rest of the community, the good will that has developed between APC and traditional owners should be used as something of a model for their engagement with other stakeholders. The strategies used in this regard may be very different, but the emphasis on building social capital between the groups should be generalised.

Practical strategies to build greater social capital and capacity with local government and the wider community may include taking a more proactive approach to engagement with regional planning processes that provide avenues for community participation and negotiation, and seeking to develop in concert with local government a formal Community Infrastructure Contribution Plan under the *Integrated Planning Act 1997*.

There is not a clear level of agreement between the Nebo Shire Council and APC over the impacts on, and appropriate contributions to, social infrastructure in the Shire. This is evidenced by the documentation in the Moorvale EIS, and the various comments received during the course of this study. The results of this study show that the development of the Coppabella and Moorvale mines are not creating major burdens on social infrastructure. This is largely because there has not been a major influx of permanent residents into Nebo or Coppabella.

However, it also appears that there is no clear vision in the local community for the development of Nebo and Coppabella. The debate in the local community over the introduction of a sewerage system demonstrates the different visions that residents have for their community. As well, there is the sense that the community is focusing on the needs of the current permanent residents, without focusing on the needs of the temporary workers in the Shire, or how to attract more permanent residents to move to the Shire. There is a need for a Social Infrastructure Plan to be developed that engages the community about these issues. The Nebo Shire Council is the appropriate body to develop such a plan.

Funding of social infrastructure is the responsibility of different levels of government. In major residential developments, local government can collect contributions from developers

under the guidelines of the *Integrated Planning Act 1997 (Qld)*. It is also possible that local industry makes voluntary contributions to social infrastructure, particularly where it contributes to employee satisfaction levels, and hence to workforce availability and participation rates. It is possible, therefore, that it may be in the interests of APC to make voluntary contributions to social infrastructure in Nebo and Coppabella where it benefits their workforce and mining operations.

Finally, it was noted in the methodological section of this report that ongoing monitoring of social impacts would be recommended. Given the type and magnitude of the impacts identified it is not recommended that such monitoring be intensive. However, monitoring will help to identify trends in community development that may be important components of other regional development issues.

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of the Coppabella Mine  
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**PART IB: Study Overview**

**Central Queensland UNIVERSITY**

**April 2003**

# **PART I: Study Overview**

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## 1.0 INTRODUCTION

### 1.1 Report Overview

Coal mining is a major industry for Queensland, and an important contributor to the economy and social fabric of many regional communities. Coal generates wealth for Queensland in two important ways; by bringing in export income and by allowing electricity to be generated at low prices. Low cost electricity contributes to the living standard of Queensland residents, as well as allowing other industrial and tertiary industries to minimise energy costs.

Economic activity and growth can foster improvements in social conditions in a number of ways. These include the direct creation of jobs, with corresponding flows of income and wealth accumulation. Economic growth also allows more resources to be used for social services such as health, education and welfare, both through private and public spending.

The mining industry is a key part of the state's economy, accounting for over 10% of the Gross State Product (ACIL Consulting 2002a). It employs nearly as many people as the agriculture industry, but tends to pay much higher wage levels. Most mining activities are in regional areas, and require capital spending on infrastructure requirements. As a result of spending on wages, infrastructure and operating costs, mines provide direct injections of economic stimulus into regional areas. They also help to maintain regional employment and population growth.

At a broad level, the impacts of the mining industry on the state's economy and social capital are clear and substantial. At the regional and local level though, the impacts are not so easily defined, particularly for a single mine. This is for two key reasons. Firstly, it is not transparent what the economic and social impacts of mining are on a particular region or local area as compared to other industries and the provision of public services. Secondly, there is some diversity in the operations and supply of labour to mines, making it harder to identify the impacts of a particular operation on economic and social factors.

The identification of social and economic impacts of a mine can be important in negotiating the appropriate provision of services and infrastructure with local, state and commonwealth governments. A mine typically involves substantial infrastructure and labour requirements, with subsequent impacts on social infrastructure and capital. There may be both positive and negative aspects to the flow-on effects. Planning processes exist to identify and minimise these impacts. The Queensland Government streamlines a detailed planning and assessment process by assessing major new projects in an integrated manner. A single Environmental Impact Statement (EIS) is prepared to address a range of environmental, social, infrastructure and economic criteria.

While the approval process and the preparation of an EIS helps to ensure that there are no unanticipated impacts of a new development, there is often a negotiation process about who bears the cost of the impacts. The cost of many of the direct impacts is paid for by developers



or project proponents, while other costs may be met by the community or different levels of government. Benefits from new project developments also flow to these groups.

Many of the impacts of new development projects are not very transparent. Environmental and social impacts are often difficult to identify and to cost accurately. Many economic impacts are also difficult to identify clearly, because of time and spending lags and the problems involved in separating out influences from different industries. This lack of transparency about the full impacts of new development (both positive and negative) makes it difficult to negotiate agreements about who bears the costs and benefits.

These issues are explored in this study in relation to a single project in Queensland, the Coppabella Coal Mine. The research has been funded by Australian Premium Coals, which operates the Coppabella Mine using contractors to perform the mining operations. The research has been carried out between September 2002 and April 2003 by a team of researchers from Central Queensland University, drawing in particular on regional development, economic and sociology skills. As a research project, the findings of the study will be publicly available.

The Coppabella mine is located approximately 130 kilometres west of Mackay in Central Queensland. It is located in the Nebo Shire, close to the towns of Nebo (approximately 39 kilometers east of the mine) and Coppabella (10 kilometres west of the mine). Beef cattle is the traditional industry in the Nebo Shire, but there have been developments in coal mining in the region, as it overlays the northern end of the Bowen Basin.

The Coppabella Coal Mine is responsible for directly employing up to 340 people. However, the social and economic impacts of the mine on the local Shire and the Mackay region are difficult to identify in detail. This is because there are other mines in the region which also contribute to the local economy, regional economic dynamics are also affected by changes in other industries, and social dynamics are influenced by government programs and other factors.

In this report, the key factors that contribute to economic and social changes are identified. These are presented respectively in Sections two and three of the report. The remainder of this introductory section of the report is structured as follows. In the next section, general background information about the coal industry and regional development in Queensland is presented. The Coppabella Mine and the local and regional area in which it is situated are described in Section 3, and the focus of the study is outlined in Section 4.

## 2.0 BACKGROUND TO THE COAL MINING INDUSTRY, AND SOCIAL AND ECONOMIC IMPACTS

Coppabella Mine is one of a number of coal mines in the Bowen Basin. The basin extends from Collinsville in the north to Moura in the south, and produced \$2.76 billion of coal in 1999/2000. This was 34% of Queensland's total mineral production (Department of Local Government and Planning 2002).

Mining activities tend to be carried out by larger scale firms. There are approximately 140 minerals and energy companies operating in Queensland in the year 2000. These firms directly employed approximately 16,400 people, and paid them almost \$1000 million in salaries (ACIL Consulting 2002a). A further 15 – 20% of jobs and salary payments would have been sourced through payments to contractors, and a further \$2,200 million paid to firms that provided goods and services to the mining industry (ACIL Consulting 2002a). It is estimated that there are up to 60,000 full-time and part-time jobs involved in the provision of goods and services to the mining industry.

The mining industry in Queensland accounted for around 17% of all capital expenditure in Queensland in 1999-2000 (ACIL Consulting 2002a). This amounted to \$1,215 million. The main areas of expenditure from an industry producing more than \$6 billion per year are as follows:

Salaries and wages	\$1.2 Billion
Goods and services	\$2.2 Billion
Infrastructure	\$1.2 Billion

Other areas of expenditure include exploration and research and development. These investments are important, because mining relies on new discoveries and better technology for extraction to be able to maintain or increase output. Currently about 10.2% of the Gross State Product, and about 1 in every 14 jobs is generated by mining activities (ACIL Consulting 2002a). The contribution is much higher for regional areas in Queensland where mining activities occur. The economic stability and growth of many regional areas is dependent on continued investment in the mining industry.

The importance of mining to regional economies is driven by the high incomes of employees in the mining sector. Average weekly earnings in the mining sector in Australia are higher than any other industry, and were \$1,424/week for a full-time employee in August 2001. Wage levels are approximately double weekly earnings in the retail trade and tourism industries (ACIL Consulting 2002a). The high levels of income in the mining industry mean that flow-on expenditure levels are high. Even though mining accounts for only 1 in every 14 jobs in Queensland, the industry accounts for significant job creation as income is spent in other industries. In terms of spending impacts on the Queensland economy, a job in mining is worth approximately two jobs in either the retail trade or tourism industries (ACIL Consulting 2002a).

The contribution of the coal industry to output and jobs in regions of Queensland has been reported by ACIL Consulting (2002a). These estimates are reproduced in Table 2.1. They

show that the coal industry is responsible for approximately half of mining related jobs in Queensland, and that the bulk of economic and employment activity is in Central Queensland, where approximately 15,784 full-time job equivalents have been created by the industry. The estimates indicate that much of the employment and economic activity generated by the coal mining industry is captured within the same region.

**Table 2.1 Annual economic benefits from coal and petroleum production.**

Region	Gross output effects (\$M)	Additions to factor income (\$M)	Additions to Gross State Product (\$M)	Full-time job equivalents
Brisbane- Moreton	769.00	230.17	295.91	4558
Wide Bay-Burnett	584.61	127.38	220.41	3183
Southern	862.84	258.61	310.09	4114
Central	4636.64	927.22	1811.82	15784
Northern	634.95	97.14	312.75	3797
Northern-West	162.81	14.38	72.95	1098
Total Queensland	7650.85	1654.90	3023.93	32533
Rest of Australia	521.90	148.07	209.30	3322
Total Australia	8172.75	1802.97	3233.23	35855

Source: Mangan J. 2001 The significance of the mining industry to the Queensland Economy (unpublished). Quoted from ACIL Consulting 2002.

The following are examples of how income that results from mining in the Central Region flow to other areas of the economy:

- Purchases of high technology equipment and technical services assess by a mining firm.
- Machinery and equipment for maintenance purposes are purchased from local and interstate suppliers.
- Mining employees and their families spend their income on local goods and services such as housing, food, clothing, health services and recreation.
- Investors in mining firms receive dividends which they use for the purchase of goods and services (ACIL Consulting 2002b).

The contribution of mining to the Queensland economy does not come at a high environmental cost. Only 0.03% of land in Queensland is currently disturbed by mining (ACIL Consulting 2002a). There have been past examples of mining activities that have caused off-site environmental problems, and there are about 100 abandoned mine sites in the State that need to be rehabilitated (ACIL Consulting 2002a). Much more rigorous standards regarding environmental impacts now apply to the mining industry in Queensland, which helps to minimise any impacts. However, there are still opportunities for the investment in rehabilitation to be linked more closely with the needs and priorities of the relevant communities (Rolfe 2001).

There have been changes in employment patterns within the coal industry over the past few years, which are also linked with some social changes. There are two major changes in employment patterns to note. First, there is increasing emphasis on the use of contractors to perform some or most of the mining operations. This change has been driven by searches for efficiencies in production. Second, there is increased usage of variations on fly-in/fly-out operations, where mining companies no longer build mining towns or take full responsibility of employees outside of working hours. There have also been changes in industrial relations agreements and shift work patterns at many mines across the Bowen Basin.

One effect of the changes is that employees now have more choice about where they are located. Many employees now live in the larger centres or coastal cities and stay in company accommodation when they are completing a shift. Another effect is that there has been some turnover of people across mining towns as many mining companies have shed staff. Most of the mining towns have maintained population with increased employment by contractors and service industries.

These changes have to be viewed in the context of other demographic influences on regional Queensland. There have been population losses in many regional areas as increased efficiencies in agriculture and service industries mean that fewer people are employed in those sectors. In many cases the population movements are from rural areas and smaller towns to larger centres within regions. Better transport and communication facilities, increased emphasis on service industries and the increased scale of firms and enterprises are among some of the economic reasons why larger centres have grown at the expense of smaller ones.

There are also a number of social reasons why there have been population movements to larger centres. These include better employment opportunities (especially for partners), better education and health services, increased recreation opportunities, and quality of lifestyle factors. Currently there are a variety of employment patterns at the different mines across the Bowen Basin, ranging from fly-in/fly-out to the company town close to the mine site option. This means that there is some opportunity for employees to “vote with their feet”, and shift to the mining operation that suits their personal preferences.

### 3.0 OVERVIEW OF THE COPPABELLA MINE OPERATION, AND THE MOORVALE MINE OPERATION

#### 3.1 Nature of the Mining Operation

Australian Premium Coals (APC) Pty Ltd is the project manager for the Coppabella Coal Mine. This includes the original Coppabella site plus the Coppabella East and Coppabella South extension. The firm also operates the nearby Moorvale Coal Mine, which began in December 2002. The Coppabella Coal Mine is a conventional open cut strip mine which produces a range of Pulverised Coal Injection (PCI) and Thermal Coal for the export market through the Dalrymple Bay Coal Terminal at Hay Point which is 120 kilometres by rail (Australian Premium Coals Pty Ltd 2000).

Mining at Coppabella commenced in July 1998. Based on current estimates of resources, the mine life for the Coppabella Mines is expected to be 25 – 30 years depending on the rate of production. Current production from Coppabella is approximately 5.5 million tons per annum. Further detail on the mine operations is available at <http://www.macarthurcoal.com.au/Coppabella.html>.

The Moorvale property is located south of the Peak Downs Highway approximately 10 kilometres southwest of Coppabella township, 50 kilometres south east of Moranbah, 50 kilometres south west of Nebo, and 160 kilometres south west of Mackay. Coal is expected to be extracted from mid 2003, with current estimates of mine life at approximately ten years. This operation will also be an open cut strip mine. Further detail on the mine is available at <http://www.macarthurcoal.com.au/Moorvale.html>.

#### 3.2 Resourcing the Mining Operation

The Coppabella mine is operated as a contract operation with staff employed at the contractor's discretion. Currently three major contractors are involved in operating the mine. These are Leighton Contractors Pty Ltd, Sedgman Operations Pty Ltd and Roche Mining Pty Ltd. Australian Premium Coals Pty Ltd directly employs fewer than 10 permanent staff in the Mackay region for the Coppabella Mine, but has more personnel located in the Brisbane head office. A summary of contractor functions is presented in Table 3.2.1.

**Table 3.2.1 Contractors at the Coppabella Mine**

Contractor	Function	Shift Configuration	Employee Numbers (approx)
Leighton	Operate 2 pits	5 days on and 3 days off	84 – 90
Sedgman	Operate washplant	5 days on and 3 days off	14
Roche	Operate 1 pit	6 days on and 3 days off	180 – 190

### 3.3 Residence of Workers engaged in Mining Operations

The Coppabella Mine is typical of many newer mining operations in the Bowen Basin in that an associated mining town has not been built to house employees. Many employees live in Mackay or other centres, and stay in accommodation at Nebo or Coppabella when on a shift roster. For example, Leighton provides a camp for shift employees at Coppabella, or pays employees an allowance if they make their own accommodation arrangements while on a shift roster. Some people commute from Moranbah or Mackay, although the latter arrangement is not desirable for fatigue and safety reasons.

**Table 3.3.1 Accommodation patterns**

Contractor	On Shift	Off Shift
APC	Broader Mackay Moranbah Nebo	Broader Mackay Moranbah Nebo
Leighton	Moranbah (31%) Nebo (22%) Coppabella (47%)	Moranbah Nebo Broader Mackay
Sedgman	Permanent staff of John BS Operations 93% Coppabella 7% Nebo CHPP Manager Nebo Sedgman visitors 100% Nebo JSIS maintenance Crew 100% Nebo	Broader Mackay Moranbah Coppabella Nebo Other
Roche	15% Broader Mackay 10% Moranbah 6% Coppabella 69% Nebo	62% Broader Mackay 10% Moranbah 3% Coppabella 10% Nebo 15% Other

### 3.4 Demographic Profile of the Mackay Statistical Division

The Mackay Statistical Division comprises the seven local government areas of Mackay City, Mirani, Whitsunday, Sarina, Belyando, Broomsound and Nebo. It covers a total area of 69,175 kilometres which represents 4.0 per cent of the total area of the State (OESR 2001). The resident population of the Division is nearly 130,000 people, which represents approximately 3.6% of Queensland's. Approximately 60% of the population are located in Mackay City.

Annual growth rates for the population in the Division have been in the range 1.4% to 1.7%. This growth is concentrated in Mackay City, and the Shires of Whitsunday, Mirani and Sarina. Three local government areas have experienced population declines in recent times – Broomsound Shire, Belyando Shire, and Nebo Shire. The projected increase in population for the Mackay Statistical Division for the next 20 years is an average rate of growth of 1.2% per annum.

The region's major industries are agriculture, mining and tourism. The value of agricultural production to the area is \$484 million and mineral production \$2,442.9 million, with black coal contributing most of the latter. Mackay City has the highest value of agricultural production and Nebo Shire has the lowest. Hay Point Services and the Dalrymple Bay Coal terminals handle nearly 25% of Queensland's exports (by value).

### 3.5 Demographic Profile of the Nebo Shire<sup>1</sup>

The Nebo Shire comprises 10,009 km<sup>2</sup>, of which the majority is used for low-intensity beef grazing purposes. There are three small towns in the Shire, being Nebo, Glenden and Coppabella. Nebo is the administrative hub of the Shire, with the townships of Coppabella and Glenden established to support the mining industry. Coppabella was established in 1971 by Queensland Rail to house employees working in rail operations associated with transporting coal from a number of mines. Glenden was built as the residential base for the Newlands Mine which is mostly located outside the Shire boundaries.

Based on the 2001 Census, the Shire's population was 2,529 with 54% of residents in urban centres and 46% the rural balance. This represents an increase of 67 people (2.7%) since 1996 and a decrease of 105 people (4.0%) since 1991 (ABS 2001). Mining commenced at Coppabella in July 1998, thus any relevant impacts of the operation would be expected to be reflected in the 2001 Census data.

In 2001, there were 260 family couples with children (which comprised 55% of all families in occupied private dwellings, 176 couple families without children (38%), 29 one parent families (6.2%), and 4 other families (0.85%). There were 43 people (2.4% of persons) in occupied private dwellings in group households and 127 people (7.0%) in lone person households.

Population projections for the period 1996 – 2021 (Department of Local Government and Planning 2001) indicate a continuing population decline for Nebo Shire. However in a regional context, Mackay City, Mirani and Sarina Shires are expected to have population increases.

At the time of the 1996 Census, the overall unemployment rate of the Shire was 3.2%, compared with 9.7% for Queensland. The Shire had 0.1% of Queensland's employed persons and 0.0% of Queensland's unemployed persons. The employment participation rate (of people in the appropriate age categories) was 74.6%, which is higher than that recorded for Queensland (63.2%) (ABS data cited in OESR (2001), p. 9).

In 2001, the Shire's median weekly income was \$700 – 799. Due to differences in methodologies and other factors, the figures from 1996 and 1991 are not directly comparable. It is worth noting that the median income in these years was \$500 – 599, and \$300 – 399 respectively. This suggests that there has been a substantial rise in Shire incomes as mining activities have developed.

In the context of the ABS' Social Economic Index, Nebo Shire was 992, where the nominal average index value for determining socio-economic disadvantaged areas is 1000 (ABS 1996, in Department of Local Government and Planning 2002). While the region is expected to realise population growth over the next 20 years, the Nebo Shire is expected to experience population decline over the period. 'The issues facing the inland towns and rural areas are likely to be significantly different. The decline in population, particularly in the working age group, may lead to difficulties in maintaining existing service levels and a decline in local economic opportunities.' (Department of Local Government and Planning 2002, p. 13).

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<sup>1</sup> Information drawn from the ABS, 2001 Census Basic Community Profile and Nebo Shire Snapshot.

## 4.0 FOCUS OF THE STUDY

The economic and social impacts of mining developments in central Queensland are topical for a number of reasons. Some of the key ones (in no particularly order) are:

- Communities look to new mines as a way of achieving regional development goals, and are therefore interested in predicting economic and social spinoffs
- Communities in central Queensland associated with mining have tended to have stable or growing populations over the 1980s and 1990s, while communities reliant mostly on agriculture (eg those in western Queensland) have tended to suffer population declines
- There are social impacts occurring from both restructuring in the mining industry and from introducing new mines – these can be both positive and negative
- The local economic impacts of mining developments tend to be reduced for fly-in/fly-out or other flexible labour supply arrangements compared to permanent local workforce arrangements
- There is interest in planning for the future to ameliorate the social and economic impacts of mine closures
- The distinction in responsibilities about the provision of social and economic infrastructure has been blurred in the past when mining companies constructed mining towns for employee accommodation
- There are often calls on mining companies to contribute to regional development and social infrastructure projects that are outside of their direct commercial interests
- The impacts of mining developments on local government operations and budgets are not always easy to identify accurately
- Community acceptance of new mining projects has become more critical and greater attention is paid to addressing adverse social and environmental impacts that might arise
- There are perceptions in many communities that mining activities do not generate many local or regional benefits compared to more traditional industries such as agriculture.

These issues are being addressed in the mining industry in different ways.

- At a planning and regulatory level, the Environmental Impact Assessment (EIA) process that is undertaken for major projects in Queensland is becoming more rigorous and complete. The EIA process typically covers social, cultural heritage and other impacts as well as the environmental assessments.
- At an information level, there has been some work to identify the economic and employment impacts of the mining industry on state and regional areas. For example, Pacific Coal, which operates the Blair Athol, Kestrel, Tarong and Hail Creek projects in Queensland has been assessing community attitudes in the relevant regions, as well as modelling the economic impacts of their operations (e.g. ACIL Consulting 2002a).
- At a community engagement level, there have been greater efforts made by mining companies to engage with communities. Some of the mechanisms used include planning groups involving community members, public briefings and information



sessions, funding for events and infrastructure, support for environmental and social programs, and the establishment of community trust funds or other publicly available funding programs.

- At a community planning level, there has been substantial interest from communities, local and state governments and other bodies in addressing social and other issues. An example of a community planning initiative was the Positive Futures for Mining Communities Forum held in Moranbah in November 2000.

The key aims of this study are to add to the work and information that already exists by focusing on three key tasks:

1. Identify the economic impacts of the Coppabella Mine on the Nebo area and the Mackay region. A key focus is to identify the extent to which people in the Nebo community participate in the wealth generation process that flows from having a coal mine in the area, and to explain how that wealth is generated.
2. Identify the social impacts of the Coppabella Mine on the Nebo area and the Mackay region. A key focus is to identify where the establishment of the Coppabella Mine has impacted on social patterns in the area.
3. Assess the perceptions of local and regional populations to environmental and social impacts of mining activities in the region.

The results of the study are reported in the Part II: Economic Impacts Assessment and Part III: Social Impacts Assessment.

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**Economic and Social Impacts  
of the Coppabella Mine  
on the Nebo Shire  
and the Mackay Region**

**PART II: Economic Impacts Study**

**Central Queensland UNIVERSITY**

**April 2003**

# **PART II: Economic Impacts Assessment**

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## 1.0 INTRODUCTION

The key issue of interest is to identify the economic impacts of the Coppabella Coal Mine on the local economy. This is primarily the townships of Nebo and Coppabella within the Nebo Shire. It is expected that the mine will contribute both directly and indirectly to the economic impact. Direct impacts will come through employing people in the Shire, and purchasing goods and services from local businesses. Indirect impacts will occur through the flow on effects of increased spending and employment.

The issue of economic impacts on the local area is a very separate one to an assessment of the economic viability of the mining project. That question is addressed through the State Government approvals process for major new developments in Queensland. The approvals process ensures that major projects that are commercially viable do not impose spillover costs on other parts of the community that are not accounted for. Agreement is often reached with the project proponent about how spillover effects might be limited and where the responsibility for those effects might lie.

Identification of the local economic effects of a major project is important because there is no guarantee that a major project will have a large effect on a small community. There are a number of reasons for this. Some are specific to a project, and include factors such as scale, labour force requirements and purchasing needs and patterns. Some are specific to the community, and include the ability to supply goods and services, and the opportunities for capturing consumer spending. Some project operators may have specialised needs which mean that most goods and services are sourced from outside a local area. Larger communities have more potential than smaller ones to provide business services and capture consumer spending.

The variety of project specific and community specific factors mean that the economic impacts on communities will be different for each project. This is why a case study approach is required to identify what the circumstances of each particular situation are. A case study can help regional communities to identify areas of spending leakages and potential for increasing economic activity. Communities, regions and government areas are effectively competing for resources and population in the same way that businesses compete for business opportunities and customers. Helping communities and regions to identify where economic activity can be increased will make them more competitive and attractive for businesses and population.

To explore these issues, this report is structured as follows. In the next section, an overview of how economic impacts occur and how they might be assessed is presented. In Section 3.0, a community economic analysis is provided for the Nebo Shire, while in Section 4.0 the amount of direct expenditure from the Coppabella Coal mine into the Nebo Shire is estimated. The economic impacts of this expenditure are assessed in Section 5.0, and the results of an input – output study are presented in Section 6.0. The potential for the Nebo Shire business community to capture a greater share of mine spending is assessed in Section 7.0 and Conclusions are drawn in Section 8.0.

## 2.0 HOW DO ECONOMIC IMPACTS OCCUR?

Major projects or significant changes in an area can be expected to have some impacts<sup>1</sup> on the local or regional areas where they occur. While many impacts of a project may be beneficial, some may adversely impact on an area. For this reason, it is commonplace to summarise and evaluate the net impacts of a project on a region in some form of an impact assessment process. Typically, impacts are classed into three major groups and evaluated separately. Those groups are economic, social and environmental. For example, an Environmental Impact Assessment (EIA) is now a standard requirement for most major projects. It is possible, and sometimes desirable, to evaluate other impacts separately. Examples of other summaries that might be possible include impact assessments of health impacts, energy requirements or greenhouse gas emissions.

An Environmental Impact Assessment will normally include some overview of economic and social impacts of a major project. However, those impacts are not normally covered as rigorously in an EIA as the environmental impacts. This is because economic and social impacts tend to be positive ones, and because the responsibility for those factors usually lies with government and other groups rather than the project proponent. The result is that something is known about the economic impact of a project in terms of its total spending, there is usually little information available about the net impacts of major projects on regions and local areas.

The impacts of a project on a local or regional area can be summarised in the following way. The key concepts of interest (Jensen & West 2002) are:

- The extent to which project operators purchase inputs from the local or regional economy. Examples of inputs include wages for labour supplied from the local or regional area, and purchases of goods and services. The more that a project operator sources from the local or regional economy, the more money that is directly injected into the economy.
- The extent to which money spent in a local or regional economy is retained within that economy. If there is not much opportunity for people receiving income to spend it on goods and services in their local or regional area, then not as much money will be kept in the local or regional area. Larger and more diverse regional economies tend to be better at keeping expenditure in their economy and not 'losing' it to other regions.

The first concept can be thought of as the amount of direct injection of money into the local or regional economy that can be sourced from a particular project. The second concept can be thought of as the extent to which that initial injection is multiplied through the economy by secondary expenditure. Initial expenditure flows become revenue and income to the people and firms providing labour, goods and services to the project operator. Those people and firms can then spend that revenue and income, creating secondary economic impacts. In this

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<sup>1</sup> Impact is a term that could also be explained by words such as *effect*, *result*, *incidence*, *consequence* and *contribution* (Jensen & West 2002).

way, an initial injection of expenditure can be multiplied into a larger economic effect on a region.

The multiplier effect is limited, because at each round of expenditure some money is lost to pay for goods and services that come from outside the region. As well, some money will be allocated to pay for taxes, and for savings purposes. Only a proportion of money that is spent in a region becomes available for expenditure in that region in a subsequent expenditure round.

The multiplier effect of an initial injection of expenditure into a regional economy is depicted in Figure 2.1. This shows the impacts of expenditure when the regional economy can capture 40% of each round of expenditure for subsequent spending. In each round, 60% of expenditure goes out of the region, or is diverted for other purposes such as taxation or savings. After six rounds, the economic impact of the initial injection of expenditure falls close to zero, and the net secondary effect of the \$1 injection of funds is \$0.66. The total economic impact can be assessed as a multiple of 1.66 times the initial injection of money. In regional economies that do not attract much secondary expenditure, multipliers can be expected to be low, while in regional economies that do not have much “leakage” of expenditure, multipliers will be much higher.

A simplistic approach to estimating the total economic impacts of expenditure into a regional economy can therefore be generated by estimating

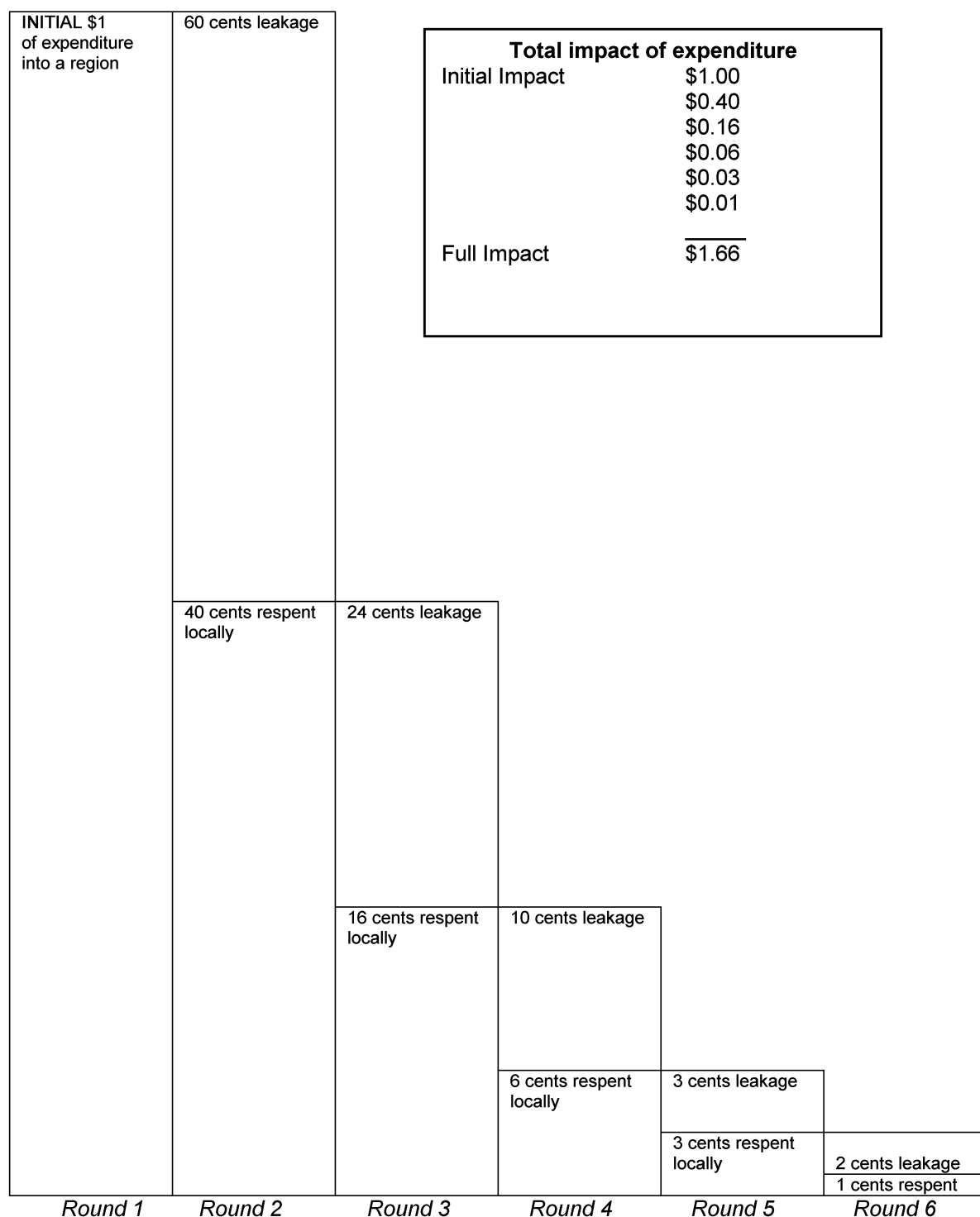
- (a) the size of the direct impacts (the amount of expenditure injected) and
- (b) the multiplier effect.

*This approach is demonstrated in Sections 4.0 and 5.0 of this report.*

While this approach is useful for demonstration purposes, it is not the most accurate way of estimating economic impacts. For that purpose, mathematical models termed input-output models are used. These model a regional economy in terms of a number of sectors, and allow for differential impacts between sectors, depending on the extent to which sectors supply inputs to each other. Input-output models have been developed for regions of the Queensland economy. Because the models are complex to build and operate, separate models are not available at a Shire level. However, estimates about economic impacts at a Shire level can be made from an input-output model.

*The input-output approach is demonstrated in Section 6.0 of this report.*

**Figure 2.1 How expenditure is multiplied in an economy (not fully to scale)**  
(Adapted from Jensen & West 2002).





## 2.1 Estimating the Multiplier in the Simplistic Approach

The multiplier effect can be estimated by the application of what are known as Keynesian multipliers. This relates the increase in economic activity from an initial spending injection to both the propensity of spenders to shop locally, and the proportion of expenditure that becomes income to local residents (Jensen and West 2002). A simple formulation of the Keynesian income multiplier is as follows (where  $k$  stands for the multiplier):

$$k = 1/(1 - MPC_L \times PSY)$$

*Where:*

$MPC_L$  is the marginal (or average) propensity to consume locally, or the proportion of income (or income change) which is spent locally,

*and*

$PSY$  is the proportion of local consumption expenditures that eventually becomes local income, i.e. local salaries and wages, profits and interest payments. It is an expression of the proportion of each dollar spent locally which ends up in the pockets of the local community rather than paying for imported goods and services (Jensen and West 2002, pp.13-16).

Jensen and West (2002) suggest that for small communities (less than 5000 people), the  $MPC_L$  will range from 0.2 – 0.4. For larger communities, the  $MPC_L$  will be more like 0.6 – 0.7. For the Nebo community, which has less than 1,000 people, the  $MPC_L$  is likely to be 0.2 or lower, while for the Mackay region, the  $MPC_L$  may be more like 0.7.

The  $PSY$  can be expected to range between 0.25 and 0.75. Higher proportions are expected in service industries where labour is a high proportion of total costs. Lower proportions are expected where most of the business turnover reflects goods and services purchased in from outside a local area. In small communities the  $PSY$  can often take the value of about 0.4 – 0.5.

The range of values for an income multiplier can be demonstrated by using the low, medium and high values for the  $MPC_L$  and  $PSY$  (Jensen & West 2002, pp. 13-16).

*Taking the highest values in the range:*

$$k = 1/(1 - 0.8 \times 0.75) = 2.5$$

*Taking the middle-range values:*

$$k = 1/(1 - 0.5 \times 0.25) = 1.33$$

*Taking the lowest values in the range:*

$$k = 1/(1 - 0.2 \times 0.25) = 1.05$$

These examples demonstrate the range of values that a multiplier might take. The examples show that if \$1 of additional income is added to a regional economy, the resulting indirect or flow-on impact on incomes can be expected to range from \$1.50 down to \$0.05. Jensen and

West (2002) suggest that the multipliers for small regions would be approximately 1.15 to 1.2.

These exercises demonstrate that the flow-on effects of spending in small communities tends to be limited. This is because:

- (a) it is difficult for small communities to capture a high proportion of spending, and
- (b) a large proportion of business inputs (goods and services) have to be sourced from outside the small community.

An example of a multiplier is presented in ACIL Consulting (2002a), where they suggest that for every dollar of salary in the mining industry, about 56 cents is spent in the regional community. The estimate was made by looking at Australian Bureau of Statistics (ABS) household expenditure information from 1993/94, and excluding payments for tax, superannuation, housing, and half of recreation and miscellaneous services.

**Table 2.1 Average Weekly Household Expenditure in Queensland**

	Gross income quintile					Average
	Lowest 20%	Second quintile	Third quintile	Fourth quintile	Highest 20%	
AVERAGE WEEKLY HOUSEHOLD EXPENDITURE (\$)						
Upper boundary of income quintile group (\$)	293	495	773	1,252	..	..
<b>Broad expenditure group</b>						
Goods and services						
Current housing costs	55.32	72.03	98.69	129.23	130.09	96.99
Domestic fuel and power	9.80	11.66	12.35	15.13	16.01	12.99
Food and non-alcoholic beverages	63.96	93.65	108.06	146.71	172.34	116.88
Alcoholic beverages	7.38	11.15	19.71	22.01	34.74	18.96
Tobacco products	6.36	10.55	10.39	13.87	11.39	10.52
Clothing and footwear	10.77	17.57	19.18	32.16	49.87	25.89
Household furnishings and equipment	24.74	26.12	32.89	54.97	64.67	40.65
Household services and operation	27.10	33.84	36.36	51.42	55.58	40.85
Medical care and health expenses	18.04	20.85	24.74	36.52	49.63	29.93
Transport	41.07	69.54	111.17	141.02	175.23	107.46
Recreation	38.29	61.30	72.74	89.61	144.37	81.18
Personal care	5.79	8.00	10.57	14.31	21.46	12.01
Miscellaneous goods and services	26.92	34.55	47.76	64.84	99.73	54.69
<b>Total goods and services expenditure</b>	<b>335.55</b>	<b>470.82</b>	<b>604.62</b>	<b>811.81</b>	<b>1,025.12</b>	<b>648.99</b>
<b>Selected other payments</b>						
Income tax	1.75	14.62	83.11	182.46	430.76	142.12
Mortgage repayments-principal	5.04	7.46	21.89	42.77	44.49	24.29
Superannuation and life insurance	3.30	4.09	11.51	20.65	55.90	19.04

This approach can be updated using more recent ABS data, and focusing on the income range appropriate for employees in the mining industry. The relevant data is reported in Table 2.1. Using this data for the upper income quintile, income tax, superannuation and mortgage repayments are estimated to be 34.1% of total expenditure and are leakages to the regional area. Housing costs are a further 8.4%, and can be apportioned between regional spending (in

the case of rental income) and leakages (in the case of interest payments on housing loans). In a simple exercise, a 50:50 split may be adopted. If half of recreation and miscellaneous services are also categorised as leakages, the proportion of each dollar of income that is lost to a region is approximately 50%. This provides a baseline estimate of the  $MPC_L$  for the Mackay region.

## 2.2 Previous Work on Input-Output Studies

Input-output models have been used in previous studies to provide estimates about the economic impact of mining activities in Queensland. An example comes from ACIL Consulting (2002a) where the impacts of the operation of the Hail Creek mine in the Nebo Shire are modelled for the Queensland economy. The Hail Creek mine is 35 kilometres north-west of Nebo, and is projected to produce 5.5 M tonnes of coal per annum with a workforce of approximately 200 people.

A multi-regional impact model (MRIP) was used to assess the benefits of Hail Creek as a new project (ACIL Consulting 2002a). The model assessed the projected impacts of the project over 10 regional areas of Queensland and across 32 industry sectors. In summary, the results predicted that the impact of the operations phase of the mine would generate:

- *gross output effects per annum of between \$474 and \$630 million,*
- *net additions to State product of \$219 to \$303 million,*
- *job creation of between 2,549 to 3,687 positions, and*
- *net regional income growth of \$93 to \$130 million (ACIL Consulting 2002a p.18).*

The proportion of the impact that was projected for the Mackay statistical region ranged from 0.55 for job creation to .7 for net regional income growth. When the projected increase in State product is averaged across the projected increase in jobs, the annual distribution per job is \$83,700. This implies that all or most of the benefits of new production flow to Queenslanders. It is possible that there are substantial leakages out of Queensland in the form of dividends to shareholders, interest payments to financiers, and input payments to suppliers. ACIL Consulting (2002b) indicates that approximately 50% of annual investment expenditure in the mining industry is retained within Queensland and 50% flows outside the state. The size of the leakage should be smaller for operational spending from mines, but may still be substantial.

More conservative estimates of the impacts of mining from input-output studies are reported in ACIL Consulting 2002b, drawing on the work of Mangan (2002). This work was focused more specifically on the impacts of investment in mining rather than the operational phase. The authors report that mining-related investment projects annually inject into the Queensland economy:

- *Over \$1150 million in additional output*
- *\$260 million in additional incomes to workers and shareholders*
- *\$550 million in value added*
- *over 2500 new jobs and the support of over 3700 existing jobs (ACIL Consulting 2002b p. 23).*

These results confirm that new mining activities in Queensland can be expected to generate significant impacts in terms of employment, additional output, additional incomes, and the creation of new value-added activities. For every \$1 million of additional mine output, there are approximately 2.2 new jobs created, and an additional 3.2 jobs supported. Seventy percent of that job creation is expected to occur in the region where the mining activities take place.

### **3.0 COMMUNITY ECONOMIC ANALYSIS FOR THE NEBO SHIRE**

In the previous section, it was described how injections of spending into a local economy can create subsequent rounds of spending activity through a multiplier effect. The size of the multiplier effect is largely determined by the extent to which local consumption is captured in the local economy, and the proportion of business inputs that can be sourced from the local economy. To provide some background on these issues, a description of the local economy is useful. This helps to identify key relationships within a local economy and to generate information about the likely range of the multiplier effects. In this section, a brief community economic analysis is provided for the Nebo Shire.

The Nebo Shire comprises 10,009 km<sup>2</sup>, of which the majority is used for low-intensity beef grazing purposes. There are three small towns in the Shire, being Nebo, Glenden and Coppabella. Nebo is the administrative hub of the Shire, with the townships of Coppabella and Glenden established to support the mining industry. Coppabella was established in 1971 by Queensland Rail to house employees working in rail operations associated with transporting coal from a number of mines. Glenden was built as the residential base for the Newlands Mine which is mostly located outside the Shire boundaries.

Based on the 2001 Census, the Shire's population was 2,529 with 54% of residents in urban centres and 46% the rural balance. This represents an increase of 67 people (2.7%) since 1996 and a decrease of 105 people (4.0%) since 1991 (ABS 2001). Mining commenced at Coppabella in July 1998, thus any relevant impacts of the operation would be expected to be reflected in the 2001 Census data. The statistics mask population shifts within the Shire where decreases at Glenden have been effectively offset by increases at Nebo and Coppabella.

In 2001, there were 260 family couples with children (which comprised 55% of all families in occupied private dwellings, 176 couple families without children (38%), 29 one parent families (6.2%), and 4 other families (0.85%). There were 43 people (2.4% of persons) in occupied private dwellings in group households and 127 people (7.0%) in lone person households.

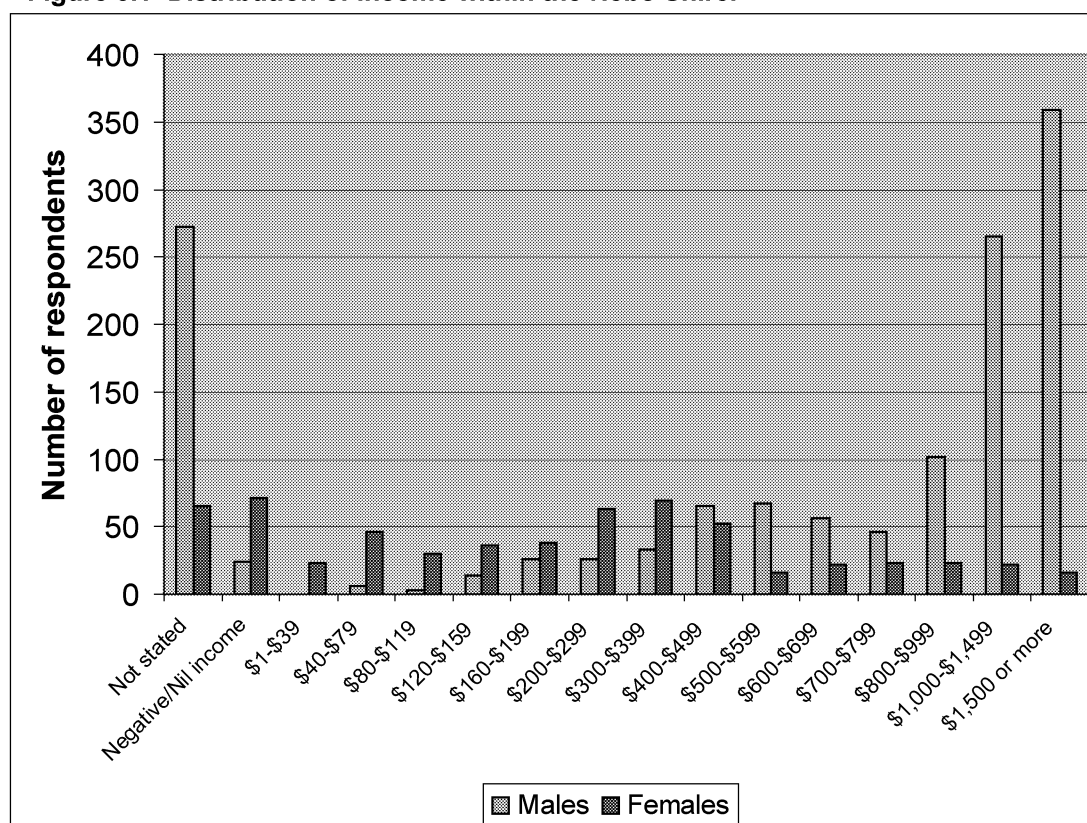
Population projections for the period 1996 – 2021 (Department of Local Government and Planning 2001) indicate a continuing population decline for Nebo Shire. However in a regional context, Mackay City, Mirani and Sarina Shires are expected to have population increases. Some of the decline in the Nebo Shire is likely to come from the Glenden township, as mine restructures and other trends means not as high a proportion of the workforce is located in the adjacent township. This means that it is not necessarily the case that the population of the Nebo and Coppabella townships will decline.

At the time of the 1996 Census, the overall unemployment rate of the Shire was 3.2%, compared with 9.7% for Queensland. The Shire had 0.1% of Queensland's employed persons and 0.0% of Queensland's unemployed persons. The participation rate was 74.6%, which is higher than that recorded for Queensland (63.2%) (ABS data cited in OESR 2001, p. 9). It is likely that the unemployment rate is low because proximity to Mackay and the lack of cheap

housing means that job-seekers tend to move to larger centres. However, it does indicate that employment rates within the Nebo Shire are strong.

In 2001, the Shire's median weekly income was \$700 – 799. Due to differences in methodologies and other factors, the figures from 1996 and 1991 are not directly comparable. It is worth noting that the median income in these years was \$500 – 599, and \$300 – 399 respectively. This suggests that there has been a substantial rise in Shire incomes as mining activities have developed. Some care has to be taken with using median or average income figures because they may hide large imbalances in the distribution of income. This issue is explored in Figure 3.1 where the distribution of weekly income is depicted for males and females in the Shire.

**Figure 3.1 Distribution of income within the Nebo Shire.**

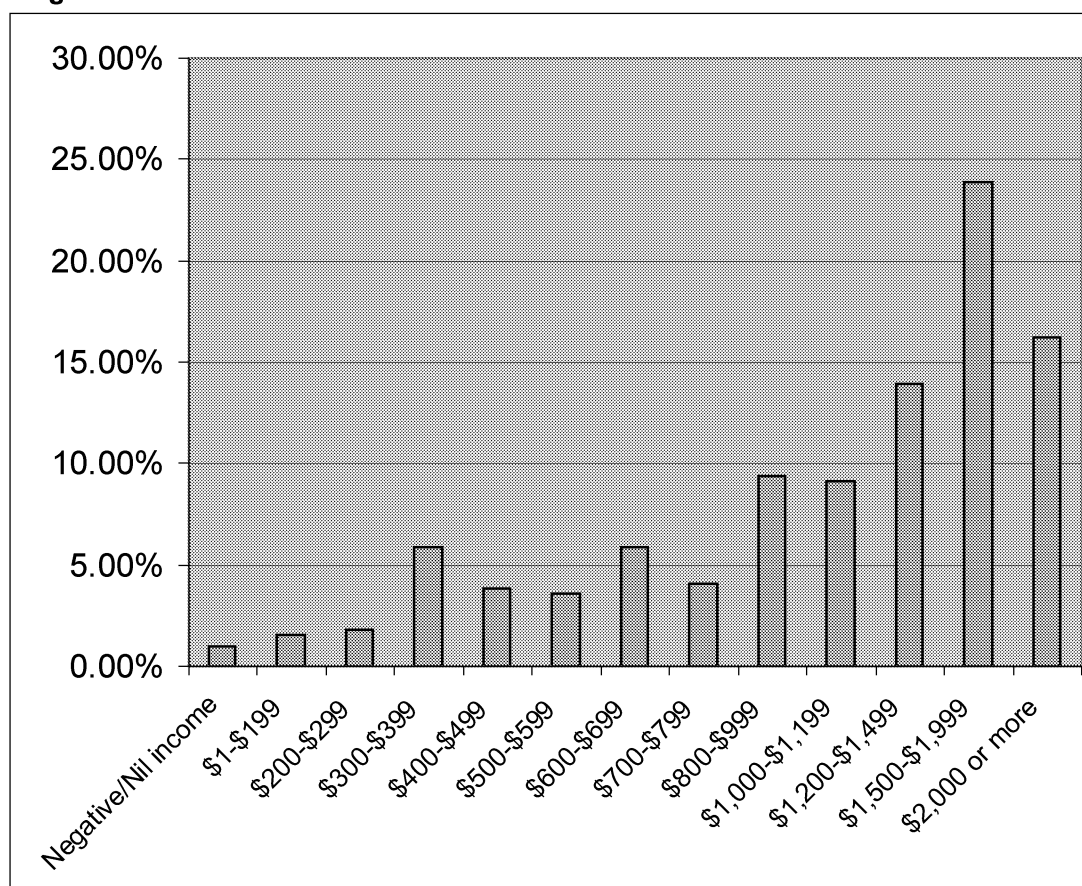


Source: ABS Census data 2001

The results show that 33% of people in the Shire, (presumably in the mining industry), who are earning more than \$1000 per week, and a further 6.3% are earning \$800 - \$1000 per week. There is a substantial group earning negative or very low incomes (13% earn \$200/week or less), and an intermediate group (11%) earning between \$300 and \$500. Women in the Shire earn significantly less than men.

Income is important in predicting economic activity and as an indicator of local welfare. Income provides one indication of the standard of living, as well as a measure of the ability to spend (Jensen and West 2002). The income statistics by family drawn from the 2001 census data (excluding non-responses and partial responses) is shown in Figure 3.2. This demonstrates that 27.4% of families have less than \$800/week income, 32.5% have between \$800/week and \$1500/week income, and 40.1% have more than \$1500/week income.

**Figure 3.2 Income of families in the Nebo Shire**



Source: ABS Census data 2001.

In the context of the ABS' Social Economic Index, Nebo Shire was 992, where the nominal average index value for determining socio-economic disadvantaged areas is 1000 (ABS 1996, in Department of Local Government and Planning 2002). While the region is expected to realise population growth over the next 20 years, the Nebo Shire is expected to experience population decline over the period.

The issues facing the inland towns and rural areas are likely to be significantly different. The decline in population, particularly in the working age group, may lead to difficulties in maintaining existing service levels and a decline in local economic opportunities. (Department of Local Government and Planning 2002, p. 3).

The gross value of agricultural and mining production in the Shire in 2001 was \$26.930 Million and \$297.088 Million respectively (ABS data reported in CRC for CZE&WM 2003). There are limited amounts of irrigated land (813 ha) and land used for cropping (1,931 ha), presumably used to support beef fattening operations. The income from coal mining is based on the Coppabella Mine and the South Walker Creek mine, which produced approximately 3.5 million tons and 3 million tons respectively in 2000-1 (CRC for CZE&WM 2003).

Employment by industry in the Nebo Shire is reported in Table 3.1.

**Table 3.1 Employment by industry in the Nebo Shire**

Industry name	Number Employed				Annual % change
	1986	1991	1996	2001	
Agric, Forestry	135	165	161	196	3.01
Mining	373	468	524	544	3.06
Manufacturing	7	21	33	37	28.57
Electricity, Gas, Water	0	0	7	7	0.00
Construction	51	43	193	92	5.36
Wholesale Trade(a)	11	63	12	54	26.06
Retail Trade			37	54	0.00
Accommodation, cafes & restaurants (b)			82	89	0.00
Transport and Storage	111	107	108	116	0.30
Communication Services	5	12	3	6	1.33
Finance and Insurance ( c)	9	25	10	7	-1.48
Property and Business Services			42	68	0.00
Public Administration, Defence	30	39	33	31	0.22
Education (d)			49	51	0.00
Health and Community Services	11	69	24	21	6.06
Cultural and Recreational Services (e)	11	52	6	6	-3.03
Personal and Other Services			9	14	0.00
Non classifiable & Not stated	17		41	27	3.92
<b>Total</b>	<b>771</b>	<b>1064</b>	<b>1374</b>	<b>1420</b>	<b>5.61</b>

Source: ABS Population Census data. Notes to the Table involve different classifications used in 1986 and 1991: (a) for 1986 and 1991 includes Retail Trade (b) for 1986 and 1991 not reported separately (c) For 1986 and 1991 includes Property and Business Services (d) for 1986 and 1991 not reported separately (e) For 1986 and 1991 includes Personal and Other services.

The employment data demonstrates that employment in the Nebo Shire has almost doubled between 1986 and 2001. Most growth has occurred in Agriculture and Mining areas (approximately 3% per annum), but there has also been significant increases in Manufacturing, Wholesale Trade, and Construction. There have been slight declines in Cultural and Recreational Services, and Finance and Insurance.

As well, there have been shifts in the structure of employment within the Shire, as is demonstrated in Table 3.2. This demonstrates that employment in mining and agriculture has become a smaller component of employment in the Shire over the 15 years between 1986 and 2001. This suggests that there are increased flow-on effects from these industries as other businesses have developed to provide goods and services into the agriculture and mining sectors.

In determining the economic impact of the Coppabella Mine on the Nebo Shire, it is likely that only the businesses in the Nebo and Coppabella townships will be impacted. There is not expected to be little if any interaction with businesses in Glenden. A list of key businesses in the Nebo and Coppabella townships is presented in Table 3.3.

Schaffer (1989) categorised communities into eight groups according to the range and number of retail outlets. The smallest group is 'hamlets', which tend to have a fuel station and a food outlet, while the largest group is a metropolitan area which tends to have 500 or more retail establishments across a wide range of categories. The list of businesses suggests that Nebo can be categorised in terms of shopping facilities in the second lowest group as a 'minimum convenience centre'. The lack of a chemist shop or medical services, as well as the absence



of dedicated shoe, garden, building, furniture or appliance outlets means that the centre could not be regarded as having full convenience services.

**Table 3.2 Structural change in employment between 1986 and 2001**

Employment Structure, Growth and Structural Change, 1986 - 2001					
Industry name	Structure of Employment (%)				Change between 1986 and 2001 %
	1986 %	1991 %	1996 %	2001 %	
Agric, Forestry	17.51	15.51	11.72	13.80	-3.71%
Mining	48.38	43.98	38.14	38.31	-10.07%
Manufacturing	0.91	1.97	2.40	2.61	1.70%
Electricity, Gas, Water	0.00	0.00	0.51	0.49	0.49%
Construction	6.61	4.04	14.05	6.48	-0.14%
Wholesale Trade(a)	1.43	5.92	0.87	3.80	2.38%
Retail Trade	0.00	0.00	2.69	3.80	3.80%
Accommodation, cafes & restaurants (b)	0.00	0.00	5.97	6.27	6.27%
Transport and Storage	14.40	10.06	7.86	8.17	-6.23%
Communication Services	0.65	1.13	0.22	0.42	-0.23%
Finance and Insurance ( c)	1.17	2.35	0.73	0.49	-0.67%
Property and Business Services	0.00	0.00	3.06	4.79	4.79%
Public Administration, Defence	3.89	3.67	2.40	2.18	-1.71%
Education (d)	0.00	0.00	3.57	3.59	3.59%
Health and Community Services	1.43	6.48	1.75	1.48	0.05%
Cultural and Recreational Services (e)	1.43	4.89	0.44	0.42	-1.00%
Personal and Other Services	0.00	0.00	0.66	0.99	0.99%
Non classifiable & Not stated	2.20	0.00	2.98	1.90	-0.30%
<b>Total</b>	<b>97.80</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>2.20%</b>

Source: ABS Population Census data. Notes to the Table involve different classifications used in 1986 and 1991: (a) for 1986 and 1991 includes Retail Trade (b) for 1986 and 1991 not reported separately (c) For 1986 and 1991 includes Property and Business Services (d) for 1986 and 1991 not reported separately (e) For 1986 and 1991 includes Personal and Other services.

This analysis suggests that while there is a substantial group within the Nebo Shire that have high income levels, the Shire will not capture a high proportion of consumer spending. As well, the majority of business inputs would be expected to be sourced from outside the Shire, which will also reduce the flow-on effects of spending within the Shire. The proximity of Nebo to Mackay means that it is feasible for many business and domestic requirements to be sourced directly from Mackay.

**Table 3.3 Businesses in the Nebo Township and surrounds**

B & S Bus Hire Pty Ltd
Bowen Mechanical
Coppabella Store/Post Office
Greg McLean Electrical
MAC Centre
Mobil Service Centre
Nebo Electrical & Refrigeration
Nebo Hotel
Nebo Mechanical & Repairs
Nebo Sawmill
Nebo Motel
Nebo Post Office
Nebo Store
Queensland Railway Institute Coppabella
Retreat Hotel
Scullies Bulk haulage
Shell Junction Café
Stayawhile Caravan Park

## 4.0 THE DIRECT EXPENDITURE IMPACTS OF THE COPPABELLA COAL MINE

There are approximately 330 – 340 people employed at the Coppabella Coal Mine by Australian Premium Coals or one of the contractors (Leighton, Roche and Sedgman). The direct operating costs of the mine are approximately \$230 Million, with a further \$18 Million spent annually on capital, and \$2 Million spent on exploration.

The most important component of mine expenditure in terms of regional economic impact is the expenditure on wages. An approximate indication of the total wages expenditure can be gained from the following exercise:

Average hourly rate (\$60/hr) x the average shift length (11 hours) x number of shifts per year (allowing holidays) (182) = \$120,120 annual income per miner.

\$120,120 per miner x 335 workers (average size of workforce) = \$40.24 Million.

However, shift length and rotation patterns vary across the contractors, and not all people employed at the mine site are necessarily full-time or on miner's rates. Therefore a slightly different method has been employed to estimate total expenditure by category. This adjusted actual mine operating expenses to generate an estimate of the total expenses within the region.

The annual payments to the contractors were adjusted downwards to allow for head office expenses and a return on capital. For head office expenses, 5% was allowed for each contracting firm. For the return on capital, 7% was allowed for Roche and Leighton, while 10% was allowed for Sedgman (because of the higher capital investment in the washplant). The remaining expenditure was distributed between categories by a simple formula, and expenditure of Australian Premium Coals at the minesite was added. The operating costs of the mine that are relevant to the region can therefore be summarised as follows:

**Table 4.1 Operating expenses of mine site relevant to region.**

Expenditure category	Annual expenditure (\$ Million)
Labour	41.39
Parts, tyres, repairs	39.05
Fuel	14.16
Electricity	3.00
Explosives	10.62
Fixed costs (administration, overheads, marketing, leases etc)	44.42
Railway and Port	42.00
<b>Total expenditure from mine site</b>	<b>192.64</b>

There are a further \$18 million per annum in royalty charges which have not been included within these figures, and \$20 million per annum in development costs (capital and exploration) which have not be included. Following this approach, the average income per miner is \$123,552 per annum (assuming an average total workforce of 335 people on the minesite).

To identify what the direct impacts of this expenditure has been on the Nebo Shire, two separate exercises have been performed. The first was a survey of the employees at the minesite. This helped to determine the number of employees who had their main place of residence within the Nebo Shire, and whose earnings could be counted as contributing to Shire income. As well, it helped to identify the average expenditure of non-Shire residents within the Shire when they were there on shift rosters.

The second exercise was an analysis of non-labour expenditure within the local and regional communities by Australian Premium Coals. This provided some estimates of the rate and pattern of expenditure within the Nebo Shire and Mackay regions which could then be extrapolated across the contractor operations as well. Here, each of those exercises is reported in turn.

## 4.1 Survey of Miners

A brief survey (see Appendix A) of 10 questions was developed to be given to miners at the Coppabella mine site. The survey was easy to complete, and most questions could be answered with a tick in the appropriate box. The survey was administered in January and February 2003. Miners were approached while they were on a break during one of their shifts and asked to complete the form. One hundred and thirty-four surveys were successfully completed and returned, which represents approximately 40% of the workforce.

The location of respondents (after non-responses are omitted) is shown in Table 4.1.1 below. This demonstrates that the workforce is sourced from a wide variety of locations.

**Table 4.1.1 Location of main residence of sample of mine workers**

Town where main residence is located	Number of responses	Town where main residence is located	Number of responses
Bowen	2	Kenilworth	1
Brisbane	3	Kyogle	1
Bucasia	2	Mackay	48
Calen	1	Mirani	1
Campwin Beach	1	Moranbah	27
Charters Towers	3	Nebo	9
Clermont	1	Nebo/Mackay	1
Collinsville	3	Nundle NSW	1
Coppabella	5	Perth WA	1
Dingo Beach	1	Rockhampton	2
Dysart	1	Sarina	6
Glenden	1	Townsville	1
Grasstree Beach	1	Tully	1
Homehill	1	Walkerston	2
Ilbilbie	1	Yeppoon	1

When the location information is condensed into regions, the following pattern emerged (Table 4.1.2). Of the respondents, 14.5 indicated that they were based in the Nebo region (1 response was split with Mackay); while 99.5 responses indicated that they were based in Mackay or elsewhere in the Mackay statistical division. From this information, it can be estimated that across the full workforce of 335 miners and other staff, 37 will be based in the

Nebo Shire, 122 in the Mackay area, and 128 elsewhere in the Mackay region. Using the total wages estimate of \$41.39 Million, the wages income can also be estimated (Table 4.1.2). This shows that \$4.51 Million in wages flows to households in the Nebo Shire (including employees living at Coppabella), \$15.09 Million to households in the Mackay area, and \$15.87 Million to households in the rest of the Mackay statistical region.

**Table 4.1.2 Location of mine workers by region**

Area	Number of respondents	% of respondents	Expected number over full workforce	Total income from wages (\$ Million)
Nebo	14.5	10.90%	37	4.51
Mackay	48.5	36.47%	122	15.09
Other Mackay region	51.0	38.35%	128	15.87
rest of Qld	16.0	12.03%	40	4.98
Interstate	3.0	2.26%	8	0.93

In the survey of miners, there were also questions about expenditure patterns within the Nebo Shire. This allowed estimates to be made about the amount of spending generated by employees at the Coppabella Mine within the Nebo Shire. Miners were asked to estimate their weekly or shift pattern expenditure on items like fuel, food and accommodation within the Nebo Shire. Miners who were based in the Nebo Shire have been excluded from this analysis, so that the information just captured the additional spending in the Shire of miners who were not based there.

Results from the survey relating to expenditure are summarised in Table 4.1.3. This shows that the average mine employee who is not a resident of the Nebo Shire spends an average of \$119.87 in the Shire each week. This estimate is then extrapolated across 48 working weeks per annum to generate average annual expenditures, and across an estimated 298 non-Nebo Shire employees to generate total expenditure within the Shire. It is estimated that those employees spend a total amount of \$1.715 Million within the Nebo Shire, or approximately 4.66% of their income. The key expenditure groups are accommodation and food, alcohol and fuel.

**Table 4.1.3 Expenditure in the Nebo Shire by Coppabella employees from outside the Shire**

Category	Average weekly expenditure (\$)	Average annual expenditure (\$)	Total estimated annual expenditure (\$ Million)
Accommodation	37.29	1789.84	0.533
Food	18.30	878.51	0.262
Alcohol	32.35	1552.74	0.463
Fuel	21.05	1010.23	0.301
Car	3.38	162.42	0.048
Entertainment	5.41	259.67	0.077
Other	2.09	100.32	0.030
<b>Total</b>	<b>119.87</b>	<b>5753.74</b>	<b>1.715</b>

## 4.2 Analysis of Non-Labour Expenditure

In addition to wages, another important way that money from the Coppabella mine enters the regional economy is through spending on business services. There are two main pathways for

this to happen. The first is where firms at Coppabella Mine contract out some service or supply arrangements. For example, firms might be contracted to supply cleaning services or machinery parts. The second pathway is where local or regional businesses supply goods or services on an ad hoc basis to the Coppabella Mine.

The proportion of contract expenditure from the minesite in the Nebo Shire was estimated at 0.25% of non-labour costs at the minesite or approximately \$282,000 per annum. Contracts were typically for services such as cleaning and accommodation. The proportion of contract expenditure in the wider Mackay region has not been assessed, although it could be expected to be much higher. The main reasons why there is low level of contracted expenditure in the Nebo Shire is there are fewer businesses in the Nebo Shire which could be involved in contracted services and business supplies, and because it is feasible to supply the services directly from Mackay.

To gain an estimate of the rates of miscellaneous direct expenditure on small businesses in the region, data was collected from Australian Premium Coals on expenditure patterns between 1998 and September 2002. From this information, annual expenditure rates were estimated for non-wage expenditure by Australian Premium Coals on businesses in the Nebo Shire, the Mackay city area, and the rest of the Mackay statistical region (Table 4.2.1). These rates have then been extrapolated across the total expenditure from the minesite (excluding wages and rail & port charges). This net amount of total expenditure was estimated at \$111.25 million per annum (Table 4.1).

**Table 4.2.1 Estimated annual miscellaneous expenditure on small businesses**

	Percentage of non-wage expenditure by APC (%)	Estimated annual non-wage expenditure across minesite (\$ Million)
Nebo Shire	0.54	0.595
Mackay area	10.60	11.687
Rest of Mackay region	0.30	0.331

### 4.3 Summary of Direct Spending Flows into the Region

The analysis provided above allows some assessment of the direct expenditure flows into the local and regional community to be made. This is summarised in the table below (Table 4.3.1). Expenditure in the Mackay and Rest of Mackay region by non-local miners has been set at zero because those impacts are more correctly classified as secondary economic impacts. The results show that the Coppabella Mine is injecting a minimum of \$7.102 million into the local economy for the Nebo Shire each year. There would be additional injections from new works and one-off projects.

**Table 4.3.1 Summary of direct spending flows into region from Coppabella Mine**

	Nebo Shire (\$ Million)	Mackay Area (\$ Million)	Rest of Mackay region (\$ Million)
Direct wage expenditure	4.51	15.09	15.87
Expenditure from miners not living in area	1.715	0	0
Contracted services and supplies from businesses	0.282	Not assessed	Not assessed
Miscellaneous services and supplies from businesses	0.595	11.687	0.331
<b>Total</b>	<b>7.102</b>	<b>26.777</b> (excluding contracted services)	<b>16.201</b> (excluding contracted services)

## **5.0 THE FLOW-ON EFFECTS FROM EXPENDITURE AT THE COPPABELLA COAL MINE**

### **5.1 Introduction**

The direct annual expenditure in the Nebo Shire that can be attributed to the Coppabella mine operations is approximately \$7.1 million. This expenditure can be expected to create some flow-on effects in terms of increased economic activity. As explained in Section 2.0, those flow-on effects are limited by the propensity of people receiving income to spend that money outside of the Nebo Shire, and by the proportion of business inputs that need to be sourced from outside of the Shire. The higher that each of these factors is, the lower will be the flow-on effects of the additional spending in the Shire.

In this section, some evidence is provided about the size of those different leakage factors.

### **5.2 Demographic Data of Nebo Shire and Mackay Region Residents**

To gain information about expenditure patterns and provide some estimates about multiplier effects, data has been collected by surveying residents of the Nebo Shire and Mackay region by telephone. Sixty-three households were surveyed in the Nebo Shire, and 124 households were surveyed in the wider Mackay area in March 2003. (See Appendices B and C for copies of the surveys.)

Households from the Nebo Shire were selected at random using the Telstra White Pages. Only households with the Nebo (or Coppabella) address were used, so that residents from Glenden were excluded. The survey included residents from the Nebo township and rural properties in the Shire. Households from the Mackay region were also selected from the Telstra White Pages. Households from a number of regions were used to cover the population in the coastal strip around Mackay from south of Proserpine to south of Nebo.

Some summary statistics about the groups sampled are provided in the tables below. The age groups of respondents are summarised in Table 5.2.1, indicating that the Nebo population tends to be slightly older than the Mackay population.

**Table 5.2.1 Age groups of survey respondents**

Age Group	% responses	
	Mackay	Nebo
Under 20 years	2.4	0.0
20 - 30 years	12.2	9.5
31 - 45 years	40.3	38.1
46 - 65 years	30.6	38.1
Over 65 years	10.5	11.1
No answer	4.0	3.2
	100.0	100.0

The length of residence of respondents in their area is reported in Table 5.2.2. The results demonstrate that both areas have very stable populations with low levels of turnover.

**Table 5.2.2 Length of residence in area**

Duration	% responses	
	Mackay	Nebo
Less than 2 years	3.2	1.6
2 - 5 years	9.7	6.3
5 - 10 years	14.5	14.3
10 - 20 years	14.5	27.0
Over 20 years	56.5	49.2
No answer	1.6	1.6
	100.0	100.0

The household size reported by respondents from the different areas is reported in Table 5.2.3. Both populations had an average household size of 3.3 persons/household.

**Table 5.2.3 Household size**

People in household	% responses	
	Mackay	Nebo
1 person	12.9	9.5
2 people	27.4	36.2
3 people	16.9	19.0
4 people	21.1	16.2
5 people	12.1	11.1
6 people	4.8	1.6
7 people	1.6	3.2
8 people	0.0	1.6
No answer	3.2	1.6
	100.0	100.0

The proportion of households with children living at home is reported in Table 5.2.4. There is little difference between the areas, except for a slightly higher proportion of no-children households in the Nebo Shire.

**Table 5.2.4 Children living at home**

Children	% responses	
	Mackay	Nebo
1 child	16.9	19.0
2 children	19.4	14.3
3 children	12.1	7.9
4 children	4.0	1.6
5 children	0.8	3.2
6 children	0.0	1.6
No answer / None	46.8	52.4
	100.0	100.0

Household income is reported in Table 5.2.5. There is no difference between the areas in terms of low income households. However, the Nebo area tends to have a higher proportion of high income households and a lower proportion of middle income households than does the Mackay region.

**Table 5.2.5 Household Income**

Income	% responses	
	Mackay	Nebo
Less than \$40,000	42.7	42.9
\$40,000 - \$80,000	41.2	34.9
Over \$80,000	14.5	20.6
No answer	1.6	1.6
	100.0	100.0

Occupational details for the respondents from the two areas are summarised in Table 5.2.6. The results show the high proportion of people in the Nebo area involved in agriculture compared to the Mackay area. Statistical tests for the Mackay region revealed that people who worked in *Mining, Finance and Management* sectors had significantly higher incomes than average, while people in *Building and Transport, Retired* or *Student* categories had significantly lower incomes. Statistical tests for the Nebo region revealed that Retired people had significantly lower incomes than average. (People involved in Mining in the Nebo area did not identify as having significantly higher incomes).

**Table 5.2.6 Occupation of respondents**

Occupation	% responses	
	Mackay	Nebo
Agriculture and Fishing	8.1	58.7
Mining	11.3	11.1
Health, Teaching & Government	12.9	7.9
Finance & Management	4.0	3.2
Building & Transport	10.5	1.6
Engineering, Electrical & Auto	6.5	1.6
Retail	8.9	0.0
Cleaning & Maintenance	3.2	1.6
Self-employed	1.6	1.6
Retired	16.1	9.5
Student	2.4	0.0
Other	8.9	1.6
No answer	5.6	1.6
	100.0	100.0



### 5.3 Expenditure Patterns of Residents in the Nebo Area

Information about expenditure patterns was gathered to identify the proportion of disposable income that was being retained in the Nebo area. Residents of the Nebo area were asked about the frequency of their shopping visits to both Nebo and Mackay. The results, shown in Table 5.3.1 demonstrate that almost all Nebo residents are making regular shopping visits to Mackay. It also appears that up to one-third of residents in the Nebo area may not be shopping in the Nebo township.

**Table 5.3.1 Frequency of shopping visits to Nebo and Mackay**

Frequency	% responses	
	Nebo	Mackay
Everyday	17.5	0.0
More than once a week	19.1	4.8
Once a week	9.5	20.6
Once a fortnight	6.3	46.0
Once a month	14.3	25.4
Can't say	11.1	0.0
Other	22.2	3.2
Total	100.0	100.0

More specific data was gained by asking respondents what proportion of their purchases in different categories were spent in Nebo, Mackay or elsewhere. The data are reported in Tables 5.3.2, 5.3.3 and 5.3.4. The results demonstrate that no expenditure in Nebo was reported by respondents in the categories of *Clothing and Footwear*, *House and Garden*, or *Medical Care*, and very low rates of expenditure were reported in most other categories. In contrast, very high rates of expenditure were recorded in Mackay, apart from *Recreation and Holidays* and *Education* categories. There were only low rates of expenditure recorded for expenditure elsewhere, apart from *Recreation and Holidays*, and *Purchase of Motor Vehicles*.

**Table 5.3.2 Spending of Nebo residents in Nebo**

Category	% of responses in expenditure group				
	0-24	25-49	50-74	75-87	88-100
Food, Groceries & Alcohol	92.1	1.6	3.2	0.0	3.2
Clothing & Footwear	100.0	0.0	0.0	0.0	0.0
Furniture & Appliances	98.4	0.0	0.0	0.0	1.6
House & Garden	100.0	0.0	0.0	0.0	0.0
Hair, Beauty & Personal	88.9	0.0	3.2	0.0	7.9
Recreation & Holidays	98.4	0.0	1.6	0.0	0.0
Motor Vehicle Purchases	98.4	1.6	0.0	0.0	0.0
Motor Vehicle Repairs	92.1	1.6	6.3	0.0	0.0
Medical care & Health	100.0	0.0	0.0	0.0	0.0
Education	84.1	1.6	4.8	0.0	9.5

**Table 5.3.3 Spending of Nebo residents in Mackay**

Category	% of responses in expenditure group				
	0-24	25-49	50-74	75-87	88-100
Food, Groceries & Alcohol	6.3	0.0	7.9	11.1	74.6
Clothing & Footwear	1.6	0.0	4.8	3.2	90.5
Furniture & Appliances	6.3	0.0	3.2	0.0	90.5
House & Garden	1.6	0.0	3.2	1.6	93.7
Hair, Beauty & Personal	15.9	0.0	9.5	0.0	74.6
Recreation & Holidays	27.0	7.9	11.1	7.9	42.9
Motor Vehicle Purchases	11.1	4.8	4.8	1.6	77.8
Motor Vehicle Repairs	6.3	1.6	7.9	0.0	84.1
Medical care & Health	6.3	0.0	3.2	0.0	90.5
Education	58.7	4.8	1.6	0.0	34.9

**Table 5.3.4 Spending of Nebo residents elsewhere**

Category	% of responses in expenditure group				
	0-24	25-49	50-74	75-87	88-100
Food, Groceries & Alcohol	92.1	4.8	0.0	1.6	1.6
Clothing & Footwear	93.7	3.2	1.6	1.6	0.0
Furniture & Appliances	96.8	0.0	1.6	1.6	0.0
House & Garden	96.8	1.6	1.6	0.0	0.0
Hair, Beauty & Personal	88.9	3.2	3.2	0.0	4.8
Recreation & Holidays	60.3	4.8	14.3	1.6	19.0
Motor Vehicle Purchases	79.4	1.6	6.3	3.2	9.5
Motor Vehicle Repairs	95.2	0.0	1.6	0.0	3.2
Medical care & Health	90.5	0.0	3.2	3.2	3.2
Education	84.1	1.6	0.0	1.6	12.7

The data has been summarised to estimate rates of expenditure in the different areas by category. The results are shown in Table 5.3.5, and demonstrated graphically in Figure 5.3.1. The data demonstrates that approximately 5.1% of discretionary consumption expenditure from Nebo residents is being retained within Nebo, 86.9% is being spent in the Mackay area, and 8.1% is being spent elsewhere.

**Table 5.3.5 Summary of spending by Nebo residents**

Category	Nebo	Mackay	Elsewhere	Total
	% of expenditure			
Food, Groceries & Alcohol	11.1	84.8	4.2	100.1
Clothing & Footwear	0.0	90.8	9.1	99.9
Furniture & Appliances	1.1	87.8	8.1	97.0
House & Garden	0.0	91.6	7.4	98.9
Hair, Beauty & Personal	14.7	77.9	7.1	99.8
Recreation & Holidays	1.1	59.8	39.2	100.1
Motor Vehicle Purchases	0.5	80.5	20.8	101.8
Motor Vehicle Repairs	10.0	85.3	4.9	100.2
Medical care & Health	0.0	87.8	13.0	100.8
Education	17.5	42.6	18.9	79.0
Total Expenditure	5.1	86.9	8.1	100.1

Note 1: Education not completed by many respondents because of lack of relevance to them.

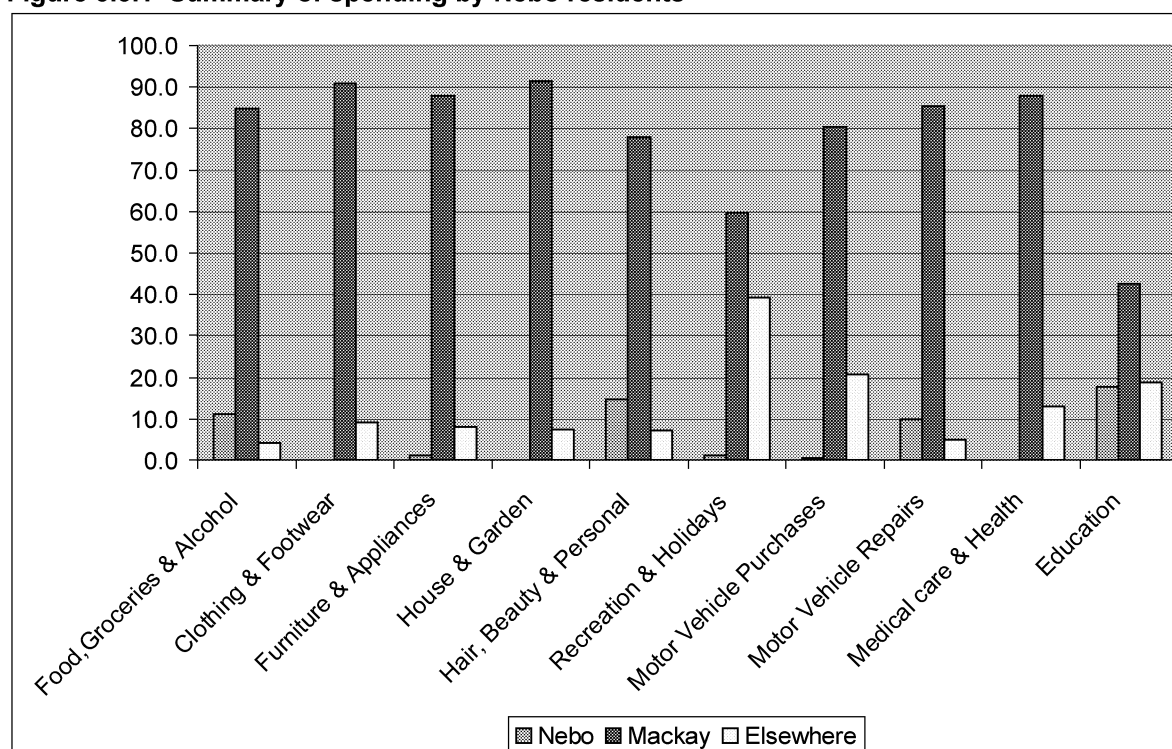
Note 2: Columns do not total 100% because of average values to indicate mid-points of ranges.

The expenditure results for the Nebo area can be used to generate estimates of the Marginal Propensity to Consume locally ( $MPC_L$ ). Average household expenditure for Queensland is

drawn from the ABS data (Table 5.3.6), and the proportion of expenditure in the Nebo Shire for each category is estimated. One-half of current housing costs are apportioned to the Nebo Shire, as this reflects the proportion of housing that is rented in the Shire (0.67) less an allowance for rental payments flowing to non-Shire residents. A proportion of 0.5 is estimated for household services, and a proportion of 0.3 is estimated for transport. Other estimates are drawn from the survey data. Results indicate that approximately 17% of total household expenditure occurs within the Shire. The proportion is expected to be lower for high income earners (because of higher tax and superannuation rates), and higher for the low income earners.

The results indicate that a proportion of 0.15 can be used to represent the Marginal Propensity to Consume locally (MPC<sub>L</sub>).

**Figure 5.3.1 Summary of spending by Nebo residents**



**Table 5.3.6 Estimates of total household expenditure in the Nebo Shire**

Broad expenditure group	Average expenses (\$) from ABS 1998-99 survey data	Percentage of total household expenses	Estimated proportion of category spent in Nebo Shire	Estimated proportion of expenditure in Nebo Shire
Current housing costs (selected dwelling)	96.99	11.6	0.500	0.058
Domestic fuel and power	12.99	1.6	0.000	0.000
Food and non-alcoholic beverages	116.88	14.0	0.111	0.016
Alcoholic beverages	18.96	2.3	0.111	0.003
Tobacco products	10.52	1.3	0.111	0.001
Clothing and footwear	25.89	3.1	0.000	0.000
Household furnishings and equipment	40.65	4.9	0.000	0.000
Household services and operation	40.85	4.9	0.500	0.024
Medical care and health expenses	29.93	3.6	0.000	0.000
Transport	107.46	12.9	0.300	0.039
Recreation	81.18	9.7	0.011	0.001
Personal care	12.01	1.4	0.147	0.002
Miscellaneous goods and services	54.69	6.6	0.100	0.007
<b>Total goods and services expenditure</b>	<b>648.99</b>	<b>77.8</b>		<b>0.150</b>
<b>Selected other payments</b>				
Income tax	142.12	17.0	0.000	0.000
Mortgage repayments-principal (selected dwelling)	24.29	2.9	0.000	0.000
Superannuation and life insurance	19.04	2.3	0.000	0.000
<b>Total expenditure</b>	<b>834.44</b>			
<b>Proportion of expenditure in Nebo Shire</b>				<b>0.150</b>

Source: ABS Cat. No. 6540.0 1998-99 Household Expenditure and Characteristics, by Household Income Quintile Group(a) - Queensland - 1998-99, and CQU survey data.

## 5.4 Expenditure Patterns of Residents in the Mackay Area

Information about expenditure patterns in the Mackay region was gathered to provide an estimate of the proportion of spending that was being retained in the region. Residents of the Mackay area were asked about the frequency of their shopping visits to Mackay. The results, shown in Table 5.4.1, demonstrate that 77% of respondents shop at least weekly.

**Table 5.4.1 Frequency of shopping visits by residents in Mackay area**

Frequency	% responses
Everyday	2.4
More than once a week	31.5
Once a week	43.5
Once a fortnight	12.9
Once a month	8.1
Can't say	0.8
Other	0.8
<b>Total</b>	<b>100.0</b>

The expenditure of Mackay area residents is summarised in Table 5.4.2. This shows high levels of local and regional expenditure exist, *except for Recreation and Holidays, Motor Vehicle Purchases, and Education.*

**Table 5.4.2 Spending of Mackay area residents in Mackay**

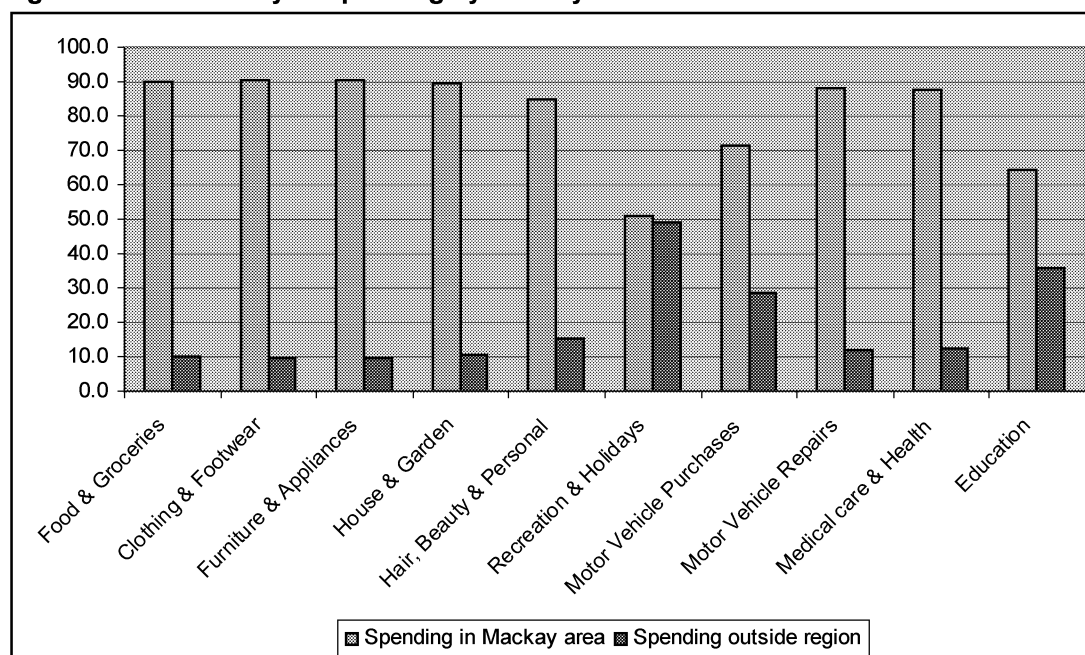
Category	0-24%	25-49%	50-74%	75-87%	88-100%
Food & Groceries	1.6	0.8	4.8	4.8	87.9
Clothing & Footwear	0	1.6	5.6	4.0	88.7
Furniture & Appliances	1.6	1.6	2.4	3.2	91.1
House & Garden	3.2	0.0	4.0	2.4	90.3
Hair, Beauty & Personal	8.9	0.8	1.6	2.4	85.5
Recreation & Holidays	38.7	6.5	18.5	1.6	33.1
Motor Vehicle Purchases	21	0.8	10.5	0.8	65.3
Motor Vehicle Repairs	4.8	0.8	1.6	2.4	89.5
Medical Care & Health	2.4	1.6	4.8	4.0	85.5
Education	26.6	2.4	4.8	2.4	58.9

The spending information has been summarised to generate estimates of the proportion spent in Mackay on each category (Table 5.4.3). The overall proportion estimated for expenditure (assuming equivalent spending across categories) is 87.8%. This implies that 12.2% of disposable income is spent outside the region.

**Table 5.4.3 Summary of expenditure estimates in Mackay**

Category	% expenditure
Food & Groceries	90.0
Clothing & Footwear	90.7
Furniture & Appliances	90.5
House & Garden	89.7
Hair, Beauty & Personal	84.7
Recreation & Holidays	50.9
Motor Vehicle Purchases	71.4
Motor Vehicle Repairs	87.9
Medical care & Health	87.5
Education	64.4
<b>Total Expenditure</b>	<b>87.8</b>

**Figure 5.4.1 Summary of spending by Mackay area residents**



The expenditure results for the Mackay area can be used to generate estimate of the Marginal Propensity to Consume regionally ( $MPC_R$ ). Average household expenditure for Queensland is drawn from the ABS data (Table 5.4.4), and the proportion of expenditure in the Mackay area for each category is estimated.

All domestic fuel and energy costs, 80% of current housing costs and 80% of miscellaneous costs are apportioned to the Mackay area. Transport expenditure in the area is estimated at 90% to allow for fuel and maintenance on top of vehicle purchase costs. Other estimates are drawn from the survey data. Results indicate that approximately 64.4% of total household expenditure occurs within the Mackay area. The proportion is expected to be lower for high income earners (because of higher tax and superannuation rates), and lower for the low income earners. The results indicate that a proportion of 0.644 can be used to represent the Marginal Propensity to Consume regionally ( $MPC_R$ ).

**Table 5.4.4 Estimates of total household expenditure in the Nebo Shire**

Broad expenditure group	Average expenses (\$) from ABS 1998-99 survey data	Percentage of total household expenses	Estimated proportion of category spent in Mackay area	Estimated proportion of expenditure in the Mackay area
Current housing costs (selected dwelling)	96.99	11.6	0.800	0.093
Domestic fuel and power	12.99	1.6	1.000	0.016
Food and non-alcoholic beverages	116.88	14.0	0.900	0.126
Alcoholic beverages	18.96	2.3	0.900	0.020
Tobacco products	10.52	1.3	0.900	0.011
Clothing and footwear	25.89	3.1	0.907	0.028
Household furnishings and equipment	40.65	4.9	0.905	0.044
Household services and operation	40.85	4.9	0.897	0.044
Medical care and health expenses	29.93	3.6	0.875	0.031
Transport	107.46	12.9	0.900	0.116
Recreation	81.18	9.7	0.509	0.001
Personal care	12.01	1.4	0.847	0.012
Miscellaneous goods and services	54.69	6.6	0.800	0.052
<b>Total goods and services expenditure</b>	<b>648.99</b>	<b>77.8</b>		<b>0.644</b>
<b>Selected other payments</b>				
Income tax	142.12	17.0	0.000	0.000
Mortgage repayments-principal (selected dwelling)	24.29	2.9	0.000	0.000
Superannuation and life insurance	19.04	2.3	0.000	0.000
<b>Total expenditure</b>	<b>834.44</b>			
<b>Proportion of expenditure in Mackay Area</b>				<b>0.644</b>

Source: ABS Cat. No. 6540.0 1998-99 Household Expenditure and Characteristics, by Household Income Quintile Group(a) - Queensland - 1998-99, and CQU survey data.

## 5.5 Summary of Spending by Businesses in Nebo

In order to fully identify the multiplier impacts of increased spending in the Nebo region, it is necessary to identify the proportion of local consumption expenditure that becomes local income. In other words, this means identifying the proportion of business expenses that are sourced locally (e.g. for labour or supplies), compared to being supplied from outside the region. To identify this proportion, a number of businesses in Nebo were asked about where they sourced their business inputs.

A total of 18 businesses from Nebo and Coppabella were surveyed in March 2003, using personal interviews. The larger businesses that were likely to employ labour were selected for the interviews. A copy of the survey used is attached as an appendix.

The average number of people working in businesses in Nebo is reported in Table 5.5.1. The bulk of employees were associated with accommodation and food service businesses.

**Table 5.5.1 Number of people working in Nebo businesses**

Category	Average number
Owners	1.20
Full-time employees	3.44
Part-time employees	1.28
Casual employees	4.11

Businesses were asked to identify how the numbers of staff employed changed over the last two and five years. For the past two years, two businesses reported a decline, ten businesses indicated an increase, and two businesses reported a decline in one category offset by an increase in another one. Between the past five years and two years, very little change in staff numbers was reported. The average increase in employment numbers over the past two years by category is reported in Table 5.5.2. This represents a 32% increase in average staff numbers over the relevant period.

**Table 5.5.2 Average change in staff employment over past 2 years**

Staff changes	Average number
Increase in FT staff from 2 years ago	1.17
Increase in PT staff from 2 years ago	0.83
Increase in Casual staff from 2 years ago	0.82

Business respondents were asked to identify the proportion of their expenditure by broad groupings. A summary of results is reported below in Table 5.5.3. These show that approximately 23.5% of business expenses may become income to other businesses or households in the Nebo Shire. This is made up of wages and local supplies purchased by businesses in Nebo.

**Table 5.5.3 Percentage of business expenses by category**

Expenditure item	% of business expense
Wages	21.8
Supplies from Nebo	1.7
Supplies from Mackay	34.6
Supplies from other Qld	20.4
Rest of Business Expenses	22.0

Another question in the survey asked businesses if the opening of the coal mines had affected their business. Out of the 18 businesses surveyed, 16 (89%) indicated that it had. Responses are summarised in the table below.

**Table 5.5.4 Impact of coal mines on businesses**

Responses
Yes - more mines more work ; lost some big runs to the competition; increased competition undercutting
Dramatically; wouldn't be there without mines 99.9% of business
No affect on rural business
Yes from Coppabella Mine, 80% from Coppabella
Totally dependent on mines for work; have huge impact
Yes - very close to here; Donga Camp support the business
Yes increased amount of work we do; no increased profitability due to increased purchase of equipment to allow for growth
Employment from 2 mines
Yes - service the support industry itself - subcontractors - not from the mines
Yes it has - because allowed accommodation - so been good for her
To a certain degree - Hail Creek benefit then Goonyella Riverside, South Walker bit of work in 1997 changed ways - plant equipment small gear diversified into graders
Yes no 80 man camp if not for mines; hope to go to 160 after Easter 2003 more plans to come as a hotel resort set up golf course, tennis court - to be used also as a resort areas camping caravans.
Extremely - from little pub to very busy pub. A lot of business from Coppabella. Long term contractors live in Nebo, and money is spent in community
Yes, not to point expected it would; expected more in motel
Yes increase the amount of work more activity than 5 years ago - if not for coal mines would be nothing
Most work in winter is the mine
Yes service the coal mines with accommodation

Business operators were then asked which mines supplied most of their business. Coppabella was nominated first by eight businesses (50% of those gaining business from the mines), Hail Creek 3 times, South Walker 2 times, and North Goonyella and Burton were nominated once each. The conclusion to be drawn is that the Coppabella Mine is the most important one in terms of supporting businesses in Nebo.



**Table 5.5.5 Mines providing most custom for businesses**

Responses
Coppabella Mines
Coppabella / Moorvale
None for Rural Business
Coppabella
South Walker Creek mine
Coppabella
Hail Creek; Newlands
North Goonyella; Burton
Burton
Hail Creek
Hail Creek until production; then have own contractors, South Walker earlier on 2 years ago
Coppabella 90% of Coppabella Accommodation
Coppabella APC encourage companies to use Nebo (rather than Mackay) makes big difference to little town
Difficult to say – all use as needed
South Walker major - Coppabella small amount
None
Coppabella; South Walker mine
Coppabella then Hail Creek; then South Walker

In the final question of the survey, businesses were asked about what action could be taken to help support businesses in Nebo and Coppabella. The responses are summarised below. The main responses are to locate more contractors and workers in Nebo and Coppabella, to increase spending and give more contracts to the local businesses, and to pay accounts more quickly.

**Table 5.5.6 Actions that would be beneficial for businesses**

Responses
Using us in the local area not going to Mackay
Closer liaison with information about shutdown work and new contract work to allow forward planning for accommodation e.g. BHP puts out a schedule 180 months in advance of their needs
Not for rural business
No
Pay quicker 14 days of invoice - external workers of their system to pay up within 14 days
Mines would like their men there but most at Nebo - Moranbah. Because of Council not prepared to open area up
Buy and use local (Closer mines do not use us at all)
Using qualified refrigeration/airconditioning people - mines letting electricians do your trade
Allow us to tender for supply contracts in area - tends to be a close shop; inability to find staff - no accommodation; lack of infrastructure (sewerage); can't compete with labour for mines.
Put some workers there in dongas - more than 10 mins from Nebo - too far for them
All [mines] could help if want to - [we] have water cart but [mines] use big company. If not clicked into the right group - no work available
Accommodation - make more rooms available could fill them no problems
Keep encouraging different contractors to live in Nebo
Spend money here - township here as Glenden so miners and work do not go to other centres
Give local (smaller) operators a chance to get work - beneficial to this area
Need support from Mining Companies
Pay accounts sooner - monthly rather than 90 days.
Any extensions will help business

## 5.6 Discussion and Conclusions

The main focus of the material presented in this chapter has been to identify what the indirect impacts of spending from the Coppabella mine are on the Nebo Shire. A simple formulation of the Keynesian income multiplier was described in section 5.2 as follows (where  $k$  stands for the multiplier):

$$k = 1/(1 - MPC_L \times PSY)$$

Where:

$MPC_L$  is the marginal (or average) propensity to consume locally, or the proportion of income (or income change) which is spent locally,

and

$PSY$  is the proportion of local consumption expenditures that eventually becomes local income, i.e. local salaries and wages, profits and interest payments. It is an expression of the proportion of each dollar spent locally which ends up in the pockets of the local community rather than paying for imported goods and services (Jensen & West 2002, pp. 13-16).

In Section 5.3, the  $MPC_L$  for residents in the Nebo area was identified as 0.15. This was heavily influenced by a high proportion of rental income which was assumed to flow to local residents. The propensity to consume locally on more discretionary items was much lower.

In Section 5.5, the  $PSY$  for businesses in the Nebo and Coppabella townships was estimated at 0.235. This is heavily influenced by a high proportion of expenditure on labour, which was assumed to be drawn totally from local residents.

Substitution of those rates allows the multiplier to be calculated as follows:

$$k = 1/(1 - 0.15 \times 0.235)$$

$$k = 1.0366$$

This means that for every dollar of additional income or expenditure being introduced to Nebo, the additional income that is created is 3.66 cents. The smallness of the multiplier effect is particularly affected by the low propensity of people in the Nebo area to purchase goods and services in Nebo and Coppabella. As wages are approximately 22% of business expenses, the additional expenditure that is created for every dollar that is spent is approximately 16.6 cents.

Using these rates, the total economic impact of the Coppabella Mine can be summarised as follows. Total additional spending in the Shire is estimated at \$8.284 Million, with \$5.35 Million flowing to Shire residents as increased income.

**Table 5.6.1 Total economic impact of the Coppabella Mine on the Nebo Shire**

	Total Economic Impact (\$ Million)	Net addition to incomes (\$ Million)
Direct wage expenditure	4.510	4.510
Expenditure from miners not living in area	1.715	0.385
Contracted services and supplies from businesses	0.282	0.062
Miscellaneous services and supplies from businesses	0.595	0.131
Indirect impacts	1.182	0.260
<b>Total</b>	<b>8.284</b>	<b>5.350</b>

## 6.0 ECONOMIC IMPACT ANALYSIS USING INPUT-OUTPUT ANALYSIS *(This section supplied by AECgroup)*

### 6.1 Introduction

Activities and operations such as the Coppabella Mine generate economic benefits for the local and regional economy through expenditure associated with the activity that would otherwise not have occurred. This section outlines an input-output analysis that was used to determine the economic impact of the Coppabella Mine on the Mackay statistical division (Mackay region) and on Nebo Shire.

### 6.2 Approach

Net expenditure due to the mine is allocated across the relevant industry sectors and applied to the input-output model of the regional economy. This analysis utilised the Mackay regional input-output table GSO (1990) to identify the expected impact on the Mackay region as well as Nebo Shire<sup>2</sup> with West (1993) used to manipulate the data within the Mackay regional table.

The stimulus from additional economic activity<sup>3</sup> can be traced through the economic system in several different ways:

- The first round effect, or direct effect, are those from the mine's expenditure in purchasing goods from other industries.
- The second round effects are those from the supplying industries increasing their purchases to meet the additional demand. The second and subsequent rounds of purchasing are termed the indirect effects.

These effects can be represented by multipliers. There are commonly four different types of multipliers; output, income, employment and value added, which can be calculated in aggregate for the whole economy or on an industry by industry basis.

#### 6.2.1 Output

The output impact measures the increase in gross sales throughout the whole economy by summing all the individual transactions resulting, directly and indirectly, from the economic

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<sup>2</sup> There is no Nebo Shire input-output table so the analysis has utilised the Mackay region input-output table as a proxy for Nebo Shire. This assumes that the relationships/transactions between industry sectors in Nebo Shire is the same as those for the Mackay Region.

<sup>3</sup> Consumption impacts have not been included in this analysis as they are generally expected to overestimate the actual impact.

stimulus. The output impact is also useful in providing an indication of the degree of structural dependence between sectors of the economy. The output impacts, are however, regarded as overstating the impact on the economy as they count all goods and services used in one stage of production as an input to later stages of production, hence counting their contribution more than once.

### **6.2.2 Income**

The income impact measures the additional amount of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the stimulus to the economy.

### **6.2.3 Employment**

The employment impact measures the number of jobs created by the stimulus, both directly and indirectly. It should be noted that the short-term response to increased demand may be for employers to ask existing staff to work overtime. As a consequence, lower employment than the level indicated by the economic impact of the stimulus will result. This short-term scenario is particularly true where the demand stimulus is seen as temporary or where there is spare capacity in the economy (i.e. unemployment). This is not the case with the Coppabella Mine as it is a long-term operation.

### **6.2.4 Value Added**

The value added or Gross Regional Product (GRP) impact measures only the net activity at each stage of production. GRP is defined as the addition of consumption, investment and government expenditure, plus exports of goods and services, minus imports of goods and services for a region. The GRP impacts are the preferred measure for the assessment and contribution of a stimulus to the economy.

## **6.3 Limitations**

Limitations or qualifiers that should be raised when using input-output analysis include:

- The inputs purchased by each industry are a function only of the level of output of that industry. The input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs).
- Each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies that there is only one method used to produce each commodity and that each sector has only a single primary output.

- The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the additivity assumption. This generally does not reflect real world operations.
- The system is in equilibrium at given prices. This is obviously not the case in an economic system subject to external influences.
- In the static input-output model, there are no capacity constraints so that the supply of each good is perfectly elastic. Each industry can supply whatever quantity is demanded of it and there are no capital restrictions. This assumption would come into play depending upon the magnitude of the changes in quantities demanded, brought about through changes in taxation levels.

Input-output techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and hence are an appropriate tool for determining the direct and indirect economic impact of the Coppabella Mine.

## 6.4 Data Used

The operating and capital expenditures used in the input-output modelling for the Mackay Region and Nebo Shire are outlined in Table 6.4.1.

**Table 6.4.1. Annual Operating and Capital Expenditure in Mackay region and Nebo Shire of the Coppabella Mine (\$M)**

Description	Mackay Region	Nebo Shire
Operating Expenditure		
Labour	\$35.5	\$4.5
Parts, tyres, repairs	\$39.1	\$0.3
Fuel	\$14.2	\$0.1
Electricity	\$3.0	\$0.0
Explosives	\$10.6	\$0.1
Fixed costs	\$44.4	\$0.4
Railway and Port <sup>(a)</sup>	\$42.0	\$0.0
Capital Expenditure		
Capital Works	\$18.0	\$0.5
Exploration	\$2.0	\$0.1
<b>Total</b>	<b>\$208.7</b>	<b>\$6.0</b>

<sup>(a)</sup> There would be some railway charges that would occur within Nebo Shire (labour and lodging expenses of Rail personnel) however the proportion attributable to the Coppabella Mine is likely to be very small given that there are a number of other mines in the region and has been assumed to approximate zero. Source: CQU, 2003.

Survey work undertaken by staff at the Central Queensland University (CQU) identified the expenditure patterns of workers that live outside of Nebo Shire when they are in Nebo Shire on shift work (Table 6.4.2).

**Table 6.4.2 Annual Expenditure of Shiftwork Miners who live outside of the Study Area expenditure within Mackay and Nebo Shires (\$M)**

Description	Mackay Region <sup>(a)</sup>	Nebo Shire <sup>(b)</sup>
Accommodation	\$0.085	\$0.53
Food	\$0.042	\$0.26
Alcohol <sup>(c)</sup>	\$0.074	\$0.46
<i>Beer and Malt</i>	\$0.037	\$0.23
<i>Wine and Spirits</i>	\$0.037	\$0.23
Fuel	\$0.048	\$0.30
Car	\$0.008	\$0.05
Entertainment	\$0.012	\$0.08
Other	\$0.005	\$0.03
<b>Total</b>	<b>\$0.2700</b>	<b>\$1.71</b>

<sup>(a)</sup> These figures include only those miners who live outside the Mackay region who work as shift workers at the Coppabella Mine. The expenditure of miners that live within the Mackay region is captured by the labour component of the input-output model.

<sup>(b)</sup> These figures include only those miners who live outside Nebo Shire who work as shift workers at the Coppabella Mine. The expenditure of miners that live within Nebo Shire is captured by the labour component of the input-output model.

<sup>(c)</sup> Expenditure on alcohol was split between the beer and malt and the wine and spirits sectors.

The sectors of the input-output model that were used for this analysis include:

- Agriculture
- Mining
- Manufacturing
- Electricity, Gas and Water Supply
- Construction
- Trade
- Transport
- Communication, Finance, Property and Business Services
- Government Administration and Defence and
- Community, Recreation and Personal Services.

## 6.5 Economic Impacts

The expenditure figures detailed in Tables 6.4.1 and 6.4.2 were allocated to the appropriate industrial sectors of the 32 sector input-output table. The resulting allocations of the total direct expenditure within the Mackay region due to the Coppabella Mine is estimated at \$209.0 million with \$7.7 million of that spent within Nebo Shire (Table 6.5.1).

**Table 6.5.1 Annual Allocation of Net Expenditure to Industrial Sectors (\$M)**

No	Industrial Sector	Mackay	Nebo Shire
1	Agriculture	\$0.00	\$0.00
2	Mining	\$81.90	\$4.93
3	Manufacturing	\$10.70	\$0.60
4	Electricity, Gas and Water Supply	\$3.00	\$0.02
5	Construction	\$18.00	\$0.54
6	Trade	\$53.40	\$1.52
7	Transport	\$42.00	\$0.00
8	Communication, Finance, Property and Business Services	\$0.00	\$0.00
9	Government Administration and Defence	\$0.00	\$0.00
10	Community, Recreation and Personal Services	\$0.00	\$0.11
<b>Total</b>		<b>\$209.00</b>	<b>\$7.73</b>

Source: AECeconomics

## 6.5.1 Aggregate Economic Impact

Applying the above expenditure amounts as final demand shocks to the input-output table results in direct and indirect economic impacts as detailed in Tables 6.5.1.1 and 6.5.1.2 for Nebo Shire and the Mackay region respectively.

**Table 6.5.1.1 Estimated Economic Impacts of Coppabella Mine on Nebo Shire**

	Output (\$ M 2000-01)	Income (\$ M 2000-01)	Employment (FTE persons)	Value added (\$ M 2000-01)
Direct	\$7.7	\$4.5	36	\$4.7
Indirect	\$3.0	\$0.6	26	\$1.3
<b>Total</b>	<b>\$10.7</b>	<b>\$5.1</b>	<b>62</b>	<b>\$6.0</b>

FTE = Full-time-equivalent employment positions. Source: AECeconomics.

The economic impacts associated with the Coppabella Mine on Nebo Shire include:

- An increase in estimated direct output of \$7.7 million, and additional flow on increases in output of \$3.0 million through other industries
- An increase in estimated direct income (wages and salaries) of \$4.5 million, with an additional \$600,000 in income through flow on effects in other industries
- A sustained increase of 36 direct full-time equivalent employees, with an estimated additional 26 jobs gained indirectly through other industries and
- An estimated increase in GSP of \$4.9 million from direct effects, with a further flow on impact of \$1.3 million through other industries.

**Table 6.5.1.2 Estimated Economic Impacts of Coppabella Mine on Mackay Region**

	Output (\$ M 2000-01)	Income (\$ M 2000-01)	Employment (FTE persons)	Value added (\$ M 2000-01)
Direct	\$209.0	\$35.5	283	\$129.3
Indirect	\$80.6	\$20.3	500	\$39.9
<b>Total</b>	<b>\$289.6</b>	<b>\$55.8</b>	<b>783</b>	<b>\$169.2</b>

FTE = Full-time-equivalent employment positions. Source: AECeconomics.

The economic impacts associated with the Coppabella Mine on the Mackay region include:

- An increase in estimated direct output of \$209.0 million, and additional flow on increases in output of \$80.6 million through other industries or approximately 4.6% of Mackay's total output
- An increase in estimated direct income (wages and salaries) of \$35.5 million, with an additional \$20.3 million in income through flow on effects in other industries, which approximates 3.6% of Mackay's wages and salaries
- A sustained increase of 283 direct full-time equivalent employees, with an estimated additional 500 jobs gained indirectly through other industries, which approximates 1.6% of Mackay's employment and
- An estimated increase in GSP of \$129.3 million from direct effects, with a further flow on impact of \$39.9 million through other industries, which approximates 5.0% of Mackay's total value added production.

## 6.5.2 Economic Impact by Sector

The economic impact was aggregated for all industries in the previous section. This section examines the economic impact of the Coppabella mine when aggregated to the 10 major industry sectors in Tables 6.5.2.1 and 6.5.2.2 for Nebo Shire and the Mackay region respectively.

The key industries to be impacted by the Coppabella Mine in Nebo Shire include the:

- Mining sector with 58.1% of total value added and 54.7% of income and
- Trade sector with 38.6% of employment and 23.9% of income.

The key industries to be impacted by the Coppabella Mine in the Mackay region include the:

- Mining sector with 35.7% of value added production\ and 30% of output
- Trade sector with 30.9% of employment and 25.3% of income
- Transport sector 22.9% of income and 19.0% of value added production and
- Communication, finance, property and business services sector<sup>4</sup> with 17.1% of employment.

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<sup>4</sup> Has a relatively large flow on employment component.



**Table 6.5.2.1 Estimated Economic Impacts of Coppabella Mine on Nebo Shire by Sector**

No.	Sector Description	Output (2001-02)		Income (2000-01)		Employment (FTE persons)		Value added (2000-01)	
		Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>
1	Agriculture	\$0.4	3.8%	\$0.0	0.5%	\$4.0	5.8%	\$0.2	3.6%
2	Mining	\$5.1	48.0%	\$2.8	54.7%	\$12.0	19.2%	\$3.5	58.1%
3	Manufacturing	\$1.0	9.3%	\$0.3	5.4%	\$5.0	7.7%	\$0.2	4.0%
4	Electricity, Gas and Water Supply	\$0.2	2.2%	\$0.0	0.5%	\$1.0	1.2%	\$0.1	1.8%
5	Construction	\$0.6	5.3%	\$0.4	7.0%	\$4.0	5.9%	\$0.3	4.4%
6	Trade	\$1.9	17.6%	\$1.2	23.9%	\$23.0	36.8%	\$1.0	16.9%
7	Transport	\$0.4	3.6%	\$0.1	1.6%	\$3.0	5.0%	\$0.2	3.4%
8	Communication, Finance, Property and Business Services	\$0.6	5.9%	\$0.2	3.5%	\$6.0	9.3%	\$0.3	4.6%
9	Government Administration and Defence	\$0.1	0.9%	\$0.0	0.7%	\$1.0	1.3%	\$0.0	0.8%
10	Community, Recreation and Personal Services	\$0.3	3.3%	\$0.1	2.2%	\$5.0	7.9%	\$0.2	2.6%
<b>Total</b>		<b>\$10.7</b>	<b>100.0%</b>	<b>\$5.1</b>	<b>100.0%</b>	<b>\$62.0</b>	<b>100.0%</b>	<b>\$6.0</b>	<b>100.0%</b>

<sup>(a)</sup> Percentage of the overall total impact to Nebo Shire.

**Table 6.5.2.2 Estimated Economic Impacts of Coppabella Mine on Mackay Region by Sector**

No.	Sector Description	Output (2001-02)		Income (2000-01)		Employment (FTE persons)		Value added (2000-01)	
		Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>	Total (\$M)	% <sup>(a)</sup>
1	Agriculture	\$2.7	0.9%	\$0.3	0.5%	\$16.0	2.1%	\$1.5	0.9%
2	Mining	\$87.0	30.0%	\$12.7	22.7%	\$46.0	5.9%	\$60.4	35.7%
3	Manufacturing	\$21.4	7.4%	\$2.5	4.5%	\$57.0	7.2%	\$6.8	4.0%
4	Electricity, Gas and Water Supply	\$10.6	3.6%	\$1.0	1.8%	\$19.0	2.4%	\$5.0	3.0%
5	Construction	\$19.0	6.6%	\$3.4	6.0%	\$29.0	3.7%	\$9.2	5.4%
6	Trade	\$66.4	22.9%	\$14.1	25.3%	\$253.0	32.3%	\$39.1	23.1%
7	Transport	\$52.1	18.0%	\$12.8	22.9%	\$147.0	18.8%	\$32.2	19.0%
8	Communication, Finance, Property and Business Services	\$19.3	6.6%	\$5.4	9.6%	\$119.0	15.2%	\$9.6	5.7%
9	Government Administration and Defence	\$4.1	1.4%	\$1.7	3.1%	\$24.0	3.0%	\$2.0	1.2%
10	Community, Recreation and Personal Services	\$7.0	2.4%	\$2.0	3.5%	\$73.0	9.4%	\$3.5	2.1%
<b>Total</b>		<b>\$289.6</b>	<b>100.0%</b>	<b>\$55.8</b>	<b>100.0%</b>	<b>\$783.0</b>	<b>100.0%</b>	<b>\$169.2</b>	<b>100.0%</b>

<sup>(a)</sup> Percentage of the overall total impact to the Mackay region.

## 7.0 THE POTENTIAL FOR ECONOMIC ACTIVITY WITHIN THE NEBO SHIRE TO BE ENHANCED

Households and businesses in the Nebo Shire capture more than \$7.1 Million in direct income from the Coppabella Mine, which represents approximately 3.6% of mine expenditure within the region. There are several reasons why the region does not capture a bigger share of mine expenditure, or benefit from secondary impacts of expenditure. These include:

- The current small economic base of the region and the lack of business services
- The proximity to Mackay, which tends to be a service centre for the northern part of the Bowen Basin
- The scale of business needed to be an efficient supplier to mining companies, and
- The preference of mining families to locate in regional and coastal centres rather than in smaller communities.

One key opportunity for the Nebo Shire to benefit from the expansion in mining activities is to encourage more families to locate within the Shire. Questions on this issue have been included in the survey presented to miners (described in section 4), and are reported below.

### 7.1 Community Involvement and Preferred Residence Area

In the survey of miners, they were asked some questions about their involvement with the community in the Nebo Shire, as well as questions about where they would like to live. These responses are summarised in this section. In one question, miners were asked to indicate what their work pattern was. The results are summarised in Table 7.1.1 below.

**Table 7.1.1 Work patterns of respondents to miner's survey**

Work Pattern	Number of responses	% of responses	Estimated number of workers across mine site
Work on shift work roster	96	72.2	242
Work regular hours (eg Mon – Fri)	33	24.8	83
Other work pattern	4	3.0	10

Miners were also asked about their commuting patterns to the mine site. These results are presented in Table 7.1.2, while a more specific breakup of miners commuting from their home each day is presented in Table 7.1.3.

**Table 7.1.2 Commuting patterns of respondents to miner's survey**

Commuting patterns	Number of responses	% of responses
Stay at your main home and commute to the mine each day	37	27.82
Stay in camp at Coppabella and commute to the mine each day	33	24.81

Stay in camp at Nebo and commute to the mine each day	24	18.05
Stay in other accommodation in Nebo and commute to the mine each day	26	19.55

**Table 7.1.3 Miners who travel from home each day to work**

Town	Number of responses	% of responses	Expected total number
Mackay	3	2.26	8
Sarina	4	3.01	10
Nebo	5	3.76	13
Moranbah	25	18.80	63
<b>Total</b>	<b>37</b>	<b>27.82</b>	<b>93</b>

In addition, Miners were asked about their current levels of involvement with the Nebo community, and responses are summarised in Table 7.1.4. There are low levels of involvement apart from general entertainment, and some use of Nebo Shire services.

**Table 7.1.4 Involvement of Coppabella miners with Nebo community**

Involvement category	Number of responses	% of responses
Played in sporting events	6	4.51
Attended sporting events	10	7.52
Participated in cultural events	2	1.50
Attended cultural events	12	9.02
Attended general entertainment events	50	37.59
Used medical services	1	0.75
Used emergency services	10	7.52
Used educational services	2	1.50
Used Nebo Shire Council services	18	13.53

When miners were asked if they would like to move to a main town of residence closer to the mine site, 26% indicated that they would, 70% indicated that they would not, and 4% were undecided. Results are shown for this question, but excluding those miners already living at Coppabella or Nebo.

**Table 7.1.5 Miners who would like to move closer to Coppabella Mine**

Like to move closer to Coppabella Mine?	Region where main residence is located			Total
Like to move closer?	Mackay	Other part of Mackay region	Outside of Mackay region	
Yes	8	14	7	29
No	48	25	9	82
No answer	3	1		4
<b>Total</b>	<b>59</b>	<b>40</b>	<b>16</b>	<b>115</b>

There are approximately 70% of miners (245 people) who are located outside of easy commuting distance from the Coppabella Mine. If 29% of these employees were to move closer, this equates to 69 employees. In a subsequent survey question, miners were asked to indicate the main reasons for their answers about moving closer. When only the housing issue responses are considered, the number of employees who might move closer drops to approximately 47.

**Table 7.1.6 Reasons for not moving closer to Coppabella Mine**

Reason for not moving closer if they indicated a wish to do so	Number of responses (out of 29)
Lack of housing for rental	16

Lack of housing for purchase	4
Educational facilities for children	6
Job opportunities for partner	8
Family do not want to move	4
Other (reasons given below)	8
<i>Family do not want to move; Educational Opportunities for children; Recreational /entertainment facilities;</i>	
<i>Prefer living in a bigger centre</i>	
<i>Lack of campsite</i>	
<i>Local business house's seem to inflate prices where ever mining personal reside</i>	
<i>No boat ramps</i>	
<i>no reasonable accommodation</i>	
<i>Partner has job</i>	
<i>Prefer Living in a Bigger Centre (3 responses)</i>	
<i>Shopping &amp; Sporting Recreational Facilities</i>	
<i>Will be moving in next 12 months</i>	

**Table 7.1.7 Reasons for not wanting to move closer to the Coppabella mine**

Reason for not wanting to move closer	Number of responses (out of 82)
Partner has job	19
Family do not want to move	36
Educational facilities	23
Recreation/entertainment facilities	21
Prefer living in a bigger centre	29
Other (reasons given below)	31
<i>Based out of Rockhampton</i>	
<i>Closer to ocean</i>	
<i>Have land in Mirani</i>	
<i>Have own house at Sarina</i>	
<i>I am single</i>	
<i>I go to Uni there – not a permanent worker here</i>	
<i>I stay at Nebo when on shift</i>	
<i>Isn't anywhere to live</i>	
<i>Job Opportunities for Partner</i>	
<i>Lack of housing for rental</i>	
<i>Lack of housing for rental</i>	
<i>Lack of shopping facilities &amp; medical services etc.</i>	
<i>Like where I am</i>	
<i>Medical Facilities inadequate e.g. dental etc.</i>	
<i>Moranbah is bigger than Nebo/Coppabella</i>	
<i>Nebo is a hole</i>	
<i>No closer place</i>	
<i>Sport Facilities and clubs for children; no child minding facility; lack of shopping facilities</i>	
<i>Sunshine Coast has more to offer</i>	

## 7.2 The Potential for Expanding Business Opportunities

Economic development is normally maximized when private businesses are allowed to pursue commercial business opportunities. The role of government is normally focused on:

- providing the rules for businesses to operate in
- ensuring equity and social justice outcomes are achieved
- providing public goods
- minimizing negative externalities (spillover effects)

- ensuring business and infrastructure is planned carefully, and
- encouraging regional development goals to be met.

On this basis, the role of commonwealth, state and local government should largely be focused on encouraging a suitable climate for businesses to operate in. Ensuring that appropriate infrastructure exists, that a skilled workforce with appropriate training opportunities is available, and that the region has services available for people to live in are some of the key functions of government at different levels.

It is clear from the responses to the business survey (section 5.5) that there has already been significant take-up of business opportunities resulting from the development of the mines in the area. It is likely that there has been some corresponding reduction in local expenditure by local residents and the grazing industry as people have become more mobile and tended to source their supplies from larger centres. This means that although businesses have not grown exponentially, it appears from the survey results that mining may be more important than grazing in supporting local businesses in the Nebo township. Income from mining related activities may have substituted for reduced expenditure from other sources (which may have been exacerbated by the 2001-2002 drought in the area).

The bulk of business activities appear to be in supplying food and accommodation requirements to mine and contractor employees. There is likely some potential for this to increase further, with supply of additional recreation and other personal services. The supply of more direct mining services will remain constrained by the proximity of Nebo to Mackay, and the benefits that many companies find in locating in regional centres.

It is often difficult for small and medium sized businesses (SMEs) to supply larger enterprises, such as mining companies. There are several reasons for this, including the increased trends towards nationally competitive purchasing, supply chain management and tight supply times for goods and services. However, the trends towards contracting services in the coal mining industry means that there may be increased opportunities for SMEs to service these contracting firms.

## 8.0 CONCLUSIONS

In this report the economic impact of the Coppabella Mine on the Nebo Shire and wider Mackay region has been detailed in several ways. The resulting information can be summarised into several key outcomes.

Total operating expenses of the mine are approximately \$230 Million per annum, of which \$192.6 Million can be attributed to expenditure in the region. There are further \$20 Million in development costs per annum which may also impact on regional economic activity. From the operating expenditure, it is estimated that \$5.4 Million is directly expended in the Nebo Shire as wages, contracted services and miscellaneous costs (Table 4.3.1). A further \$1.7 Million is captured from miners who do not live in the Nebo Shire but spend some money there while working at the mine.

**Table 4.3.1 Summary of direct spending flows into region from Coppabella Mine**

	Nebo Shire (\$ Million)	Mackay Area (\$ Million)	Rest of Mackay region (\$ Million)
Direct wage expenditure	4.51	15.09	15.87
Expenditure from miners not living in area	1.715	0	0
Contracted services and supplies from businesses	0.282	Not assessed	Not assessed
Miscellaneous services and supplies from businesses	0.595	11.687	0.331
<b>Total</b>	<b>7.102</b>	<b>26.777</b> (excluding contracted services)	<b>16.201</b> (excluding contracted services)

The secondary economic impacts on the Shire can be estimated by firstly calculating the marginal propensity to consume local goods and services, and secondly to calculate the proportion of business inputs that are sourced locally. The first has been calculated from survey information at 15%, while the second has been calculated from interviews with business at 23.5%. The resulting multiplier for incomes that has been estimated is 3.66%. This means that the net additions to incomes are assessed at \$260,000. This is approximately 22% of business spending, so the total additional turnover that is generated is approximately \$1.18 Million, bringing the total economic impact of the Coppabella Mine to \$8.28 Million (Table 5.6.1).

**Table 5.6.1 Total economic impact of the Coppabella Mine on the Nebo Shire**

	Total Economic Impact (\$ Million)	Net addition to incomes (\$ Million)
Direct wage expenditure	4.51	4.51
Expenditure from miners not living in area	1.715	0.385
Contracted services and supplies from businesses	0.282	0.062
Miscellaneous services and supplies from businesses	0.595	0.131
Indirect impacts	1.182	0.260
<b>Total</b>	<b>8.284</b>	<b>5.35</b>

An input-output study to estimate the impact of the mine on the local economy predicts that expenditure levels from the Coppabella Mine will be higher, but that the share of total incomes will be lower. Total additional expenditure is assessed at \$10.7 Million, while

the total increase in income is assessed at \$5.1 Million (Table 6.5.1.1). The total effect on employment in the Shire is assessed at 62 additional jobs.

**Table 6.5.1.1 Estimated Economic Impacts of Coppabella Mine on Nebo Shire**

	Output (\$ M 2000-01)	Income (\$ M 2000-01)	Employment (FTE persons)	Value added (\$ M 2000-01)
Direct	\$7.7	\$4.5	36	\$4.7
Indirect	\$3.0	\$0.6	26	\$1.3
<b>Total</b>	<b>\$10.7</b>	<b>\$5.1</b>	<b>62</b>	<b>\$6.0</b>

FTE = Full-time-equivalent employment positions. Source: AECeconomics.

An input-output study to estimate the impact of the mine on the Mackay region economy predicts that total additional expenditure from the Coppabella Mine is \$289.6 Million, while the total increase in income is assessed at \$55.8 Million (Table 6.5.1.2). The total effect on employment in the Mackay region is assessed at 783 additional jobs.

**Table 6.5.1.2 Estimated Economic Impacts of Coppabella Mine on Mackay Region**

	Output (\$ M 2000-01)	Income (\$ M 2000-01)	Employment (FTE persons)	Value added (\$ M 2000-01)
Direct	\$209.0	\$35.5	283	\$129.3
Indirect	\$80.6	\$20.3	500	\$39.9
<b>Total</b>	<b>\$289.6</b>	<b>\$55.8</b>	<b>783</b>	<b>\$169.2</b>

FTE = Full-time-equivalent employment positions. Source: AECeconomics.

Eighty-nine percent (89%) of businesses in Nebo and Coppabella identify the mining industry as being very important to their business. The Coppabella Mine provides the most custom to local businesses, with half of the latter identifying Coppabella Mine as the major source of their mining related business.

The average number of employees per business has risen by 2.8 persons over the previous two years, representing a 32% increase. Most of the increases have been in businesses which provide accommodation or other services to the mining industry (Table 3.2).

There is some interest from mine workers based outside of the area in relocating closer to the Coppabella Mine. It was estimated that 19% of those mine workers would be interested in relocating closer. This represents 45 workers from the 245 estimated to be based outside of the Nebo Shire.

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**Economic and Social Impacts  
of the Coppabella Mine  
on the Nebo Shire  
and the Mackay Region**

**PART III: Social Impacts Study**

**Central Queensland University**

**April 2003**

## **PART III: Social Impacts Assessment**

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## 1.0 INTRODUCTION

### 1.1 Social Impact Assessment

This section provides a brief introduction to the concept of social impact assessment (SIA) and the particular SIA methods that have been adopted for this study. The practice of social impact assessment was pioneered in the United States in response to the impact assessment provisions of the *National Environmental Policy Act 1969* (NEPA). This Act required proponents of development projects and policies that involved Federal land, money or jurisdictions to detail the impacts of their proposals on the physical, cultural and human environments. Assessment was also required of alternatives to the proposal and of measures to mitigate negative impacts. While legislative environments for impact assessment vary considerably around the world, the basic framework established under NEPA has remained a fundamental point of reference.

### 1.2 What is a Social Impact?

According to the US Interorganizational Committee on Guidelines and Principles for SIA, social impacts may be defined as:

the consequences to human populations of any public or private actions—that alter the ways in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society (Burdge *et al*, 1995, p. 11).

This is an extremely broad definition that provides scope to focus on almost any aspect of social change associated with a proposal. Although this lack of specificity may seem unusual, its strength is that it encourages social impact assessors to focus on those changes that are important within a particular situation rather than on those that are easy to measure (Burdge *et al*, 1995, p. 35). Addressing this need in a systematic, rigorous and transparent manner is taken up in SIA methodology.

### 1.3 What is Social Impact Assessment?

There are two broad schools of thought on the basic purpose of SIA that have influenced the approach taken to this study. The first focusses on using SIA to make predictions about social change while the second focusses on using SIA as a tool to facilitate public involvement in

decision-making. According, again, to the US Interorganizational Committee on Guidelines and Principles for SIA:

Social impact assessment can be defined as the process of assessing or estimating in advance the social consequences that are likely to follow from specific policy actions or project development ... (Burdge & Vanclay 1995).

The Queensland Government's former Social Impact Assessment Unit promoted this understanding within Queensland but added that the purpose of identifying and assessing social impacts was to achieve better planning outcomes by influencing decision making and leading to monitoring, mitigation and management strategies that minimise negative impacts and enhance positive ones.

There is a general consensus within the SIA profession that assessing potential impacts accurately and achieving positive development outcomes is dependent on widespread stakeholder participation in the impact assessment and planning process (Burdge & Robertson 1998; Coakes 1999; Vanclay 2000). Further, they consider it necessary to begin participation/social assessment as early in the life of a project as possible in order to ensure that:

- the impact assessment process incorporates local knowledge about social conditions, processes and likely impacts
- attitudes and perceptions towards proposed change can be identified
- subjective and cultural impacts such as how people perceive change in their local environment may be identified
- appropriate mechanisms to involve different groups in the decision-making process may be identified
- the outcomes of the SIA and the views of the public may be incorporated at the stage of project design and used to maximise benefits rather than simply to compensate the losers following implementation
- potential alternatives may be identified and adequately assessed, and
- conflict over projects may be minimised by ensuring that as many interests as possible are considered in decisions and appropriate mitigation strategies are put in place (see Burdge *et al* 1995; Bisset 2000; Burdge & Robertson 1998; Dale *et al*, 1997; SIAU 2000).

A key feature of the current impact assessment study is, of course, that it is an evaluation of an existing development, not an attempt to assess the impacts of that development in advance. Ex post studies of this kind provide important opportunities to review impacts to date and to alter management strategies to minimise negative impacts and capitalise on positive impacts, as well as to contribute to the body of knowledge about what actually happens in communities affected by developments of this kind. Such knowledge is of considerable value to managers of the existing project and to proponents of similar projects elsewhere.

## 2.0 METHODOLOGY

The basic social impact assessment methodology is based on a combination of comparative analysis (that is, comparing the proposed development with similar developments elsewhere) and consultation with potentially affected stakeholders. (An overview of the consultation is attached in Appendix D). In the case of an ex post study such as this one, specific data on the actual outcomes of the development may be obtained from a variety of sources. A two phase methodology detailed below was adopted for this study.

### 2.1 Phase 1: Scoping

The scoping phase aimed to identify all plausible impacts so that detailed plans could be developed for the rest of the study. For the SIA component this involved two main activities:

- Preliminary stakeholder analysis—this is an interview-based method involving discussions with stakeholder groups involved in, or affected by, the Coppabella Coal Mine to identify:
  - Perceived social, economic and environmental impacts (positive and negative).
  - Community structure (i.e. relationships between groups).
- Comparative analysis—this is a desktop method involving the interrogation of similar studies conducted elsewhere so as to identify potential impacts of which stakeholders may not be aware.

### 2.2 Phase 2: Baseline Assessment of Impacts and Mitigation Strategies

Some flexibility is needed in Phase 2 in order to respond to potential impacts identified in Phase 1. Nevertheless, those activities undertaken included:

- Estimation of social impacts—based on more extensive community interviews and analysis of statistical data provided by a range of agencies including the Australian Bureau of Statistics and other agencies an assessment was made of the actual magnitude of potential impacts identified during Phase 1.
- Stakeholder analysis—the significance of many social and economic impacts depends on the value that is placed on them by the relevant stakeholders. Ongoing stakeholder analysis utilised interviews with community representatives to:
  - Evaluate the significance of social and economic impacts to the community.
  - Identify mitigation and other strategies to enhance local capture of positive impacts and ensure equitable distribution of impacts.



### **3.0 PHASE 1 OUTCOMES**

Preliminary identification of potential social impacts was undertaken through interviews with key informants and a desktop review of Australian Bureau of Statistics data and existing social impact assessment literature. Table 3.1 below, summarises the outcomes of these investigations and provides an overview of issues and research questions that were pursued during the next phase of the study. In presenting this table it is important to point out that inclusion of a potential impact in this table in no way implies that it is a significant issue in relation to the Coppabella operation. All impacts were subject to further data collection and analysis in Phase 2 of the study

**Table 3.1 Preliminary list of potential social impacts**

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
Population characteristics	Demographic change (eg. transient male population)	Nebo Shire Regional	Local government Nebo Shire residents Mine employees	Change in demographic structure of Nebo Shire and associated townships Permanent and temporary residences of mine employees Disruption of family life due to separation during shift	ABS Employee survey Government and non-government service providers
	Demand for human services (eg. health, education, counselling etc)	Nebo Shire Regional	Local government Government and non-government service providers Nebo Shire residents Mine employees	Level and nature of demand experienced by human service providers Location of demand on human services	Government and non-government service providers
	Demand for and cost of access to housing and accommodation	Nebo Shire Regional	Local government Other businesses Nebo Shire residents Regional residents Mine employees	Level and nature of demand experienced by human service providers Location of demand on human services	Existing Reports ABS Community Interviews Government and non-government service providers
	Demand for community infrastructure (eg. recreation facilities)	Nebo Shire Regional	Local government Other businesses Nebo Shire residents Regional residents Mine employees	Level and nature of demand Service gaps Responsibility for service provision	Existing reports Community and stakeholder consultation Government and non-government service providers

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
	Crime (incl. domestic violence)	Nebo Shire Regional	Police Nebo Shire residents Regional residents Mine employees	Levels and types of crime Location and regional distribution of crime	ABS Police Department of Transport Government and non-government service providers
	Community participation and integration	Nebo Shire	Local government Nebo Shire residents Mine employees	Level of participation among mine employees in community groups and events	Community groups Community interviews/survey Employee survey
	Traffic and fatigue	Nebo Shire Regional	Local government Nebo Shire residents Mine employees	Vehicle movements Traffic infringements Type, severity and cause of motor vehicle accidents Type, severity and nature of human injuries	Department of Transport Police Department of Health
	Anticipation of change (eg. psychological distress)	Mine proximity Nebo Shire	Nebo Shire residents	Perceptions of change Reasons for support of or resistance to change Outcomes of change – Positive / Negative	Community groups Community interviews/survey
Economic/industrial base	Community identity	Nebo Shire	Nebo Shire residents	Perceptions of sense of belonging Years resident Participation in community Resident activity patterns	Community groups Community interviews/survey

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
	Employment opportunities and labour availability	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents Mine employees	Demand for and nature of employment opportunities Placement rate	Existing Reports Government and non-Government service providers Community consultation
	Business opportunities and constraints (incl. access to property and transport infrastructure)	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents	Demand for and nature of business opportunities Capacity to respond to business opportunities Lifestyle impact	Existing Reports Government and non-Government service providers Stakeholder consultation
	Mine closure	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents Mine employees	Life of Mine Outcomes of closure Community options Certainty Exit strategy	Existing Reports Government and non-Government service providers Stakeholder consultation
	Anticipation of change (eg. investment decisions)	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents	Perceptions of change Reasons for support of or resistance to change Outcomes of change – Positive / Negative	Business survey Community groups Community interviews/survey
	Level of cooperation/conflict over	Mine	Local government	Community cohesion	Stakeholder consultation

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
Mine-community relationships	type, magnitude and direction of change	proximity Nebo Shire	Other businesses Nebo Shire residents	Level and nature of personal and business investment Outcomes of change – Positive / Negative	Community interviews
	Consultation and communication	Mine proximity Nebo Shire	Local government Other businesses Nebo Shire residents	Perception of consultation and communication processes among impacted interest groups Preferred mechanisms for consultation and communication	Business survey Community groups Community interviews/survey Industry bodies Affected property holders
	Strength of local and regional institutions for planning and governance	Nebo Shire Regional State	Local government Other businesses Nebo Shire residents State government agencies	Community capacity for input to planning Nature of participation in policy and planning forums Quality of outcomes	Community groups Industry bodies Government and non-government service providers
Native title	Access to country	Mine proximity Nebo Shire	Native title claimants Other Nebo Shire residents	Provision and nature of access Impact of access	Native title claimants APC Affected property holders Industry based organisations
	Training opportunities	Mine proximity Nebo Shire	Native title claimants	Demand, provision and nature of and training opportunities Participation rate Quality of outcomes	Native title claimants APC

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
Environment	Economic opportunities	Mine proximity Nebo Shire	Native title claimants	Demand and nature of employment opportunities Participation rate e.g. businesses, contracts awarded.	Native title claimants APC
	Cultural heritage management	Mine proximity Nebo Shire	Native title claimants	Participation of indigenous in cultural heritage management Commitment and support of mining company to CHM. Quality of outcomes Access issues	Native title claimants APC Affected property holders Industry based organisations
	Visual amenity	Mine proximity Nebo Shire	Local government Nebo Shire residents	Perceptions of 'acceptable' among impacted groups	Community interviews/survey Stakeholder consultation
	Dust, noise and vibration	Mine proximity Nebo Shire	Local government Nebo Shire residents	Adherence to legislative requirements Stakeholder tolerance	Existing Reports Community interviews/survey Stakeholder consultation
	Safety	Mine proximity Nebo Shire	Local government Nebo Shire residents	Level of and nature of community, individual and employee safety levels.	Existing Reports Government and non-government service providers Community interviews/survey

Major dimensions of social change	Social impacts/issues	Likely scale of impact	Interest groups affected	Preliminary research questions	Potential data sources
	Water	Mine proximity Nebo Shire	Local government Other businesses Nebo Shire residents Dept of Natural Resources and Mines	Are current water access arrangements perceived to be sustainable and equitable?  Potential demand  Water availability	Existing Reports  Government and non-government service providers  Business survey  Community groups  Community interviews/survey

## 4.0 PHASE 2 OUTCOMES

### 4.1 Attitudes Towards the Social and Environmental Impacts of Coal Mining

This section presents the results of a community survey of attitudes towards the social and environmental impacts of coal mining in the Bowen Basin of central Queensland. The surveys (Refer Appendices B and C) were conducted in both Nebo and Mackay to provide a comparative dimension to the data analysis sensitive to the impact assessment truism that negative impacts tend to be local while positive impacts tend to be regional.

It is important to note that the results of this survey should be interpreted in the light of other data collected during the course of the social impact assessment. The purpose of presenting these results in aggregate form before presentation of the rest of the social data is to allow comparison of results across questions.

### 4.2 Profile of Respondents

A brief profile of respondents is provided to enable comparison with ABS census data. This identifies whether the groups sampled are representative of the relevant areas. The respondents who answered the survey from the Nebo region were evenly divided by gender. Of the respondents from Nebo 49.2% were male and 49.2% were female. Of the responses from Mackay, 40.3% were from men and 58% were from women.

The age profiles of respondents are shown in Table 4.2.1. There was little difference between Nebo and Mackay households, except that Mackay had a higher proportion of respondents aged under 30, and Nebo Shire had a higher proportion aged in the 46 – 65 year bracket. As the male population of Nebo Shire is higher than the female population, these distributions show that the pattern of responses reflects the general pattern in surveys of this nature to elicit more responses from women than from men. As no sophisticated statistical analysis will be presented here the data has not been weighted to reflect the actual gender distribution.

<b>Table 4.2.1 Age of Respondents</b>		
<b>Age Group</b>	<b>% responses</b>	
	<b>Mackay</b>	<b>Nebo</b>
Under 20 years	2.4	0.0
20 - 30 years	12.2	9.5
31 - 45 years	40.3	38.1
46 - 65 years	30.6	38.1
Over 65 years	10.5	11.1
No answer	4.0	3.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>



The respondents were asked how long they lived in their respective towns (Table 4.2.2). The results show that those responding to the survey in both centres were stable, long-term residents. For Nebo, the community that has been captured for this survey is the permanent resident population, not the transient population of shift workers who stay in camp-style accommodation while rostered on and then leave the area to return to permanent residences elsewhere.

<b>Table 4.2.2 Length of stay</b>		
<b>Duration</b>	<b>% responses</b>	
	<b>Mackay</b>	<b>Nebo</b>
Less than 2 years	3.2	1.6
2 - 5 years	9.7	6.3
5 - 10 years	14.5	14.3
10 - 20 years	14.5	27.0
Over 20 years	56.5	49.2
No answer	1.6	1.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Respondents from both towns were asked about the size of their households (Table 4.2.3). There was little difference between the centres, with average household size in both centres being slightly more than 3 persons/household.

<b>Table 4.2.3 Size of household</b>		
<b>People in household</b>	<b>% responses</b>	
	<b>Mackay</b>	<b>Nebo</b>
1 person	12.9	9.5
2 people	27.4	36.2
3 people	16.9	19.0
4 people	21.1	16.2
5 people	12.1	11.1
6 people	4.8	1.6
7 people	1.6	3.2
8 people	0.0	1.6
<b>No Answer</b>	<b>3.2</b>	<b>1.6</b>

Respondents were asked to identify the number of children in the household (Table 4.2.4). There were a slightly higher percentage of Nebo households with children (52.4% compared to 46.8%). However, there were estimated to be more average children/household in Mackay (1.12) than Nebo (1.03).

**Table 4.2.4 Children living at home**

Children	% responses	
	Mackay	Nebo
1 child	16.9	19.0
2 children	19.4	14.3
3 children	12.1	7.9
4 children	4.0	1.6
5 children	0.8	3.2
6 children	0.0	1.6
No answer/ None	46.8	52.4

The respondents of both the areas were asked to identify the main occupation associated with their household (Table 4.2.5). Major differences were apparent between the regions. The dominant occupations in the Nebo area were agriculture and mining (76.1%), while a more general mix of occupations were reported for Mackay. There was also a higher proportion of *Retired*, *Student* and *Other* categories at Mackay (26.5%) compared to Nebo (11.1%), suggesting that the proportion of population in the workforce may be higher in the Nebo area.

**Table 4.2.5 Occupation**

Occupation	% responses	
	Mackay	Nebo
Agriculture, Fishing & Mining	16.9	76.1
Health, Teaching & Government	12.9	0.0
Finance & Management	8.1	4.8
Building & Transport	8.9	1.6
Engineering, Electrical & Auto	11.3	0.0
Cleaning & Maintenance	6.5	1.6
Self-employed	2.4	3.2
Retired	16.9	9.5
Student	2.4	0.0
Other	7.2	1.6
No answer	6.5	1.6

The median Annual household income for the respondents of both towns was between \$40,000 and \$80,000 (Table 4.2.6). The average household annual income estimated for Mackay respondents was \$47,800 and for Nebo it was slightly higher at \$50,000. (This is using \$20,000 as the appropriate mid-point for the lower range, \$60,000 for the mid-range, and \$100,000 for the upper range).

**Table 4.2.6 Annual household income**

Income	% responses	
	Mackay	Nebo
Less than \$40,000	42.7	42.9
\$40,000 - \$80,000	41.2	34.9
Over \$80,000	14.5	20.6
No answer	1.6	1.6

### 4.3 Attitudes towards Development Issues

In this section, community attitudes towards issues that are facing the region because of the development and expansion of mining activities in the region are reported. The respondents in Mackay were asked to rate 18 statements about the different developmental issues in the region, while the respondents in Nebo were asked to rate 19 statements about the different developmental issues in the region. The results are reported in two sections. Part A contains the responses from Mackay and Part B the responses from Nebo.

Respondents were asked to rate a series of statements about the impacts of development on a 5 point scale:

- 1= Agree strongly
- 2= Agree a bit
- 3= Neither agree nor disagree
- 4= Disagree a bit
- 5= Disagree strongly and
- 6= No response

#### Part A: Mackay

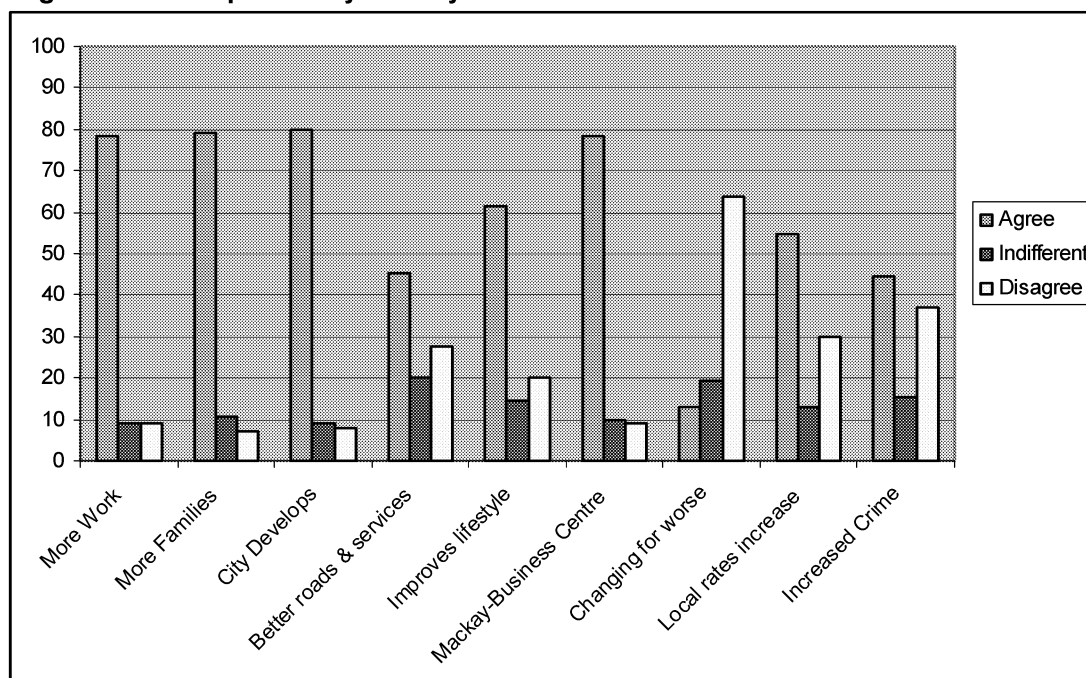
The statements that Mackay residents were asked to rate together with the percentage of responses by category are shown in Table 4.3.1.

**Table 4.3.1 Percentage responses to mining related statements – Mackay Households**

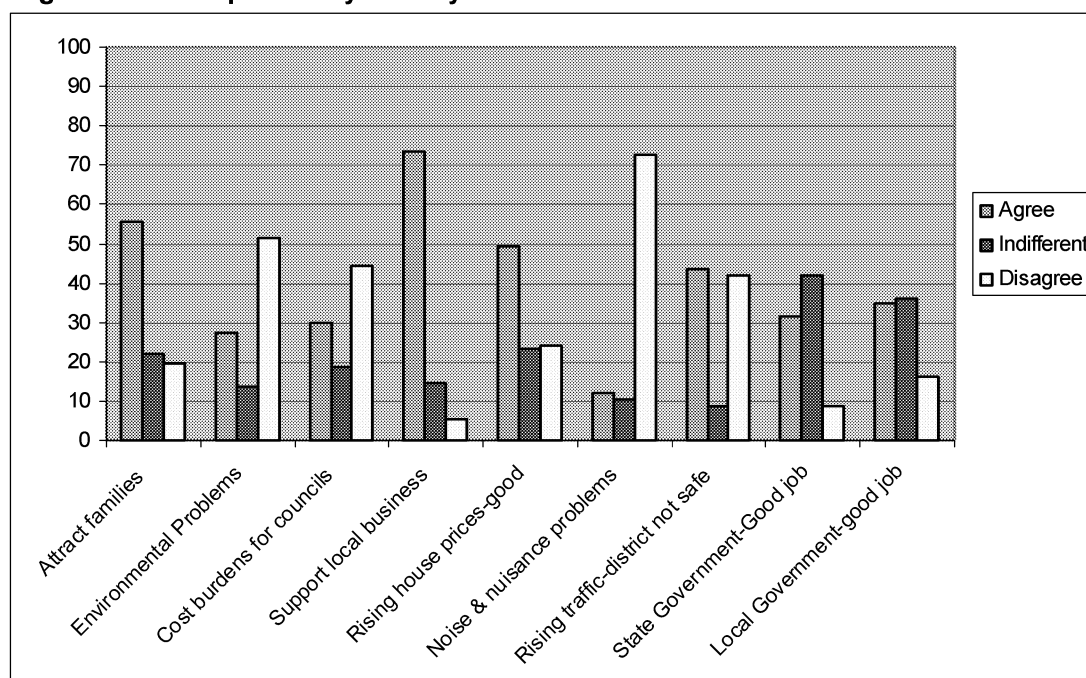
Statements	% of responses					
	1	2	3	4	5	6
Locals get more work due to Coal mines.	33.1	45.2	8.9	6.5	2.4	4.0
Mines bring more families to Mackay.	29.0	50.0	10.5	4.8	2.4	3.2
Mines help Mackay city to develop.	29.8	50.0	8.9	5.6	2.4	3.2
Mines mean better roads & other services.	9.7	35.5	20.2	21.0	6.5	7.3
Mines will improve lifestyle of people in Mackay.	11.3	50.0	14.5	15.3	4.8	4.0
Mines will help Mackay to develop as a business centre.	23.4	54.8	9.7	7.3	1.6	3.2
New people means Mackay in changing for the worse.	3.2	9.7	19.4	37.1	26.6	4.0
Local rates may increase so Councils can improve infrastructure & services.	7.3	47.6	12.9	16.1	13.7	2.4
Different people may lead to increased crime and social problems.	10.5	33.9	15.3	30.6	6.5	3.2
Mackay should try to attract more mining families.	10.5	45.2	21.8	16.1	3.2	3.2
Mines create environmental problems.	4.8	22.6	13.7	40.3	11.3	7.3
Mines create cost burdens for local councils to provide extra services.	7.3	22.6	18.5	35.5	8.9	7.3
Mines support local businesses & events.	23.4	50.0	14.5	2.4	3.2	6.5
Any increases in house prices & rents in Mackay in good.	16.1	33.1	23.4	18.5	5.6	3.2
Mines create noise and other nuisance problems.	1.6	10.5	10.5	46.0	26.6	4.8
Increased traffic means that the district is not as safe as before.	12.9	30.6	8.9	33.9	8.1	5.6
State Government does a good job of planning & controlling mine related development.	2.4	29.0	41.9	6.5	2.4	17.7
Local Government does a good job of planning & controlling mine related development.	2.4	32.3	36.3	9.7	6.5	12.9

A summary of the results are shown in Figures 4.3.1 and 4.3.2. The *Agree strongly* and *Agree a bit* categories have been combined to form an *Agree* category. The *Neither agree nor disagree* category is labelled as *Indifferent*, while the *Disagree strongly* and *Disagree a bit* categories have been combined to form a *Disagree* category.

**Figure 4.3.1 Responses by Mackay households to statements.**



**Figure 4.3.2 Responses by Mackay households to statements**



The results show that the statements that attract most support (>70%) are:

- Locals get more work due to coal mines
- Mines bring more families to Mackay
- Mines help Mackay city to develop
- Mines will help Mackay to develop as a business centre
- Mines support local businesses and events.

The results show the statements that attract least support (<30%) are:

- New people means that Mackay is changing for the worst (> 60% disagreed)
- Mines create environmental problems
- Mines create cost burdens for local councils to provide extra services
- Mines create noise and other nuisance problems (more than 70% disagreed).

## Part B: Nebo

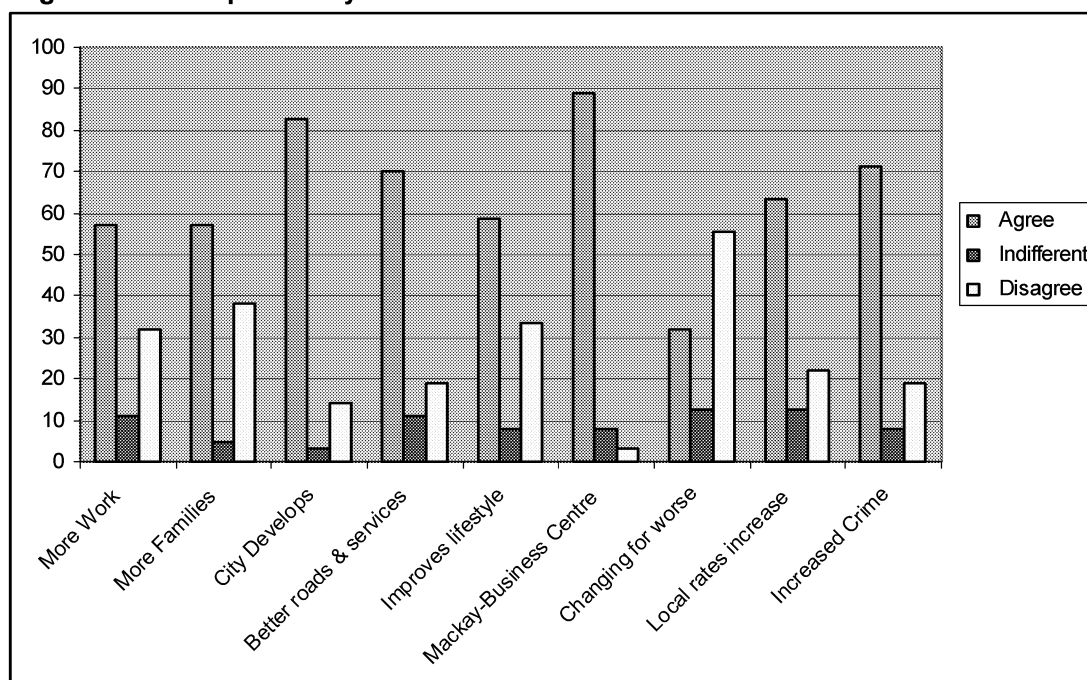
The statements the residents of Nebo were asked to rate were similar to those of the Mackay residents, with the additional of one extra statement (Table 4.3.2).

**Table 4.3.2 Percentage responses to mining related statements – Mackay Households**

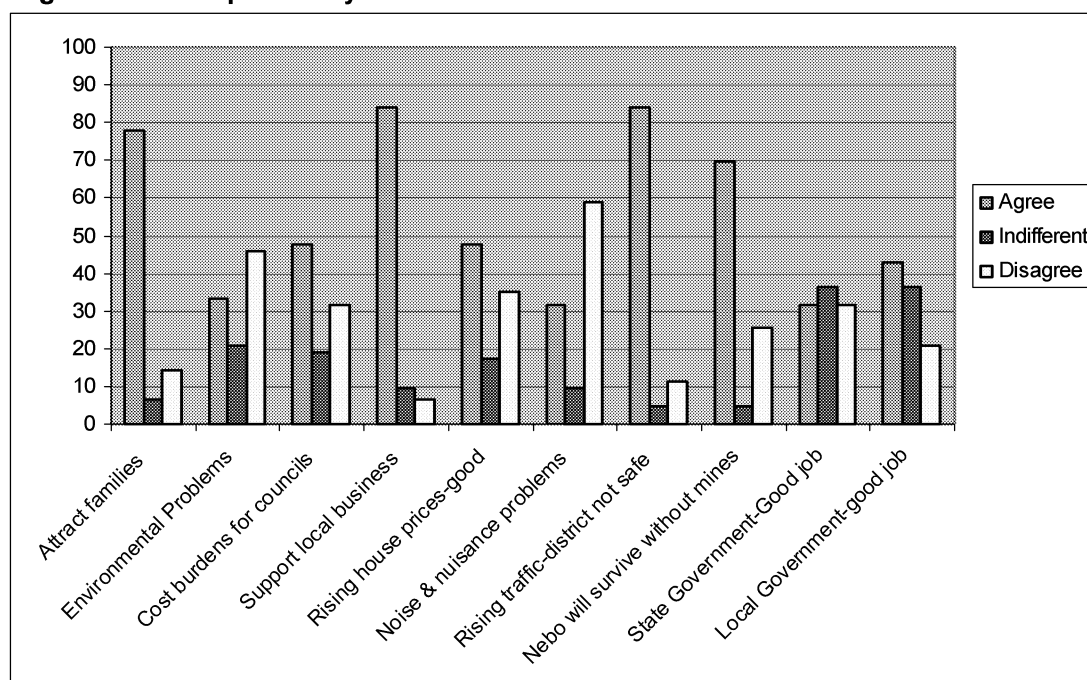
Statements	% of responses					
	1	2	3	4	5	6
Locals get more work due to Coal mines.	25.4	31.7	11.1	14.3	17.5	0.0
Mines bring more families to Nebo.	25.4	31.7	4.8	23.8	14.3	0.0
Mines help Nebo town to develop.	38.1	44.4	3.2	7.9	6.3	0.0
Mines mean better roads & other services.	42.9	27.0	11.1	12.7	6.3	0.0
Mines will improve lifestyle of people in Nebo.	15.9	42.9	7.9	23.8	9.5	0.0
Mines will help Mackay to develop as a business centre.	55.6	33.3	7.9	1.6	1.6	0.0
New people means Nebo in changing for the worse.	14.3	17.5	12.7	39.7	15.9	0.0
Local rates may increase so Councils can improve infrastructure & services.	28.6	34.9	12.7	11.1	11.1	1.6
Different people may lead to increased crime and social problems.	25.4	46.0	7.9	11.1	7.9	1.6
Nebo should try to attract more mining families.	38.1	39.7	6.3	9.5	4.8	1.6
Mines create environmental problems.	17.5	15.9	20.6	30.2	15.9	0.0
Mines create cost burdens for local councils to provide extra services.	19.0	28.6	19.0	22.2	9.5	1.6
Mines support local businesses & events.	38.1	46.0	9.5	6.3	0.0	0.0
Any increases in house prices & rents in Nebo in good.	15.9	31.7	17.5	17.5	17.5	0.0
Mines create noise and other nuisance problems.	11.1	20.6	9.5	25.4	33.3	0.0
Increased traffic means that the district is not as safe as before.	44.4	39.7	4.8	9.5	1.6	0.0
Nebo would survive without many changes without mines.	31.7	38.1	4.8	17.5	7.9	0.0
State Government does a good job of planning & controlling mine related development.	7.9	23.8	36.5	15.9	15.9	0.0
Local Government does a good job of planning & controlling mine related development.	12.7	30.2	36.5	9.5	11.1	0.0

A summary of the results are shown in Figures 4.3.3 and 4.3.4, using the same procedure to aggregate responses as for the Mackay survey.

**Figure 4.3.3 Responses by Nebo households to statements**



**Figure 4.3.4 Responses by Nebo households to statements**



The results show that the statements that attract most support (>70%) are:

- Mines help Nebo town to develop
- Mines mean better roads and other services
- Mines will help Mackay to develop as a business centre
- Different people may lead to increased crime and other problems
- Nebo should try to attract more mining families
- Mines support local businesses and events
- Increased traffic means the district is not as safe as before.

The results show the statements that attract least support (<40%):

- New people means that Nebo is changing for the worst (> 55% disagreed)
- Mines create environmental problems
- Mines create noise and other nuisance problems (more than 70% disagreed)
- State government does a good job of planning and controlling mine development.

Cross tabulation and Chi-square tests were conducted to see if there were any significant differences to the responses to developmental issues from Mackay and Nebo populations. The Pearson Chi-square test value and its significance for the responses to developmental issues is given in Table 4.3.3. The significance tests were conducted at the 5% level. There is a significant difference in responses to most developmental issues from the two towns of Mackay and Nebo. (Some cells had counts of less than 5 observations which reduces the reliability of the results).

The responses from the two towns were similar for issues like city development, lifestyle changes, cost burdens on local councils and rising real estate prices. Mackay people were more supportive of the statements that locals would get more work and that new families would be attracted. Nebo respondents were more positive about some issues: that the mines were good for roads and services and the business centre in Mackay, that the mines supported local businesses, and that local government did a good job in planning for development. Nebo residents were also more supportive of some negative statements; that new people means the area is changing for the worse, that local rates may increase, and that there may be increased crime, traffic problems, environmental problems and noise problems.

**Table 4.3.3 Difference in responses to mining related statements – Mackay and Nebo Households**

<i>Statements</i>	<i>% Agree Mackay</i>	<i>% Agree Nebo</i>	<i>Chi-square</i>	<i>Significant difference between areas</i>	<i>Area giving highest response</i>
Locals will get more work	78.3	57.1	20.86	Yes	Mackay
Mines will attract more families	79.0	57.1	29.56	Yes	Mackay
Mines will help city/town to develop	79.8	82.5	7.19	No	
Mines mean better roads & services	45.2	69.9	31.12	Yes	Nebo
Mines improves lifestyle	61.3	58.8	8.23	No	
Mines good for Mackay-Business Centre	78.2	88.9	21.37	Yes	Nebo
Changing for worse	12.9	31.8	15.2	Yes	Nebo
Local rates increase	54.9	63.5	15.77	Yes	Nebo
Increased Crime	44.4	71.4	16.57	Yes	Nebo
Should attract more families	55.7	77.8	24.38	Yes	Nebo
Environmental Problems	27.4	33.4	15.92	Yes	Nebo
Cost burdens for councils	29.9	47.6	10.69	No	
Support local business	73.4	84.1	11.96	Yes	Nebo
Rising house prices-good	49.2	47.6	8.83	No	
Noise & nuisance problems	12.1	31.7	19.2	Yes	Nebo
Rising traffic-district not safe	43.5	84.1	35.8	Yes	Nebo
State Government-Good job	31.4	31.7	29.6	Yes	
Local Government-good job	34.7	42.9	16.82	Yes	Nebo

## 4.4 Attitudes towards Environmental Issues

This section reports attitudes towards the environmental issues facing the region. The respondents in Mackay and Nebo were asked to rate eight statements about the different environmental issues in the region. Only one of those statements related to coal mining impacts, so that the importance of this issue could be seen in the context of other environmental issues relevant to the region.

The results are reported in two sections. Part A contains the responses from Mackay and Part B the responses from Nebo. Respondents were asked to rate a series of statements about the impacts of development on a 5 point scale:

- 1= Very serious
- 2= Serious
- 3= A bit serious
- 4= Not at all serious
- 5= No response

### Part A: Mackay

The statements that Mackay residents were asked to rate together with the percentage of responses by category are shown in Table 4.4.1.

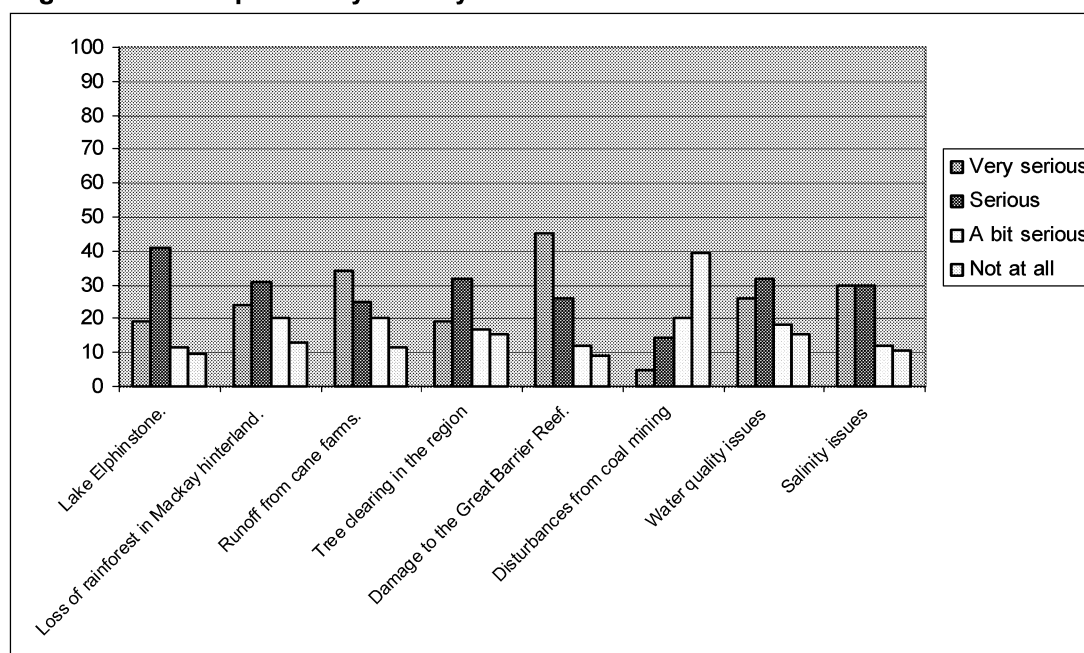
**Table 4.4.1 Percentage responses to environmental related statements – Mackay Households**

Statements	% of responses				
	1	2	3	4	5
Blue green algae on Lake Elphinstone.	19.4	41.1	11.3	9.7	18.5
Loss of rainforest and coastal vegetation in the Mackay hinterland.	24.1	30.6	20.2	12.9	12.1
Chemical and fertiliser runoff from cane farms.	33.9	25.0	20.2	11.3	9.7
Tree clearing in the region further west from Mackay.	19.4	31.5	16.9	15.3	16.9
Damage to the Great Barrier Reef.	45.2	25.8	12.1	8.9	8.1
Disturbances from coal mining in the region.	4.8	14.5	20.2	39.5	21.0
Water quality issues in streams and estuaries	25.8	31.5	18.5	15.3	8.9
Problems of salinity on farming & grazing lands.	29.8	29.8	12.1	10.5	17.7

A summary of the results is shown in Figure 4.4.1. The results show that most concern is shown for the Great Barrier Reef, runoff from cane farms, and salinity issues. Less than 20% of respondents thought that *Disturbances from coal mining in the region* were serious.



**Figure 4.4.1 Responses by Mackay households to environmental statements**



## Part B: Nebo

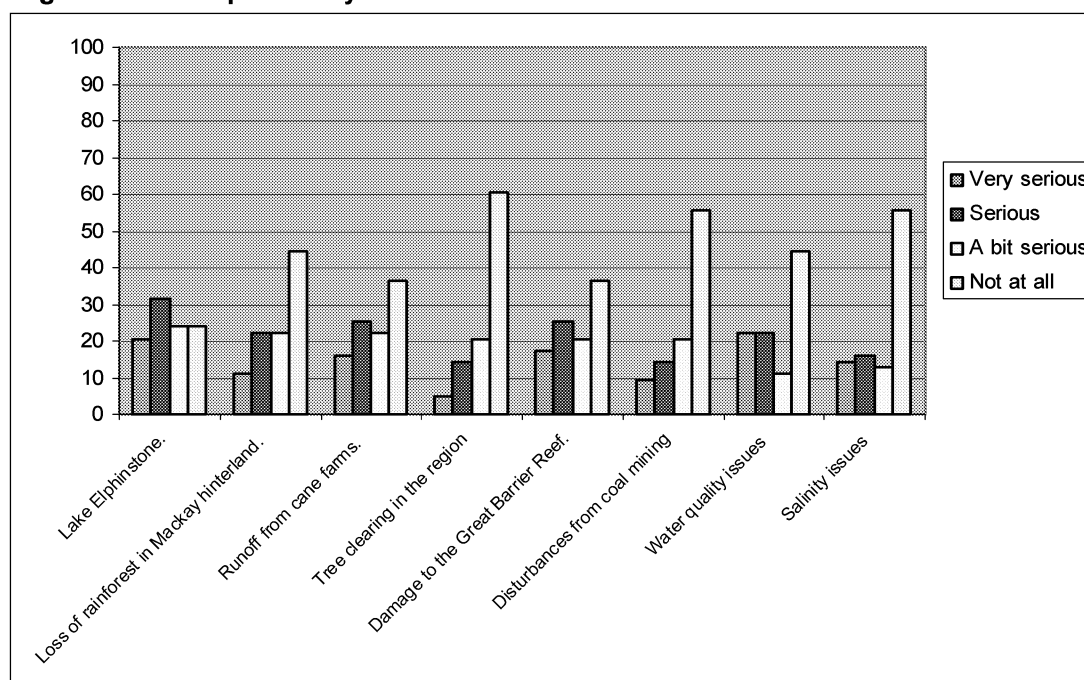
The statements that Nebo area residents were asked to rate together with the percentage of responses by category are shown in Table 4.4.2.

**Table 4.4.2 Percentage responses to environmental related statements – Nebo Households**

Statements	% of responses			
	1	2	3	4
Blue green algae on Lake Elphinstone.	20.6	31.7	23.8	23.8
Loss of rainforest and coastal vegetation in the Mackay hinterland.	11.1	22.2	22.2	44.4
Chemical and fertiliser runoff from cane farms.	15.9	25.4	22.2	36.5
Tree clearing in the region further west from Mackay.	4.8	14.3	20.6	60.3
Damage to the Great Barrier Reef.	17.5	25.4	20.6	36.5
Disturbances from coal mining in the region.	9.5	14.3	20.6	55.6
Water quality issues in streams and estuaries	22.2	22.2	11.1	44.4
Problems of salinity on farming & grazing lands.	15.9	15.9	12.7	55.6

The results are shown in Figure 4.4.2. The only category where more than 50% of responses were rated as *Very Serious* or *Serious* was *Blue green algae on Lake Elphinstone*. Only 24% of respondents thought that *Disturbances from coal mining in the region* were serious. More than 50% of respondents thought that *Tree clearing*, *Disturbances from coal mining in the region* and *Salinity* were *Not at all serious*.

**Figure 4.4.2 Responses by Nebo households to environmental statements**



Cross tabulation and Chi-square tests were conducted to see if there were any significant differences to the responses to developmental and environmental issues from Mackay and Nebo. The Pearson Chi-square test value and its significance for the environmental issues are given in Table 4.4.3. The significance tests were conducted at the 95% level. From the Tables it is clear that there is a significant difference between the responses to all the environmental issues from the two population groups. (Some cells had counts of less than 5 observations which reduces the reliability of the results). Mackay respondents were more concerned about environmental issues apart from the *Disturbances from coal mining* issue, where Nebo residents were more concerned.

**Table 4.4.3 Difference in responses to environmental related statements – Mackay and Nebo Households**

Statements	% rating as Serious or Very Serious		Chi-square	Significant difference between areas	Area giving highest response
	Mackay	Nebo			
Blue green algae on Lake Elphinstone.	60.5	52.3	22.69	Yes	Mackay
Loss of rainforest and coastal vegetation in the Mackay hinterland.	54.8	33.3	30.05	Yes	Mackay
Chemical and fertiliser runoff from cane farms.	58.9	41.3	24.48	Yes	Mackay
Tree clearing in the region further west from Mackay.	50.9	19.1	49.69	Yes	Mackay
Damage to the Great Barrier Reef.	71.0	42.9	33.61	Yes	Mackay
Disturbances from coal mining in the region.	19.3	23.8	17.04	Yes	Nebo
Water quality issues in streams and estuaries	57.3	44.4	22.60	Yes	Mackay
Problems of salinity on farming & grazing lands.	59.6	30.2	49.29	Yes	Mackay

## 4.5 Discussion

The data and results presented in this section allow four main conclusions to be drawn.

The first is that the local and regional communities are generally supportive of mining activities in their region. Residents think that mining creates more jobs in their local area, supports local businesses, helps Mackay and Nebo to develop, and supports better roads and services.

The second conclusion is that local and regional communities have some perceptions about the negative impacts from increased mining. There are concerns about increased crime rates, risks associated with increased traffic, and the possibility that local rates might be impacted. There are also some concerns from Nebo residents that new people moving into the area will change Nebo for the worse.

The results indicate that Nebo and Mackay residents have strong positive attitudes about the economic impacts of the mining industry, but are more ambivalent/critical about some of the social issues. However, it is notable that almost 70% of Nebo residents thought that the town would survive without the mining industry.

The third conclusion is that there are significant differences in the perceptions of Nebo and Mackay residents about the economic and social impacts of the mining industry. Mackay residents tended to be more confident about the positive economic impacts of the industry, while Nebo residents were more inclined to agree that there may be some offsetting social impacts.

The fourth conclusion is that both Nebo and Mackay residents did not identify the environmental impacts of mining as highly significant relative to other environmental issues. Nebo residents were more likely to think that environmental impacts from mining were an issue, but more than 50% of Nebo respondents thought that there were no serious environmental impacts from mining.

It is possible that the conclusions drawn above may be extrapolated to other regional areas. The results suggest that greater attention needs to be directed towards social impacts of mining activities in local areas, but that there generally broad acceptance of mining activities across economic, social and environmental issues.

## 5.0 POPULATION CHARACTERISTICS

### 5.1 Demographic change

Demographic change is often one of the most obvious impacts to follow implementation of a development project. Typically, demographic change moves through three major phases commencing with construction of the project and movement to the area of a construction workforce, followed by the longer operational phase of the project, which usually requires considerably less labour, and moving eventually to the closure of the project and the potential outmigration of labour. Due to the timing of this SIA we are concerned here primarily with demographic change associated with the operational phase.

#### 5.1.1 Population Age and Gender

In 2001, Nebo Shire's population was 2530 persons comprising almost twice as many males (1649) as females (881) (see Table 5.1.1.1). Since 1991, the proportion of males to females has steadily increased. This is contrary to the trend in the region as a whole and would most likely reflect the increased employment opportunities in the Shire through mining development as well as the gender composition of the mines' workforces.

As mining commenced at Coppabella in 1998 any population changes in the Shire associated with this operation should be reflected in the 2001 Census figures. The ABS Census data shows that the population of Glenden fell from 1,319 in 1996 to 977 in 2001. This means that the population in the rest of the Nebo Shire rose by 401 people over the same time period. It is likely that the population would have increased further had not Moranbah been partially vacant at the time that the Coppabella Mine commenced.

**Table 5.1.1.1 Change in Population by Age by Sex**

*	1991	1991	1991	1996	1996	1996	2001	2001	2001	No.	% change 1991 - 1996	No.	% change 1991 - 2001	No.	% change 1996 - 2001
	Males	Females	Total	Males	Females	Total	Male	Female	Total						
0 - 14	388	373	761	291	303	594	270	254	524	-167	-28.11%	-237	-31.14%	-70	-11.78%
15 - 24	215	138	353	180	112	292	166	101	267	-61	-20.89%	-86	-24.36%	-25	-8.56%
25 - 34	329	247	567	329	196	525	351	179	530	-42	-8.00%	-37	-6.53%	5	0.95%
35 - 44	275	190	465	333	172	505	380	154	534	40	7.92%	69	14.84%	29	5.74%
45 - 54	148	78	226	230	115	345	285	99	384	119	34.49%	158	69.91%	39	11.30%
55 - 64	87	58	145	81	41	122	114	45	159	-23	-18.85%	14	9.66%	37	30.33%
65 years or more	60	31	91	51	37	88	83	49	132	-3	-3.41%	41	45.05%	44	50.00%
Total	1502	1115	2617	1495	976	2471	1649	881	2530	-146	-5.91%	-87	-3.32%	59	2.39%

Notes to the Table: \* excludes overseas visitors

Source: Australian Bureau of Statistics 2001, 1996, 1991, Census of Population and Housing, Basic Community Profile

Table 5.1.1.1 shows a declining population trend in the shire from 1991 to 1996. Based on the groupings in this Table, the Shire lost in each category under 35 years, yet showed an increase in each group over 35 years, with a small drop in the 65+ category. It is possible that the population decline experienced between 1991 and 1996 was, in part, due to changed working

arrangements at the Newlands mine and residential relocation of workers from Glenden (in the north of the Shire). The move to a contract workforce saw many families relocate. Any replacement population was more likely to be single males than families.

There was a slight increase in population from 1996 to 2001 with a percentage change of 2.39%. However, while there was an increase in the male population for all age groups over 25, there were declines in the male population below 25 and a decline in most of the female population for all age groups under 65.

The composition of the Nebo Shire population is clearly shifting toward a dominance of males in the working age categories and a decline in family groups, women and children. This contrasts with general trends in other areas of the State which are experiencing an increasing female population. Most of this change is likely to be associated with the population dynamics at Glenden.

It is also interesting that there was a substantial increase in people aged 65 years or more between 1996 and 2001. Older people in the Nebo township were 10.3% of the population, which compares to a regional average of 10.5%. By comparison, people aged 15 and younger accounted for 18.8% of the population in the Nebo township compared to a regional average of 21.9%.

It is also important to note that Nebo has a substantial transitory population. In fact, it has been estimated that temporary residents located in camp-style accommodation (see Section 7.1) increase the population of Nebo by up to 20% (Queensland Department of Local Government and Planning 2001). The likelihood that significant numbers of those staying in temporary accommodation would relocate their permanent homes and families to Nebo is small. As Tables 5.1.1.2 and 5.1.1.3 and 5.1.1.4 show, approximately one-quarter would like to relocate but perceive a number of barriers in their ability to do so. The transitory workforce in Nebo is reducing the proportion of females in the population. In the 2001 census, 44% of the population in the Nebo town were female, compared to 48.6% in the Mackay region.

When miners were asked if they would like to move to a main town of residence closer to the mine site, 26% indicated that they would, 70% indicated that they would not, and 4% were undecided. Results are shown for this question, but excluding those miners already living at Coppabella or Nebo.

**Table 5.1.1.2 Miners who would like to move closer to Coppabella Mine**

Like to move closer to Coppabella Mine?	Region where main residence is located			
	Mackay	Like to move closer?	Mackay	Like to move closer?
Yes	8	Yes	8	Yes
No	48	No	48	No
No answer	3	No answer	3	No answer
<b>Total</b>	<b>59</b>	<b>Total</b>	<b>59</b>	<b>Total</b>

There are approximately 70% of miners (245 people) who are located outside of easy commuting distance from the Coppabella Mine. If 29% of these employees were to move closer, this equates to 69 employees. In a subsequent survey question, miners were asked to indicate the main reasons for their answers about moving closer. When only the 'housing

issue' responses are considered, the number of employees who might move closer drops to approximately 47%.

**Table 5.1.1.3 Reasons for not moving closer to Coppabella Mine**

Reason for not moving closer if they indicated a wish to do so	Number of responses (out of 29)
Lack of housing for rental	16
Lack of housing for purchase	4
Educational facilities for children	6
Job opportunities for partner	8
Family do not want to move	4
Other (reasons given below)	8
<i>Family do not want to move; Educational Opportunities for children; Recreational /entertainment facilities; Prefer living in a bigger centre Lack of campsite Local business house's seem to inflate prices where ever mining personal reside No boat ramps no reasonable accommodation Partner has job Prefer Living in a Bigger Centre (3 responses) Shopping &amp; Sporting Recreational Facilities Will be moving in next 12 months</i>	

**Table 5.1.1.4 Reasons for not wanting to move closer to the Coppabella mine**

Reason for not wanting to move closer	Number of responses (out of 82)
Partner has job	19
Family do not want to move	36
Educational facilities	23
Recreation/entertainment facilities	21
Prefer living in a bigger centre	29
Other (reasons given below)	31
<i>Based out of Rockhampton Closer to ocean Have land in Mirani Have own house at Sarina I am single I go to Uni there – not a permanent worker here I stay at Nebo when on shift Isn't anywhere to live Job Opportunities for Partner Lack of housing for rental Lack of housing for rental Lack of shopping facilities &amp; medical services etc. Like where I am Medical Facilities inadequate e.g. dental etc. Moranbah is bigger than Nebo/Coppabella Nebo is a hole No closer place Sport Facilities and clubs for children; no child minding facility; lack of shopping facilities Sunshine Coast has more to offer</i>	

## 5.1.2 Indigenous Population

The 2001 Census figures reveal that the Indigenous population of Nebo Shire numbered 51 people (23 males and 28 females). This represents an increase of 22 persons (12 males and 10 females) since the 1996 Census, and an increase of 27 people (5 males and 22 females) since the 1991 Census.

**Table 5.1.2.1 Aboriginal and Torres Strait Islander Population of Nebo Shire, 1991 – 2001**

	Male			Female			Total		
	1991	1996	2001	1991	1996	2001	1991	1996	2001
Aboriginal	14	28	23	6	14	24	20	42	47
Torres Strait Islander	4	3	0	0	0	4	4	3	4
Both Aboriginal and Torres Strait Islander	na	4	0	na	0	0	na	4	0
<b>Total Indigenous Persons</b>	<b>18</b>	<b>35</b>	<b>23</b>	<b>6</b>	<b>14</b>	<b>28</b>	<b>24</b>	<b>49</b>	<b>51</b>

Source: ABS, 2001, 1996, 1991, Census of Population and Housing

Notes to the Table: The 1996 and 2001 Census questions on Indigenous origin asked whether each person was of Aboriginal and/or Torres Strait Islander origin. In the 1991 Census, respondents could select either Aboriginal only or Torres Strait Islander only.

While in recent times the Indigenous population appears relatively stable, the substantial increase in population between 1991 and 1996 may have reflected the increasing propensity for Indigenous Australians to identify their ethnicity in successive Census' as well as natural increase (Queensland Department of Local Government and Planning 2001, p. 7).

The small number of Indigenous people now resident in the local area was explained by representatives of Traditional Owner groups as an outcome of people either being forced from the area during the early European colonisation of the region or moving voluntarily from the area more recently as a result of limited overall employment opportunities (see Section 13.2).

## 5.1.3 Future Trends in Population

Population projections released by the Department of Local Government and Planning (DLGP) prior to the release of the 2001 Census predicted that between 2001 and 2021 the population of Nebo Shire would decline from 2147 to 1849 (Table 5.1.3.1), even though the wider region would experience population growth over the same period. According to the DLGP (2002, p. 13):

The issues facing the inland towns and rural areas are likely to be significantly different. The decline in population, particularly in the working age group, may lead to difficulties in maintaining existing service levels and a decline in local economic opportunities.

**Table 5.1.3.1 Population Projections, Medium Series, Nebo(S) region and Queensland, 2001 to 2021**

Year	Region (number)	Queensland (number)	Region as a %age of Queensland (%)
2001	2 147	3 268 081	0.1
2006	2 078	3 962 034	0.1
2011	2 005	4 297 745	0.0
2016	1 930	4 632 195	0.0
2021	1 849	4 964 404	0.0
Annual average growth rate 2001 – 2021 (%)	-.07	1.6	NA

Source: Department of Local Government and Planning in OESR, March 2003, p. 2

With an annual average growth rate of -0.7%, there would appear to be no net permanent growth resulting from the increased mining activity in the Shire. The proximity of Nebo to Mackay means that many new mining developments can be serviced from the regional population centre. This negative growth rate compares with an annual average growth rate for Queensland of 1.6%. The region's share of the state's population will reduce from 0.1% in 2001 to 0.0% in 2021. This is not a favourable position from which to negotiate increased service delivery or investment in community infrastructure. These projections would have to be further qualified based on non expressed demand for services that do not currently exist.

### 5.1.4 Education

Table 5.1.4.1 shows the educational qualifications of the Nebo Shire population to have altered somewhat since 1991. In the 2001 Census, 17 people held postgraduate or higher degree qualification compared with 23 in 1996 and 13 in 1991.

**Table 5.1.4.1 Educational Qualifications**

Qualification	1991	1991	1991	1996	1996	1996	2001	2001	2001
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Higher Degree	3	0	3	9	0	9	10	0	10
Post-graduate diploma	6	4	10	4	10	14	4	3	7
Bachelor degree	20	24	44	54	31	85	56	40	96
Undergraduate diploma	14	28	42	7	22	29	28	21	49
<i>Advanced Diploma and Diploma – 2001</i>									
Associate diploma	10	3	13	24	9	33	NA	NA	NA
Skilled vocational	221	17	238	340	14	354	NA	NA	NA
<i>Certificate – 2001</i>							384		437
Basic vocational	11	22	33	30	20	50	NA	NA	NA
Inadequately described	12	3	15	6	3	9	NA	NA	NA
<i>Not qualified – 1991</i>	643	583	1226	NA	NA	NA	NA	NA	NA
Not stated (b)	12	78	243	92	57	149	277	79	356
<i>Not applicable (c) - 2001</i>	NA	NA	NA	NA	NA	NA	619	426	1045
<b>Total</b>	<b>165</b>	<b>762</b>	<b>1867</b>	<b>566</b>	<b>166</b>	<b>732</b>	<b>1378</b>	<b>622</b>	<b>2000</b>

Notes to the Table

(a) Excludes schooling p to Year 12

(b) includes inadequately described in 2001

(c) includes persons who do not have a qualification and persons who have a qualification out of scope of the Australian Standards Classification of Education.

Source: Australian Bureau of Statistics 1991, 1996, 2001 Census of Population and Housing Nebo (S)

Most of the people holding certificate level qualifications are likely to be associated with the coal industry. Overall, the figures indicate relatively low levels of education for the population as a whole which would be a factor influencing the Social Economic Index (Section 5.1.9). Less than 1% of the population hold higher level qualifications. The increase in the register of higher level qualifications is more likely to have come through residents relocating to the Shire to work in the more specialised fields of mining (e.g. engineering).

It is noted that for residents of the Shire, any higher level education would have to be taken on an external basis or through relocation. The nearest University is located at the coastal centre of Mackay. While residents of Nebo township would only have approximately one hour's drive (which is not necessarily practical or probable in the context) to attend in person at the University, those residents in the Shire's outer reaches would need to undertake a 5-6 hour round trip.



## 5.1.5 Income

In 2001, the Shire's median weekly income was \$700-999 per week. Due to differences in methodologies and other factors, the figures from 1996 and 1991 are not directly comparable. It is worth noting that the median income in these years was \$500-599, and \$300-399 respectively (not taking into account inflation). This suggests that there has been a substantial increase in Shire incomes as mining activities have developed. The salary levels of local government employees and those employed in the agricultural industries are somewhat lower than those of even the relatively unskilled workers in mining.

**Table 5.1.5.1 Weekly Individual Income in the Nebo Shire**

Income	1991 (a)	1991(a)	1991(a)	1996	1996	1996	2001	2001	2001
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Negative (includes Nil Income in 2001)				7	12	19	18	71	89
Nil Income				34	108	142	NA	NA	NA
\$1 – \$39				0	74	74	3	26	29
\$40-\$79				6	57	63	9	46	55
\$80-\$119				3	31	34	9	30	39
\$120 - \$399				143	214	357	102	215	317
\$400 - \$699				212	68	280	188	96	184
\$700 - \$999				199	33	232	145	49	194
\$1000 - \$1499				372	15	387	265	22	287
\$1500 or more				135	6	141	362	16	378
Not stated				86	58	144	272	68	340
Overseas visitor				0	0	0	0	0	0
<b>Total</b>				<b>1197</b>	<b>676</b>	<b>1873</b>	<b>1373</b>	<b>639</b>	<b>2012</b>

Notes to the Table

(a) Categories for 1991 are presented as Annual Individual Income and not readily comparable and thus not included here.

Source: Australian Bureau of Statistics, 1996, 2001 Census of Populations and Housing Nebo (S)

Table 5.1.5.1 indicates that a large proportion of the population (43%), 15 years or more, of the Shire have weekly incomes in the higher income brackets—\$700 a week and above. In the lower income levels there is also a large group (22%) earning between \$140-399 per week or less. The income data for people in the Nebo township is presented in Table 5.1.5.2. The median weekly income for the town is in the \$400-499 bracket (ABS). This indicates that people in the Nebo township are earning less, on average, than other people in the Nebo Shire.

**Table 5.1.5.2 Weekly Individual Income in the Nebo Township**

Income	2001	2001	2001
	Male	Female	Total
Negative/Nil income	6	6	12
\$1-\$39	0	0	0
\$40-\$79	4	0	4
\$80-\$119	0	0	0
\$120-\$159	3	0	3
\$160-\$199	6	6	12
\$200-\$299	12	3	15
\$300-\$399	12	6	18
\$400-\$499	0	12	12
\$500-\$599	3	11	14
\$600-\$699	3	6	9
\$700-\$799	0	6	6
\$800-\$999	0	11	11
\$1,000-\$1,499	0	23	23
\$1,500 or more	0	11	11
Not stated	3	16	19
Overseas visitors	0	0	0
<b>Total</b>	<b>52</b>	<b>117</b>	<b>169</b>

Source: Australian Bureau of Statistics, 2001 Census of Population.

### 5.1.6 Employment – Occupation

At the time of the 2001 Census, Intermediate Production and Transport Workers was the occupation with the largest number of employed persons in the Shire. Those employed in this occupation have increased significantly in the years from 1991 to 1996, and showed a lesser increase from 1996 to 2001. Given that construction had a substantial jump in 1996 as the second largest industry of employment this increase may be attributed to this industry as well as to increased mining activity.

**Table 5.1.6.1 Employed persons by occupation**

Occupation	1991	1991	1991	1996	1996	1996	2001	2001	2001
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Managers and Administrators	95	29	124	116	29	145	117	26	143
Professionals	31	36	67	62	50	112	67	37	104
Associate Professionals (Paraprofessionals – 1991)	30	6	36	70	20	90	76	34	110
Tradespersons and Related Workers (Tradespersons – 1991)	176	12	188	246	20	266	230	20	250
Advanced Clerical and Service Workers (Clerks – 1991)	16	72	88	0	13	13	0	7	7
Intermediate Clerical, Sales and Service Workers (Sales & personal service workers – 1991)	0	50	50	16	73	89	8	72	80
Intermediate Production and Transport Workers (Plant & machine operators & drivers – 1991)	284	6	290	401	9	410	432	19	451
Elementary Clerical, Sales and Services Workers	NA	NA	NA	17	28	45	16	31	47
Labourers and Related Workers	163	63	226	91	71	162	112	92	204
Inadequately described	6	3	9	91	71	162	8	0	8
Not stated	47	15	62	17	11	28	3	6	9
<b>Total</b>	<b>848</b>	<b>292</b>	<b>1140</b>	<b>1041</b>	<b>327</b>	<b>1368</b>	<b>1069</b>	<b>344</b>	<b>1413</b>

Source: Australian Bureau of Statistics 1991, 1996, 2001 Census of Populations and Housing Nebo (S)

Tradespersons have showed a decline from 1996 to 2001 (16 persons) along with the field of management and administration. There has been a substantial increase in those engaged as labourers and related workers from 1996-2001. This suggests that there is more demand for lower skilled workers to meet the employment demand in this region.

### 5.1.7 Employment – Industry

It is clearly evident that mining is the largest employer by industry in the Shire (refer Table 5.1.7.1) and has showed an increase in number over all the years from 1991-2001. Mining is also the largest employer in the town, but not to the same extent (refer Table 5.1.7.2).

The most dramatic changes in employment levels by industry in the Shire occurred in construction and health and community services. Employment in construction jumped some 450% between 1991 and 1996 before declining to an almost as spectacular degree in 2001. It is suggested that this increase in construction was mining related associated with supporting infrastructure either on or off the mine site.

Employment in health and community services in the Shire more than halved between 1991 and 1996 and has stayed at similar levels since. This is likely to be associated with structural changes in the Glenden township.

**Table 5.1.7.1 Industry by Employment in the Nebo Shire**

Industry	Number Employed			Structure of Employment		
	1991	1996	2001	1991	1996	2001
1 Agric, Forestry	165	161	196	15.51%	11.72%	13.80%
2 Mining	468	524	544	43.98%	38.14%	38.31%
3 Manufacturing	21	33	37	1.97%	2.40%	2.61%
4 Electricity, Gas, Water	0	7	7	0.00%	0.51%	0.49%
5 Construction	43	193	92	4.04%	14.05%	6.48%
6 Wholesale Trade(a)	63	12	54	5.92%	0.87%	3.80%
7 Retail Trade		37	54	0.00%	2.69%	3.80%
8 Accommodation, cafes & restaurants (b)		82	89	0.00%	5.97%	6.27%
8 Transport and Storage	107	108	116	10.06%	7.86%	8.17%
9 Communication Services	12	3	6	1.13%	0.22%	0.42%
10 Finance and Insurance ( c)	25	10	7	2.35%	0.73%	0.49%
11 Property and Business Services		42	68	0.00%	3.06%	4.79%
12 Public Administration, Defence	39	33	31	3.67%	2.40%	2.18%
13 Education (d)		49	51	0.00%	3.57%	3.59%
14 Health and Community Services	69	24	21	6.48%	1.75%	1.48%
15 Cultural and Recreational Services (e)	52	6	6	4.89%	0.44%	0.42%
16 Personal and Other Services		9	14	0.00%	0.66%	0.99%
17 Non classifiable & Not stated		41	27	0.00%	2.98%	1.90%
18 <b>Total</b>	<b>1064</b>	<b>1374</b>	<b>1420</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Source: Australian Bureau of Statistics 2001, 1996, 1991 Census of Population and Housing.

Notes to the Table: Different classifications were used in 1991. (a) includes Retail Trade, (b) not reported separately in 1991 (c) includes Property and Business Services in 1991, (d) not reported separately in 1991 (e) includes Personal and Other Services in 1991.

**Table 5.1.7.2 Industry by Employment in the Nebo Township**

Industry	Number employed in 2001	Structure of Employment
1 Agriculture, Forestry	3	2.50%
2 Mining	30	25.00%
3 Manufacturing	0	0.00%
4 Electricity, Gas and Water Supply	3	2.50%
5 Construction	19	15.83%
6 Wholesale Trade	0	0.00%
7 Retail Trade	6	5.00%
8 Accommodation, Cafes and Restaurants	4	3.33%
8 Transport and Storage	7	5.83%
9 Communication Services	3	2.50%
10 Finance and Insurance	0	0.00%
11 Property and Business Services	0	0.00%
12 Government Administration and Defence	21	17.50%
13 Education	9	7.50%
14 Health and Community Services	6	5.00%
15 Cultural and Recreational Services	0	0.00%
16 Personal and Other Services	6	5.00%
17 Non-classifiable/ not stated	3	2.50%
<b>Total</b>	<b>120</b>	<b>100.00%</b>

## 5.1.8 Unemployment

The Nebo Shire shows a declining unemployment rate in the period from 1991 to 2001. In 1991 unemployment represented 3.97% of the labour force (Table 5.1.8.1). This reduced to 3.18% in 1996 and by 2001 unemployment had further reduced to 2.47%. In the Nebo township, the unemployment rate in 2001 was 1.61%. The unemployment rate is significantly lower than the State average of 8.2% in 2001 and 9.6% in 1996.

**Table 5.1.8.1 Nebo Shire Unemployment by Age of the Labour Force**

Year/Age	15-19	20-24	25-34	35-44	45-54	55-64	64+	Total
1991	12.05	9.03	0.83	0.87	5.45	11.11	0.0	3.97
1996	9.5	6.72	1.25	2.12	4.19	3.95	0.0	3.18
2001	6.0	4.55	2.81	1.60	1.89	2.91	0.0	2.47

Source: ABS, 1991, 1996, 2001, Census of Population and Housing

Between 1991 and 2001, the highest unemployment has consistently been recorded in the youth category of the Shire. While this is consistent with regional and state trends, the unemployment levels for youth in Nebo Shire are still considerably lower than other Shires, and at times the lowest, in the region. Compared with the youth unemployment rate for Queensland, Nebo Shire's is almost half the state rate.

The Shire enjoys a very low unemployment rate. While mining has opened up some opportunities for local employment both directly at the mine and some increase mostly in part-time and casual work in local businesses, the lowering unemployment rate may also be a reflection of:

- Movement away from the area by people in search of work.
- People dropping out of the labour market with a possible return if employment prospects for them improve.
- Unemployed or under-employed people leaving the area due to the shortage of rental accommodation.

## 5.1.9 Social Economic Index

ABS has a measure—the Social Economic Index—which provides an indication of the relative disadvantage of areas based on a range of indicators recorded in the Census (including low income, low educational qualifications, high unemployment, percentage of single parent households and public housing are all factored into calculation of the index) recorded in the Census. The aim is to allow for objective comparison between areas. The lower the index value, the higher the level of disadvantage.

Of the Shires comprising the WHAM region, Nebo had a Social Economic Index (SEI) of 992 in 1996 while the neighbouring Shires of Broomsound and Whitsunday had SEI of 999 and 1014 respectively. Nebo was the third most disadvantaged area in the WHAM region and marginally more advantaged than the region as a whole, excluding Bowen (1984). In comparison with Queensland, the State SEI is 988 (Department of Local Government and Planning 2002). SEI figures from the 2001 Census have not yet been released.

The low level of relative disadvantage for the Shire measured by the SEI reflects the high rate of employment in the mining industry and very low levels of unemployment.

## 5.2 Discussion

It is expected that Nebo Shire will continue to decline in population and see increasing masculinisation of the population as family groups and women leave the area to be replaced by single and/or temporary men employed in the mining industry. This is in line with demographic trends across the Bowen Basin, where families are tending to locate in larger and coastal centres, mostly because of education, lifestyle and employment reasons. While the high incomes received by mining employees are currently contributing to a relatively high median income in the Shire, a number of potentially significant impacts may be expected in the Nebo region. While several of these are taken up in subsequent sections of this report, continued impacts may be summarised as:

- First, the Shire is already experiencing significant income polarisation with 22% of the population earning less than \$120-399 per week. A significant group of lower income residents are located in the Nebo township. The increase in incomes in the Shire can be expected to have some beneficial secondary impacts on spending and job creation. There may also be some negative impacts if rental prices increase and affected people are not in high income employment areas.
- Second, education and training levels are generally low, suggesting that the population of Nebo Shire is vulnerable to downturns in established economic sectors including mining and agriculture.
- Third, the ability of the Shire to retain those social services needed by families and retirees are likely to remain constrained. This will, in turn, make it more difficult for the Shire to maintain and attract permanent residents.
- Fourth, while quality of life for permanent residents may be enhanced in some ways through increased access to infrastructure such as roads and telecommunications, it is also likely to suffer as participation in community groups and networks declines and they are faced with the immediate presence and demands of a large number of temporary residents.
- Fifth, should plans be realised to open several more coal mines in the Nebo Shire substantial cumulative impacts may be expected.

## 6.0 HUMAN SERVICES

Given the low population base of Nebo Shire and the difficulties this generates in attracting both public and private services, the possibility that mining development may stimulate enhanced service provision represents opportunities for significant social benefits. In introducing this section it is important to note the trend within the mining industry away from company provision of integrated community services. In the past development of the Bowen Basin, many mining companies established townships to service the mines, and provided many of the associated services. In more recent times, companies have focused more on core business activities, relying on government to provide various community services and infrastructure, and on the business sector to provide private goods and services. In this way, developments in the mining industry are similar to developments in any other industrial or agricultural setting, where the developer is not normally responsible for provision of social and human services.

### 6.1 Health

Health services in Nebo Shire—and more so in Nebo and Coppabella townships—are limited. A more comprehensive range of services is located at the coastal centre of Mackay—approximately one hour from Nebo township.

The only full-time medical service operating in Nebo township is the ambulance officer. Other services include a part-time Health and Community Care Service and a visiting Community Health Nurse from Glenden. There is no resident or visiting General Practitioner in Nebo or Coppabella, no chemist, and limited access to over the counter health care products. The absence of allied health services and alternative health practitioners should also be noted.

The establishment of a full time ambulance officer has been largely as a result of the increased mining activity in the area. APC contributes directly to supporting this service. No other medical services have been introduced since the commencement of the Coppabella Mine operations or other subsequent mining activities.

The nearest general practitioner is located at Glenden in the Shire's north or at Moranbah in the Belyando Shire, which also has a range of health care services including hospital facilities, a Community Health Centre that also offers mental health services, and a private general practitioner. The general practitioner service in Glenden has dispensing rights for prescribed pharmaceuticals and is supported by MIM Limited. Glenden also has a Community Health Centre with the services of a Community Health Nurse, and a Medicare refund service (telephone service) is available through the Glenden Rural Transaction Centre.

Until 2000, the Nebo Ambulance Service was a volunteer service. Increased demands from mining (including Coppabella Mine, Hail Creek, Burton and South Walker Creek) and its associated activity, together with increased traffic on the Peak Downs Highway, contributed

to upgrading of the service. The Nebo Shire Council had been negotiating for a full-time service for some years. It is also important to note that the nearest Ambulance Services to Nebo are all approximately one hour away at the centres of Moranbah, Glenden and Mackay. The Ambulance service in Nebo is supported by contributions from various entities including APC for a period of 5 years (with 3 years remaining).

Nebo and surrounding residents are more likely to access the majority of their health services from Mackay, and Coppabella residents are more likely on the basis of proximity to access services for more 'urgent' matters at Moranbah, with the option of Mackay and Moranbah for more routine matters.

Nebo does not have a range of services provided by non-government agencies such as the Mackay Sexual Assault Service, Pregnancy Help, or those provided by religious organisations which incorporate a range of services such as Centacare, Anglicare, and Bluecare. Lifeline services are available via their telephone counselling service. The nearest office of the Department of Families is located in Mackay.

## **6.2 Education**

Nebo and Coppabella have state primary schools covering from Pre-school to Year 7 with enrolments around 65 and 40 respectively. Enrolments fluctuate slightly due to temporary stay families. Students of Coppabella primary school feed into Moranbah secondary school. Glenden has a complete primary and secondary education service from Pre-school to Year 12 with enrolments around 170 students.

Nebo students wanting to remain living at home for their high school years, are bussed daily to Mirani High School. This is a daily (approx) 2 hour return journey mostly on the Peak Downs Highway. The travel component is considered a significant disadvantage to children living at home to complete their secondary education. A number of parents elect to send their children to boarding school for their secondary education. Education is a significant reason for families relocating.

The Nebo School has three teaching staff and, at various times, some teachers at Nebo State School commute from the coastal centre on a daily basis. The school was considered adequately resourced. However, staff did identify areas for improvement including the physical infrastructure which was showing signs of aging and wear and tear. Some of the buildings are designed to be temporary but appear to have become permanent. The school was a participant in the Cooler Schools program to aircondition Queensland State Schools.

Numbers at the Nebo school have not significantly increased due to increased mining activity as there have been few families with school aged children take up residence or able to take up residence.

The EMOS for the Coppabella mine (APC 2002, p. 54), and the EIS prepared for the Moorvale operation, stated that there would be a positive impact on the educational facilities. This was not, however, further defined:

As discussed with the local schools and the Department of Education, the addition of the 250 staff and their families the schooling facilities in Moranbah, Coppabella and Nebo will have a positive impact on the local educational facilities.

APC and other mining companies have supported the school in Nebo directly either with cash contributions for special purpose use, or in-kind support including donations of equipment. Such contributions have been most welcome and enabled activities to proceed or resources secured that would not otherwise have readily been undertaken or obtained.

Where families have rented accommodation in Coppabella, school aged children attend the local school for the period of residence. The population increase in Coppabella connected to mining activities has been mostly 'single' men living at the railway camp. The majority of houses in Coppabella are occupied by railway personnel. Housing availability to 'outsiders' is somewhat limited.

### **6.3 Discussion**

The level and nature of human services in Nebo and Coppabella townships remains relatively unchanged since the advent of Coppabella and Moorvale mining operations in 1998. Previous and subsequent coal operations have not, to date, added any real value to services in the community.

APC in the Moorvale EIS (APC 2002, p. 139) acknowledged the limited nature of facilities and services in Nebo. The most significant benefit has been the establishment of a permanent, full-time ambulance service which is a valuable resource for the entire community, not only mining personnel. APC, along with others, has directly supported this transition with a financial contribution.

The services available to these townships (Nebo and Coppabella) differ significantly from those available at Glenden—a township established to directly support the Newlands Coal Mine. The Glenden example, which includes a more comprehensive range of services, is more typical of the extent to which mining companies in previous decades provided infrastructure accompanying mining ventures.

Moranbah with a population of approximately 6500 (ABS in Department of Local Government and Planning 2001) in neighbouring Belyando Shire offers a comprehensive range of services including schools at various levels, a campus of CQ TAFE, hospital, cinema, community centre, aquatic centre, motels and accommodation centres. Moranbah was established in 1968 by Utah Development Company to house approximately 400 employees of the Goonyella Coal Mine. Since then it has serviced employees of a number of surrounding mines including the Coppabella Mine. Establishment of the Coppabella Mine has helped to maintain a viable population level in Moranbah, but has not boosted the population of Nebo or Coppabella to the extent that additional services have been provided by the relevant authorities.

In times of earlier mining settlement, while companies tended to provide all major household services, there was still dissatisfaction expressed by residents with the inadequacy of various



services and amenities such as health, social services legal services and educational facilities (Hadju 1979). In the current commercial, political and social context in which mining operates, mining companies have been able to withdraw from direct provision of infrastructure other than that which is directly associated with the mining operation.

There would appear to have been no significant enhancement of human services in the community as a result of mining activity. In part, this is because of the proximity of Nebo residents to services in Mackay, and because of the small population base. While it is beyond the scope of this report to decide what level of service provision is acceptable, it does appear that in the absence of unforeseen population increase the most viable options for increased service provision in Coppabella and Nebo are likely to emerge from partnerships between the public and private sectors.

## 7.0 HOUSING

Annual dwelling approvals is one of the key indicators used to measure the level of development activity in an area, as it is seen to reflect the activity that is occurring in one or a number of industry sectors such as tourism and mining. It would seem, however, in this case, that while there has been a high level of activity in mining in Nebo Shire in close proximity to the township of Nebo there has not been a commensurate rise in residential development.

Residential development also impacts on development in other sectors including shops (wholesale and retail) and schools (education).

### 7.1 Demand For and Cost of Access to Housing and Accommodation

Nebo and Coppabella are the two townships in closest proximity to APC's mining developments of Coppabella and Moorvale. Housing was identified by the majority of interviewees as the major social issue affecting the community.

There are a number of stakeholders with a primary interest in the housing issue, including the local government authority, the mining entity, mining workers, local residents and local businesses.

In summary, a number of issues both qualitative and quantitative were raised including:

- Lack of total housing
- Lack of suitable housing
- Housing affordability

Consultation with the various stakeholders would suggest that apparent demand for housing far outstripped supply. It was clearly evident that aside from the quantity of housing available, the qualitative issues such as quality, standard and suitability were equally of concern.

Other issues identified include:

- Potential demand for housing/accommodation
- Conflicting perception over whose is (or should be) responsibility for housing provision
- The appropriateness of current strategies to satisfy immediate demand
- Visual impact of any housing development
- Possible strategies for satisfying demand
- Lost potential development activity
- The capacity of individuals as purchasers to enter the housing market at this location
- Spiralling rent levels

- Differing ‘rules’ applied by financial institutions for home purchases in or around Nebo
- Differing operating model of mining operations

### 7.1.1 Nebo

New residential buildings approved in the Nebo (S) region to the year ended June 2002 were 3 dwelling units with a value of \$0.5 million (refer Table 7.1.1.1). The general trend is a very low level of activity in residential development. APC has built two houses in Nebo township for occupation of APC staff.

**Table 7.1.1.1 New Residential buildings approved Nebo (S) Region**

June	1996	1997	1998	1999	2000	2001*	2002
Number	4	8	1	6	-	1	3
Value (\$,000)	347	1058	116	695	0	94	505

Source:

OESR in Mackay Whitsunday Regional Economic Development Corporation, 2001, Regional Economic Indicators July 2001  
ABS in OESR, 2001, Queensland Regional Profile 2001

ABS in OESR, 2003, Local Government Area Profile Nebo (S) Region, March 2003

Mackay City (refer Table 7.1.1.2) by contrast has more vigorous activity in this area (even accounting for a slowing in 2000 – 2001). From a regional perspective, in the period to 31 March 2001, Mackay City (\$44.6 million) and Whitsunday Shire (\$33.6 million) recorded the largest values of residential building approvals and Nebo Shire the lowest. The local government areas with the highest values of new residential building approvals as proportions of the total values of building approvals were Mirani Shire (87.3 %) and Sarina Shire (73.3%). The lowest proportions were recorded in Nebo Shire (15.9 %) and Belyando Shire (25.0 %) (ABS in OESR, 2001).

**Table 7.1.1.2 New Residential buildings approved Mackay City Region**

	1996	1997	1998	1999	2000	2001	2002
Number	547	525	637	678	399	336	597
Value (\$,000)	68 512	67 370	85 109	95 155	62 010	44 616	81 650

Source:

OESR in Mackay Whitsunday Regional Economic Development Corporation, 2001, Regional Economic Indicators July 2001  
ABS in OESR, 2001, Queensland Regional Profile 2001

ABS in OESR, 2003, Local Government Area Profile Mackay (C) Region, May 2003

The development of mining activities in the region around the township of Nebo has not been associated with any major rise in residential development. Local residents who have gained jobs in the mining industry already have housing, while few people have chosen to move to Nebo and build there. As well, entrepreneurs have not built houses for rental to satisfy that market.

One of the objections raised by Nebo Shire Council in relation to the Moorvale Coal Project (Humphreys Reynolds Perkins 2002, p. 4) highlights that ABS statistics for the Shire clearly show that coal mining development has not resulted in residential population growth. APC has not provided any new accommodation at its coal mine sites in the Shire, either Coppabella or Moorvale. Instead, accommodation in the form of workers’ camps have been established at both Nebo and Coppabella. This is consistent with the requirements of the Nebo Shire Transitional Planning Scheme and Council is supportive of APC’s commitment here.

Other aspects of the Planning Scheme relevant to housing are noted in the Moorvale EIS (APC 2002, p. 27).

*The Nebo Shire Planning Scheme was gazetted in November 2000. The major issue relevant to the Moorvale Coal Project is workforce housing which is covered in the Planning Scheme at Objective (ix).*

*Objective (ix): to consolidate the existing urban areas in order to realise the full potential of investment in these centres.*

*Implementation:*

*A. The Council shall liaise with mining operators or proponents to determine future infrastructure requirements necessary to support the mining industry in the region.*

*B. The Council expects mining operators or proponents to utilise nearby existing urban centres in preference to providing social infrastructure or facilities on site to meet the needs of mining operators and mining community.*

*C. The Council shall ensure that appropriate decisions are made to allow for the rapid and efficient growth of urban areas to accommodate the expansion of existing mines or the commencement of new mines which may rely on these centres.*

Mining representatives identified not only the lack of housing as an issue, but also the suitability of housing. The suitability issue was an overriding concern with many mine employees finding it difficult to secure housing suitable for families. Such housing was almost non-existent for rental or purchase in Nebo, and a recurring theme throughout the consultation was that mine personnel wanting to relocate their families in the closest proximity to the mine have been ‘forced’ to reside at Moranbah.

During a community needs assessment conducted by Hail Creek Coal (2002) in the context of the region affected by its mining development, local respondents rated housing as the least important issue. Issues that rated higher priority, in order of importance were, Developed Skills Labour, Drug/Alcohol Abuse, Unemployment, Attracting New Business, Declining Rural Population, Land Management, and Environment. The apparent low priority of housing in the Hail Creek study is in marked contrast to the views of a range of stakeholders consulted in the course of this study. It is also reported in that study that “while housing and accommodation rated as critical issues across the group interviewed, it is important to note that many participants also saw housing as a strength in their area [which was not defined].”

Of greater priority was developing skilled labour, drug/alcohol abuse and unemployment. Limited information is available on the methodology and actual data collected. Hail Creek has provided substantial on-site accommodation for its workforce which is inconsistent with the Nebo Shire Planning Scheme.

Similarly, housing, while mentioned in the data, did not rate as a high priority issue when in December 2002, members of the community services network CCATCH<sup>1</sup> were surveyed about issues of concern in mining communities (Higham 2003, p. 2). The discussion suggests that housing may be a complementary or underlying issue of some of the other priorities. CCATCH thus recommended ‘the provision of suitable accommodation for families of both employees and contractors in mining towns’ (Higham 2003, p. 10).

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<sup>1</sup> CCATCH—Community Contact Across the Central Highlands is a network that includes 91 community service personnel in 49 government agencies and on government organisations.

The community identified housing as a major issue of concern early on when it became known that APC would develop the Coppabella Coal Mine. During the course of the initial community consultation program in 1998 conducted by APC, the issues of concern which emerged from the stakeholder consultation and included in the EMOS (APC 2002, p. 54) were the effects on communities and their ability to cope with the requirements of the additional workforce. Specific areas included infrastructure such as housing and industrial areas, schools and service providers.

It was evident from consultations undertaken as part of this study that housing was an issue of ongoing importance to the various stakeholders in the community.

The Nebo community has responded in a number of ways to address the accommodation shortage. The most significant event has been the development of workcamp type accommodation by a number of private providers to cater for workers at APC's Coppabella and Moorvale operations and elsewhere. The Marley Accommodation Centre, located in Nebo on the Peak Downs Highway, was the first centre developed and it has since undergone significant expansion. The Shell Junction Roadhouse, located six kilometres to the east of Nebo at the junction of the Peak Downs Highway and the Suttor Development Road (which provides access to Glenden, Newlands, and Hail Creek Mine), has entered the accommodation market primarily servicing the mining requirements. This is part of a broader scale tourism and facilities development known as WOT Island. Nebo Hotel also expanded its accommodation supply with temporary style dwellings located in the grounds of the hotel.

In Nebo, in addition to the hotel accommodation, motel style accommodation is available at the Nebo Hotel and the Nebo Service Centre located on the Peak Downs Highway just east of the Nebo town entry. A motel, along with a retail centre, is part of the complex approved and currently under construction in Nebo township. Nebo Shire Council has constructed three community housing dwellings and approval has since been granted for three more.

While quantity of housing is partly being remedied through these developments, the availability of housing suitable for families remains unresolved, with little development of permanent residential accommodation such as houses or flats. The Nebo Shire Council has initiated a residential land expansion with development of a twelve lot subdivision which backs on to Nebo Creek. These lots were offered by public tender and at the time of the last communication with Nebo Shire prior to formulating the report, responses had been slow and no blocks sold. The Council, however, was confident of sales proceeding. Council representatives also held the view that the lack of a town sewerage system was hampering appropriate development in the township.

A number of interviewees expressed concern over the type of the accommodation services that had been and were being developed and the impact this would have on the community in a number of ways. The visual amenity of workcamp accommodation and the categorisation of Nebo as a mining town may, some believed, have an adverse effect on attracting potential residents to the town and to the development of a tourism industry. Much of the workcamp accommodation is situated in highly visible locations at the entry and exit points to the Nebo township along the Peak Downs Highway. As well as the concern over the aesthetics of single style dormitory accommodation, even in a landscaped setting, there were also concerns about how these buildings would impact on the physical character of the town and its sense of community. However, the housing of mine employees at Nebo is in accordance with Council

policy, and all new housing developments have had to meet Council planning and approval requirements.

The extreme shortage of family type accommodation in the township of Nebo in particular was considered a significant barrier to the development of the community, its sense of community and the level of community participation. While not all mining personnel sought to relocate closer to their place of work, where they indicated a preference to relocate, lack of suitable housing was a major deterrent. In the survey of mine workers reported in Section 5.1.1, respondents were asked to indicate if they would like to move closer to Coppabella Mine. For those who indicated they did want to move closer to the mine *lack of housing for rental* was the main reason for not doing so.

Private individuals interested in entering the housing market encounter restrictions imposed by financial institutions due to the proposed location of the dwelling (Nebo township). The view is that residential developments based on current trends are unlikely to realise capital appreciation and that resale is limited. While rentals are strong, again the dwelling is not considered to increase in value. Whether it be for developing investment housing or private residences, lending institutions are reported to require a higher deposit on housing loans in this location than in the neighbouring coastal centre of Mackay.

### **7.1.2 Coppabella**

Coppabella is only 10 km from the current mine site of APC's Coppabella operation. It is also the closest township to the Moorvale development.

The State Government—in anticipating latent demand for accommodation associated with coal development—has confirmed funding approval for a substantial upgrade of water and sewerage services in Coppabella, as well as other community infrastructure needs (Humphreys Reynolds and Perkins 2002).

Coppabella was established by Queensland Rail in 1971 to house employees working in rail operations associated with transporting coal from a number of the Bowen Basin mines. Essentially it is a 'closed' town. However, some houses are rented by non-employees of Queensland Rail. Some mine workers have taken up residence in the camp accommodation.

Discussions are underway with Nebo Shire Council for normalisation of the township. This will involve the Shire taking over responsibility for the town from Queensland Rail under some appropriate arrangement.

Some mine workers reside at the camp in Coppabella on both a temporary and more permanent basis. Other accommodation is available at the Caravan Park or by renting one of the Queensland Rail houses. Like Nebo, Coppabella is a small community with a limited range of services.

Nebo Shire Council highlighted Coppabella's ideal proximity to be developed for both camp style and permanent accommodation for APC's mining operations. The Council sought a partnership process to enable such development to occur. The Council's preferred approach is for a range of parties to be involved in developing infrastructure to support mining. Council's

financial capacity aside, the debate continues over roles and responsibilities in providing and supporting the required infrastructure.

While Coppabella is ideally located to support the mining operations of APC, the focus of respondents in relation to housing issues tended to be on Nebo township. This may be, in some part, due to the perception that Coppabella is a railway town and not totally integrated into the Shire's community. This perception may change with normalisation.

## **7.2 Discussion**

Housing availability and suitability are clearly major issues for Nebo Shire. The Nebo Shire Council has a policy of encouraging all mine employee accommodation to be located within an existing population centre (Nebo or Coppabella) rather than at minesites. This policy is being adopted for the two APC mines in the Shire, but not for the other mines. The issues with housing associated with the mine development can be categorised into three broad groups.

First, there have been a range of successful developments associated with the provision of short-term, temporary and serviced accommodation. This includes the establishment of a workcamp at Nebo by a private contractor, as well as other developments. Second, there is some community disquiet about these changes in terms of the focus on the short-term accommodation, the aesthetics of the new developments, and the transformation of Nebo into a mining town. Third, there has been very little development of residential housing, even though the Nebo Shire Council has been proactive in establishing a new sub-division. Lack of concrete demand and the cautious approach of banks in lending money for housing in Nebo appear to be key reasons for this.

## 8.0 COMMUNITY INFRASTRUCTURE

The Social Infrastructure Assessment conducted by WHAM in March 2001 (Queensland Department of Local Government and Planning 2001) defines social Infrastructure as a framework which includes:

- Hard physical components such as schools, hospitals, police stations, neighbourhood centres, parks and sports fields
- The service delivery functions undertaken by doctors, teachers, community service organisations and government and
- The structures and processes (both formal and informal) that contribute toward collaborative planning and delivery of services.

Some of the items included above under social infrastructure have been discussed elsewhere in this report. The discussion here will focus on physical infrastructure requirements as well as relevant service delivery functions. There are two key reasons why additional physical infrastructure may be required in Nebo and Coppabella. The first is that there may be specific needs associated with new developments in the towns (eg. additional water supplies for new accommodation facilities). The second is that new infrastructure may be provided in the normal course of a town's development and upgrading of facilities. The provision of a sewerage system in Nebo is an example of the latter.

Responsibility for the provision of community infrastructure is the subject of opposing views in the Nebo community. The provision of social infrastructure is normally the responsibility of state and local governments (and the Commonwealth government in some circumstances). However, the Nebo Shire Council has a small rating base which makes it difficult for the Council to upgrade facilities through existing resources, making it highly dependent on state and Commonwealth Government programs aimed to address infrastructure requirements and service delivery for smaller townships. These include RegionLink (providing access to internet and internet cafes), the Library enhancement program and the Rural Transaction Centres Program.

In the case of major new developments, the *Integrated Planning Act 1997 (IPA)* provides for Community Infrastructure Contribution Plans. This provides an avenue for local government authorities to work in partnership arrangements with developers to enhance the level of services available to communities.

### 8.1 Physical Infrastructure

In terms of public infrastructure, sewerage was the single factor most often raised in the local community. This service was seen to have broad ranging impacts on individual members of the community, as well as on developers and the community's capacity to attract further developments. This was a key area of focus for the Council which it has pursued vigorously.



The sewerage of the town is likely to proceed, and APC have made some financial contributions to the infrastructure development.

One aspect of physical infrastructure that was considered a positive impact of mining activity development was improvement in the main transportation networks. The Peak Downs Highway is the main east-west link between Mackay, Nebo, Coppabella and Moranbah. Improvements, have also been made (albeit not to the same extent) to the alternate route from Nebo to Sarina via the Oxford Downs-Sarina Road and old Bruce Highway.

There is, however, a direct benefit to the mining activity to develop the transportation network. Often there is a political push to upgrade infrastructure that assists major economic development projects. The benefit to the resident community is an added side-effect. It could be said that those servicing the mines from Mackay derive equal benefit from upgrades in transportation, particularly roads.

It was also reported that communication facilities had improved with the advent of mining, particularly mobile telephone coverage. This may not all be attributable to the commencement of mining activities as the Council has lobbied intensively for enhancements to the network.

## **8.2 Sport and Recreation**

A comprehensive sport and recreation facility needs study, with the aim of developing an overall sport and recreation strategy for the Shire, was completed in July 2002. The study was undertaken by GHD and made possible through the Local Government Recreation Planning Program 2001/2002 administered by Sport and Recreation Queensland (SRQ).

The facilities inventory of the Shire undertaken as part of this study is reproduced in Appendix C. In summary, traditional activities were reasonably well catered for. There was some underutilisation of areas that could further be exploited. However, Nebo and Coppabella have a limited range of sport and recreational opportunities compared with Glenden and neighbouring Moranbah. Nebo did not have a multi-purpose venue. Approximately 60% of residents remained satisfied, however, with the standard of local sport and recreation facilities.

Maintaining junior participation rates had presented a challenge to most sports due to relocation of young people out of the Shire for educational or employment opportunities. Team sports had been difficult to maintain and opportunities for more specialist pursuits were limited. Shiftwork patterns also contribute to limited participation in team sports.

The community consultation process conducted as part of the sport and recreation facility needs study identified a number of critical issues and priority needs for future action. These are set out in Figure 8.2.1.

**Figure 8.2.1 Community Feedback and Identified Needs – Sport and Recreation**

<b>Shire-wide Issues</b>	<p>Participant number in organised sport and recreation activities are decreasing, primarily due to shiftwork patterns, population decline, lack of junior participants, public liability insurance costs and a lack of local specialised coaches, organisers and other volunteers. A number of clubs are no longer operating as a result and some facilities are not in use.</p> <p>Shiftwork schedules are often incompatible with typical leisure time.</p> <p>Shire-wide parkland improvement is required. Existing facilities need to be replaced or upgraded to provide appealing settings for informal recreation, particularly for families, children and youths.</p> <p>Participation opportunities for teenagers are mainly limited to organised sports.</p> <p>Improvements at public swimming pools are required throughout the shire to accommodate a broader range of uses, including informal recreation (Eg. picnics and barbeques), aqua-aerobics, infant water familiarisation and hydrotherapy / accident rehabilitation.</p> <p>In smaller communities, greater cooperation between individual clubs is required to improve facility management and use.</p> <p>A Sport &amp; Recreation Development Coordinator is needed, to raise the shire's sport and recreation profile, and assist local communities with projects, training, funding and the organisation of events.</p> <p>Community education and awareness initiatives are required to increase participation and interest in local sport and recreation activities.</p>
<b>Nebo Township</b>	<p>Major upgrades to facilities at the Sport &amp; Rodeo Ground are required. There is strong community support for development of a multi-purpose covered arena at the site in the short term – it would cater for local, regional and state events.</p> <p>A gymnasium is required to cater for a range of activities (eg. fitness classes, weights training, accident rehabilitation).</p> <p>Teenagers have identified needs for a skate ramp, youth club, basketball court and reinstatement of the old BMX mounds.</p> <p>Improvements to Centenary Park are supported, including a rotunda, public toilet block and additional picnic and barbeque facilities.</p>
<b>Glenden Township</b>	<p>Priorities in Glenden are focussed on youth needs, including development of a skate ramp and securing a site for motocross activities.</p> <p>Strategies for the future use of under-utilised facilities need to be determined (Rodeo and Pony Club Grounds)</p> <p>The need for a major upgrade of the Glenden Lions Park has been identified. Furthermore, future town growth indicates that a second neighbourhood park could be required in the longer term.</p> <p>Improvements at the golf clubhouse are necessary to cater for increasing public use.</p>
<b>Coppabella Township</b>	<p>A gymnasium is required in Coppabella.</p> <p>Shade is required over the swimming and spectator area at the pool.</p> <p>The community has identified a need to replace unsafe facilities in Jacques Park.</p> <p>There is support for the establishment of new activity areas catering for motocross / trail bike riding, pony club and BMX bikes.</p> <p>The basketball and tennis courts are in poor condition. Facility upgrades are required to meet community demands.</p>
<b>Lake Elphinstone</b>	<p>The short term priority is to prepare a Management Plan for the lake, which addresses a range of environmental issues, including water quality. The Lake Elphinstone Alliance, comprising representatives from Council, State Government agencies and lake user group, is working towards this goal. The Alliance had participated in this study and recommended outcomes will be considered in formulating the Management Plan.</p> <p>The community identified restoration and revegetation of the foreshore area as a priority.</p> <p>Facility improvements are also required to support community activities at the lake. Priorities include power supply, upgraded sewerage treatment and additional picnic, barbeque and camping facilities.</p>

Source: GHD, 2002, Nebo Shire Sport and Recreation Facility Needs Study: Summary Report

APC workers and contractors have been encouraged to participate in a fitness program initiated by APC's Management Director in an effort to address health and well-being issues among workers. This program, funded entirely by APC, commenced in February 2002, and involved a personal trainer from Brisbane visiting for three days per week to conduct a variety of fitness classes at Moranbah, Nebo and Coppabella. This service ended in January 2003. Currently a fitness instructor from Mackay comes to Nebo once a week. However, full-time amenities are available to APC staff at their gymnasium in Mackay.

At times, the participation among workers has been lower than hoped, due to long shift hours and resultant fatigue. In short, little discretionary time for such activity is available while rostered on shift. As the majority of workers are transient (i.e. on days off employees return to permanent homes elsewhere) they tend not to participate when not rostered on shift either. Locals however are encouraged to take part in the classes and have done so. Recent figures

provided by APC would suggest that attendances have increased and for the five week period 20 May – 18 June, averaged 92.

**Figure 8.2.2 Weekly Attendances at City Fitness Centre  
Nebo Shire Hall**

Date	Attendances
16 April	21
23 April	22
30 April	12
7 May	TBA
14 May	27
20 May	85
28 May	97
4 June	102
11 June	85
18 June	92

Source: Australian Premium Coals, 2003 Records

APC reports that the cost for providing this service is currently \$90,000 per annum. APC also advised that the Fitness Program was soon to be extended to include the Coppabella township increasing the cost to \$150,000 per annum.

The impact of shiftwork on the traditional pattern of leisure activities has been noted in other planning contexts and it is acknowledged that the notion of sport and recreation needs to be reviewed to address these needs. It is reported that pool hours have been adjusted to enable greater access for shift workers. However, usage patterns had not increased significantly in response to these changes.

One other issue identified by both the sport and recreation facility needs study and this study was the lack of recreation opportunities available to teenagers other than organised sports.

### 8.3 Discussion

To date, APC mining operations have contributed to some community infrastructure in the form of improved transport and communication networks, an employee and community fitness program, formal support of the Ambulance service, support for various local community groups, a Community Partnership contribution to local shire administration, and agreements with Traditional Owner groups.

Opportunities exist to improve sporting and recreational facilities in the Shire. However, there does not appear to be any evidence of significant increased demand for sport and recreation services as a consequence of the mining activity. The influx of the largely transient population has not increased participation rates in sport. Other factors influencing sport and recreation activity across the Shire include a general population decline of permanent residents and the relocation of young people out of the Shire for educational and employment purposes.

Responsibility for community infrastructure rests with government. However, many mining companies in the Bowen basin do contribute to community infrastructure and services in local townships, and there is potential for APC to contribute to community infrastructure in this manner. This would involve developing a social infrastructure plan to identify the key requirements of the community, the timelines involved, and the potential funding sources.

## **9.0 CRIME**

### **9.1 Perception of Crime Risk**

Interviews conducted as part of this study uncovered a perception of increased crime risk in Nebo Shire among a number of residents. Although these residents were not aware of large numbers of specific incidents, they believed that the increased presence in the area of largely non-resident males employed to service mining development constituted an increased threat to both property and public safety. Many commented that they hardly recognised the people they now saw in the towns, knew nothing of their backgrounds and felt uncomfortable at venues such as the local hotel. The overwhelming dominance of males among new and temporary residents reinforces these concerns.

The subjective perception of risk is in itself a significant social impact for which mitigation strategies may be considered. Nevertheless, it is also important to consider the actual incidence of criminal offences and trends in the rate of crime over time.

### **9.2 Crime Incidence and Trend**

The two police divisions covered by the Coppabella area are Nebo and Moranbah. Nebo is part of the Nebo Shire, and Moranbah town situated in Belyando Shire. The Nebo police division (statistical) covers the area south to the Isaac River, east along the Peak Downs Highway to the top of Eton Range, to approximately 30km from Sarina and down the former Bruce Highway to the Isaac River, and west along the Peak Downs Highway to within 10km of the Moranbah turnoff, and north to the 'Junction'. The operational area differs slightly with the northern boundary covering up to 70km to the north which neighbours Glenden division and Finch Hatton. The operational area of Moranbah covers the area 40km north toward Glenden, 60km east toward Nebo, 50km west to Clermont and 45 km south to Dysart.

Queensland Police has an officer stationed permanently at Nebo. There is also an officer stationed at Glenden with whom duties are shared as appropriate. There is no officer located in the township of Coppabella. Moranbah has eight officers of which two are Criminal Investigation Bureau (CIB). Dysart and Clermont are the other Police Divisions in Belyando Shire.

As a single officer station a broad range of policing activities are undertaken. It was reported that by far the greater portion of the workload was Queensland transport related activities including, licences, weapons and traffic.

The Office of Economic and Statistical Research (OESR) compiles Small Area Crime Profiles that aggregate local government areas. Nebo and Belyando Shires have been aggregated to present the data on offences (see Table 9.2.1).

**Table 9.2.1 Criminal offences 2000-2001 for Nebo/Belyando Local Government Areas (LGAs) and Queensland by type of offence (Rates expressed per 100,000 persons)**

Offences against property	LGAs		Qld
	Number	Rate	Rate
Unlawful entry with intent			
Dwelling	28	219	1,225
Shop	5	39	248
Other	67	523	651
Arson	1	8	46
Other Property damage	59	461	1761
Motor Vehicle theft	10	77	568
Stealing from			
Dwelling	7	55	234
Shop	1	8	383
Other	63	491	1,442
Fraud	34	267	765
Handling stolen goods	2	16	169
<b>Total against property</b>	<b>313</b>	<b>2,459</b>	<b>8,626</b>
Offences against person	LGAs		Qld
	Number	Rate	Rate
Homicide	-	-	6
Serious Assault	16	125	305
Other Assault	4	31	209
Sexual Offences	13	102	163
Armed Robbery	-	-	35
Unarmed Robbery	-	-	34
Extortion	-	-	2
Kidnapping etc	-	-	10
Other	3	24	103
<b>Total against person</b>	<b>36</b>	<b>282</b>	<b>866</b>
Other Offences	LGAs		Qld
	Number	Rate	Rate
Drug Offences	-	447	970
Prostitution Offences	16	-	15
Liquor (excl drunkenness)	4	24	40
Good order offences	13	243	654
Stock related offences	-	-	2
<b>Total other offences</b>	<b>205</b>	<b>1,607</b>	<b>2,981</b>

Source: OESR, 2002, Small area crime profiles, 2000-2001

Offences against property are the dominant crime category, with approximately nine times as many offences against property as offences against the person and 50% more than other offences including drug, liquor, prostitution and stock related offences.

For each of the three major crime categories (offences against property, offences against the person, and other offences) offence rates were substantially lower than for the State as a whole. Further, no single sub-category recorded a significantly higher rate for Nebo/Belyando than for Queensland as a whole. Several sub-categories recorded no offences in Nebo/Belyando (OESR, Small Area Crime Profiles, 2002-2001).

Of particular interest to this study are the trends in crime rates as these provide a more useful indication of the potential impact of the Coppabella mine and other developments. Crime trends over the period 1998-99 to 2000-01 are shown in Table 9.2.2.

**Table 9.2.2 Crime trends in Nebo/Belyando and Queensland 1998-99– 2000-01**

Crime trends and comparison of rates with Qld Rates expressed per 100,000 persons			
Offences against property	LGAs		Qld
	Number	Rate	Rate
1998-1999	404	3,147	8,019
1999-2000	483	3,794	8,523
2000-2001	313	2,459	8,626
Offences against person	LGAs		Qld
	Number	Rate	Rate
1998-1999	52	409	855
1999-2000	76	593	830
2000-2001	36	282	866
Other Offences	LGAs		Qld
	Number	Rate	Rate
1998-1999	225	1,756	2,834
1999-2000	235	1,843	2,940
2000-2001	205	1,607	2,981

Source: OESR, 2002, Small area crime profiles, 2000-2001

Table 9.2.2 shows that crime increased in all categories between 1998-1999 and 1999-2000 before dropping dramatically in 2000-2001 to rates below those recorded in 1998-1999. This pattern is different to that experienced in Queensland as a whole, for which offences in all three categories increased over the three year period.

Crime statistics reported by the Queensland Police Service for the Police Divisions of Moranbah and Nebo over the period 2000 – 2002 show that the majority of offences are committed in Moranbah, Belyando Shire (see Table 9.2.3).

**Table 9.2.3 Crime by class for Nebo and Moranbah Police Divisions**

Crime Class		Nebo Division			Moranbah Division		
		Period			Period		
		21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000	21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000
1211	Grievous Bodily Harm					1	
1221	Wounding			1	1		6
1222	Assault occasioning bodily harm	2		2	16	8	1
1223	Assault Serious (Other)						
1292	Assault Common	1			8	5	
1293	Assault Police				4		1
1361	Rape				2	2	3
1362	Attempted Rape						3
1363	Indecent Assault on Adult						1
1364	Indecent Treatment Child				1	1	2
1371	Unlawful Carnal Knowledge				1		
1393	Wilful Obscene Exposure	1				1	
1932	Endanger life on Railway		1				
1991	Armed so cause fear/alarm	2	3		1	1	1
1992	Other Offence Against Person				2	1	1
1993	Unlawful Stalking				3	2	1
3111	Burglary, with breaking	1	1		20	17	7
3112	Burglary				2	1	2
3113	Burglary Violence & Break						1
3114	Burglary, with violence	1					
3121	Shop, B & E with Intent				11	7	1

**Table 9.2.3 Crime by class for Nebo and Moranbah Police Divisions**

Crime Class		Nebo Division			Moranbah Division		
		Period			Period		
		21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000	21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000
3122	Enter with Intent, Shop					1	
3181	Premises, Break & Enter with Intent	3	3		15	53	14
3182	Enter with Intent, Other Premises	1	4		3	1	2
3192	Possess Thing Unlawful Entry				2	3	
3211	Fraud Valueless Cheques				3	7	1
3212	Fraud Bank/Credit Card	1			43	8	3
3213	Forge/Utter NEC		1			1	
3218	Fraud Encumbered Goods					1	
3219	Fraud Imposition, NEC		1		1		1
3221	Steal as a Clerk/Servant			3	4	27	
3223	Embezzlement						
3224	Steal by Agent/Collector						1
3311	Receiving Stolen Property				4		
3321	Possess Property Suspected Stolen						
3323	Tainted Property	1			1		
3511	Motor Vehicle - Steal			1	9		7
3521	Bicycle Steal				7	3	5
3581	Vehicles - Other				3	1	
3911	Stealing from the person	1					
3921	Stock - Kill Intent Steal			1			
3922	Stock - Steal			1			
3931	Shop - Stealing				2	2	1
3991	Steal Dwelling House				11	7	7
3992	Steal Other Spec Build		4	3	49	14	18
3994	Vehicle, Steal from / Enter with Intent	5	4	1	17	14	17
3996	Steal things sent by Post				1		
3998	Stealing by Conversion					0	1
3999	Stealing (Other)	4	5		15	15	8
4111	Arson - Build/Structure				2		
4191	Kill, Maim, Wound Animals				2		
4192	Wilful Damage by Fire	1			4	2	1
4193	Graffiti				1	3	
4194	Wilful damage, NEC	4	3	1	34	39	24
5252	Pervert Course of Justice				2		
5331	Resist Arrest Etc	1	2		17	9	2
5332	Disobey Move on Direction				1		
5495	Domestic Violence				6	4	2
5496	Justice Procedures NEC				1		
5511	Unlawful possession Concealed Firearm				1	2	
5512	Unlawful possession Firearm Other				7	4	4
5521	Bomb (Possess or Use)				7		
5581	Possess Dangerous Article					2	
5591	Weapons Act (Off NEC)				8	3	8
5915	Liquor Act (Other)				6	2	
5933	Unlawful on Premises/Trespass			1	5	9	2
5992	Disorderly Conduct				16	8	5
5993	Indecent Behaviour				4	9	
5994	Language, Obscene Etc				12	9	2
6191	Drugs, Possess and/or Use	2	1		30	32	7



**Table 9.2.3 Crime by class for Nebo and Moranbah Police Divisions**

Crime Class		Nebo Division			Moranbah Division		
		Period			Period		
		21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000	21 Jan - 31 Dec 2002	1 Jan - 31 Dec 2001	21 Jan - 21 Dec 2000
6591	Drugs, Unlawfully Sell						
6691	Drugs Produce				4	2	1
6991	Drugs, Permit Premises				1	1	
6992	Possess Thing Drug Use	2			19	20	11
6993	Receive/Poss Sale of Drug					1	
6994	Drugs Offence (Other)				2	1	
7111	Drink Drive 0.15 & over			1	17	12	10
7112	Drink Drive 0.8 to 0.14	1		2	42	32	15
7113	Drink Drive 0.05 to 0.07			1	1	12	3
7115	Fail Provide Specimen Breath/Blood					2	1
7241	Dangerous Oper of Vehicle			2	2	2	
7321	Drive Whilst Disqualified/Suspended			1	14	10	5
7491	Interfere Mechanism Vehicle						1
8898	Other Offences (Qld) NEC				37		
<b>Total Offences</b>		<b>35</b>	<b>33</b>	<b>22</b>	<b>567</b>	<b>437</b>	<b>221</b>

Source: Queensland Police Service, 2003

Table 9.2.3 shows the level of reported crime in Nebo Division to be extremely low, while Moranbah Division has notable recordings of assault, rape, burglary and break and enter, motor vehicle theft, stealing, wilful damage, disorderly conduct, drug offences drink driving. It is notable that while Belyando Shire has a population approximately four times as great as that of Nebo Shire, the difference in crime rates is considerably greater than this.

The Nebo Police Division covers approximately half the Nebo Shire's area. Belyando Shire includes Moranbah Division, as well as Dysart and Clermont Divisions.

The trend overall from 2000 to 2002 shows a consistent increase in the crime levels for both Divisions. Some classes such as assault, stealing, resisting arrest and drink driving show a marked increase in 2002 over 2001. Domestic Violence reports have increased by a total of 4 in the period 2000 – 2002.

### 9.3 Discussion

While it is likely that some crime categories such as domestic violence are under-reported, it certainly appears to be the case that by State standards Nebo Shire is an extremely safe place with very low levels of crime against both people and property.

It is impossible to determine a direct cause and effect relationship between operation of the Coppabella mine and changes in crime rates in the surrounding Local Government Areas and Police Divisions. In large part this is due to the diverse residence patterns of mining personnel and the location of staff from a number of other mining operations and industries in nearby towns such as Moranbah. Nevertheless, it does appear crime rates rose during the construction and early operation phases of the Coppabella mine, dropped and then rose again. This may be

entirely coincidental and does not take into account other activities occurring in the Shire at the time.

Crime incidence data, therefore, appears to contradict the belief of some Nebo residents that mine employees housed in temporary accommodation in Nebo Shire during their shift rotation—and thus with no permanent links to the area—will be more likely to engage in anti-social activities. In fact, the data suggests the opposite, that mine employees housed temporarily in Nebo Shire are extremely well behaved. This may be because of the strict workplace policies enforced by APC in relation to their Fitness for Duty – Alcohol and Other Drugs policy. Employees are routinely tested for alcohol and other drugs to ensure compliance with the policy.

## 10.0 COMMUNITY PARTICIPATION AND INTEGRATION

Two major issues emerged in relation to community participation and integration. The first related to the lack of interaction in general between permanent and temporary residents, while the second related to the extra burden that was placed on voluntary organisations such as the State Emergency Service which were forced to cope simultaneously with reduced membership and increased demand.

### 10.1 Permanent - Temporary Resident Interaction

As detailed in Section 5.1.1, Nebo has experienced a dramatic rise in its single male population, with an even greater increase in the number of temporary residents housed in camp-style accommodation in or adjacent to Nebo and Coppabella during their shift rotation and then returning to permanent residences elsewhere between rotations. These temporary residents are also nearly entirely male and employed to work in the mining industry.

Permanent residents note a lack of participation by temporary residents in community activities and events. They believed that with very little integration of the temporary residents in existing community networks a certain sense of “us” and “them” had developed, although they also noted that there had been little overt friction or conflict. Barriers to participation in community activities were believed to include shift patterns, the temporary nature of residence, and commitments to families, friends and activities elsewhere. Permanent residents believed it unlikely that temporary residents with homes elsewhere would consider themselves part of the community and develop any commitment to it.

In the survey of miners, respondents were asked about their current levels of involvement with the Nebo community, and responses are summarised in Table 10.1. There are low levels of involvement apart from general entertainment, and some use of Nebo Shire services.

**Table 10.1 Involvement of Coppabella miners with Nebo community**

Involvement category	Number of responses	% of responses
Played in sporting events	6	4.51
Attended sporting events	10	7.52
Participated in cultural events	2	1.50
Attended cultural events	12	9.02
Attended general entertainment events	50	37.59
Used medical services	1	0.75
Used emergency services	10	7.52
Used educational services	2	1.50
Used Nebo Shire Council services	18	13.53

The lack of community participation also affects volunteer community organisations including service organisations and sporting clubs. Members of several community groups—which have traditionally provided a focal point for community networks and interaction—

complained of increasing difficulties attracting sufficient members to remain viable organisations. In smaller communities such as Nebo, leadership of community organisations often falls to the same small group of people. Without an injection of new members, such organisations will eventually fade away and the services the organisation provide—both tangible and intangible—will be lost to the community. These problems of diminishing involvement in community groups is common to many smaller towns.

This void in community participation has been noted in studies of mining communities elsewhere. Hadju (1979 p. 62), for example, found that within ‘closed’ mining communities where the mining company, as employer, has built a town with every conceivable service, this tended to smother community spirit and foster a disinterest in community affairs. The common thread between closed communities and those like Nebo may be a perception on the part of mine employees of relative impermanence rather than the paternalism or otherwise of their employer.

## **10.2 Volunteer Community Service**

While the lack of participation among mine employees in community groups and activities affects all community groups in Nebo Shire, there are particular issues raised by the lack of participation in voluntary emergency service organisations such as the State Emergency Service and Volunteer Rural Fire Brigade.

The presence of the mine and its workforce in the area has been fundamental to the establishment of a full-time permanent Ambulance Officer in Nebo. Prior to this, ambulance services were provided in Nebo on a volunteer basis with the nearest permanent services located approximately an hour away at Moranbah, Mackay, Glenden and Dysart. However, with the increased demand for ambulance services by the mine more than a volunteer service was required. Substantial monetary support has been provided to establish the permanent role of the ambulance from mining companies, contractors and a private utility. This is a significant positive impact.

Branches of the State Emergency Service and Volunteer Rural Fire Brigade are active in the Nebo area. However, with the shifting demographic profile of the Shire and loss of permanent long-term residents, memberships of the SES and the Rural Fire Brigade have been declining. This has created a double burden for remaining members for at the same time that membership of these organisations is declining, the number of people temporarily located or moving through the Shire has increased. Volunteers find themselves called on to respond to an increasing number and complexity of emergency situations. In particular, with more road traffic there is more activity in relation to traffic accidents and volunteers are confronted with having to cut people out of cars and deal with fatalities on a more regular basis (see Section 11.0 Traffic and Fatigue for details of motor vehicle accidents).

The increased demand for these essential services requires more from these volunteer services, yet the volunteer base has not expanded from the increased working population or more permanent residents.

### **10.3 Discussion**

Mining has brought with it an influx of population and some increased demands for services. Despite this, there is a distinct lack of interaction between permanent and temporary residents with the latter participating little in community activities. Where these activities relate to the provision of community services—volunteer emergency services in particular—temporary residents can be seen to place a significant burden on permanent residents that is not reciprocated. Such services have been forced to cope simultaneously with reduced membership and increased demand. APC has made some contribution in this area through its financial assistance of the ambulance service and various community groups.

## 11.0 TRAFFIC AND FATIGUE

Almost all community members and other stakeholders interviewed during the course of this research raised the issues of increased road traffic and fatigue-related accidents as major impacts of the Coppabella mining operation and with mining and development in general. Since the opening of the mine they believed that the area had experienced increases in both commuter and heavy vehicle and commercial traffic, and that there were increased incidences of speeding, fatigue and related accidents.

One participant reported having witnessed the aftermath of two fatal single-vehicle accidents involving mine employees outside their property over the last two years. In addition to the increased potential risk of being involved themselves in an accident, residents reported a range of impacts including:

- the psychological impact, or fear, of either being involved in or witnessing a road accident, and
- the extra burden placed on voluntary emergency services to respond to road accidents (see Sections 10.2 and 10.3).

Potentially off-setting this, participants also acknowledged the positive impact of improvements that had been made to transport infrastructure to accommodate increased demand from the mining industry. The Peak Downs Highway has been continually upgraded to service the needs of mining and mining communities.

### 11.1 Issues associated with Shiftwork, Fatigue and Traffic

Over the last three decades, Australian mining has moved from the traditional mining ‘company’ to a home and away operation which has changed the service and commuting arrangements. While some participants in the debate over the impacts of these changes believe shift rosters, commuter and/or home and away arrangements to be significant factors that should be further explored in relation to fatigue, mine workers often favour (and have negotiated for) such rosters for a variety of reasons including economic and social factors.

Nevertheless, it has been acknowledged by mining operators that fatigue both on and off the job needs to be managed. The *Guidance Note*<sup>2</sup> for the Management of Safety and Health Risks associated with Hours of Work Arrangements at Mining Operations has emphasised the management of potential health and safety problems associated with hours of work arrangements. The *Guidance Note* indicates the potential problems of fatigue associated with twenty-four hour operations and the distinct challenges they pose to human physiology, particularly for personnel working in hazardous environments. Irregular work and sleep patterns are associated with increased work-related fatigue, decreased alertness and increased

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<sup>2</sup> This was first published in April 2001 after consultation between the mines inspectorate, unions and mine management, and the Department of Natural Resources and Mines.

accident risk, especially in the early morning hours (Higham 2003). It is thus not unreasonable to speculate that the cumulative effects of fatigue may be an exacerbating factor in traffic safety for mining commuters and other road users. Indeed, according to the West Australian Office of Road Safety, shift workers are six times more likely to be involved in a fatigue-related road crash than other workers.

Within Queensland, the issues of fatigue and road safety have been raised in a number of forums including the Ministerial Regional Community Forum in Capella, Central Queensland in February 2002—a forum that highlighted a range of issues related to the health, safety and social aspects of mining employment practices. At Parliamentary level, Police Minister Tony McGrady stated in Parliament (Hansard 10 May 2002, in Higham 2003) that since 1997 there had been more than 200 accidents on the Peak Downs Highway between Walkerston and Clermont. Further, the Parliamentary Travelsafe Committee noted, in its May 2002 report, that driver fatigue is an important contributing factor to road crashes on rural roads and that reduction of fatigue-related crashes has been listed as a priority in all Queensland Transport Road Safety Action Plans since 1996.

A variety of legislation—including the Coal Mining Safety and Health Act 1999 and the Mining and Quarrying Safety and Health Act 1999 (which came into effect on 16 March 2001)—places a legally enforceable obligation on employers to develop, in conjunction with their employees, fatigue management systems.

SIMTARS—established in 1989 by the Queensland Government—has played a role in continuous improvement of health and safety within the mining and related industries. Through the Australian Coal Research Program, SIMTARS has provided training sessions to assist in the management of fatigue.

## **11.2 Traffic Accidents potentially associated with Coppabella Mine**

The main traffic route associated with the Coppabella mine is the Peak Downs Highway which connects Mackay to Nebo and mines and mining communities beyond in the Bowen Basin. An alternate traffic route journeys through Sarina along the old Bruce Highway toward Marlborough. There is a connector road from this route to the Peak Downs Highway. These roads would capture the majority of commercial traffic to and from the mines in the Mackay hinterland including Coppabella and Moorvale mines, as well as miners commuting to and from work.

Road use statistics (see Appendix D) indicate that traffic volumes, including commercial usage, on these roads have increased with some fluctuations (some attributable to reporting changes). During the operation of a work roster, mine employees are normally bussed between the various workcamps and the mine. Some employees commute directly (eg to Moranbah). The bulk of additional traffic is associated with miners travelling between the Nebo region and their residence area at the beginning and end of a rostered period of ‘days on’.

Importantly, it is not possible to apportion traffic and fatigue issues directly to the APC mines. There are a number of other mines in the Bowen basin that also use rostered

workcamp arrangements. Also, not all miners live on the coastal hinterland, with some returning after shift to places as nearby, on the one hand, as Moranbah and Glenden and as far, on the other, as Mt Isa, Charters Towers, Townsville, the south east corner, and even New South Wales.

Figures provided by Queensland Transport for the period 1998-2002 for the two main access routes from the coastal centres to the Moranbah Access Road turnoff indicate that there have been more than 200 accidents for each of these roads (see Tables 11.2.1 and 11.2.2). Further breakdown of the contributing circumstances indicates that driver fatigue/falling asleep was a contributing factor in 28 and 26 cases respectively. A single crash may, of course, involve more than one contributing factor (Queensland Department of Transport Road Crash Data 1998-2002).

**Table 11.2.1 Severity of road crashes on 'Peak Downs Highway' occurring between Mackay and Moranbah Access Road turn-off from 1 January 1998 - 30 September 2002**

Year	Fatal crashes	Hospitalisation	Medical Treatment	Minor Injury	Property damage	Total crashes
1998	2	11	9	4	21	47
1999	1	13	6	7	15	42
2000	0	13	7	7	14	41
2001	1	15	7	7	15	45
2002	2	3	8	5	11	29
<b>Total</b>	<b>6</b>	<b>55</b>	<b>37</b>	<b>30</b>	<b>76</b>	<b>204</b>

Source: Queensland Department of Transport Webcrash Data

**Table 11.2.2 Severity of road crashes on 'Oxford Downs - Sarina Rd' 'Peak Downs Highway' and Marlborough - Sarina Rd occurring between Sarina and Moranbah Access Road turn-off from 1 January 1998 - 30 September 2002**

Year	Fatal crashes	Hospitalisation	Medical Treatment	Minor Injury	Property damage	Total crashes
1998	2	12	12	5	24	55
1999	1	15	9	9	21	55
2000	0	14	8	8	15	45
2001	1	16	8	8	17	50
2002	2	7	9	6	15	39
<b>Total</b>	<b>6</b>	<b>64</b>	<b>43</b>	<b>36</b>	<b>92</b>	<b>244</b>

Source: Queensland Department of Transport Webcrash Data

While road crash levels remain steady from 1998-2001, the tables above indicate a dramatic drop in road crashes in 2002. The various initiatives in relation to fatigue management by mining companies and others may be a contributing factor here, as the nature of shift rosters has not changed significantly.

The EIS for Moorvale (APC 2002, p. 120) states that 70 additional employees travelling on the Peak Downs Highway would not have a major impact on traffic. Carpooling and the possible use of minibus arrangements are considered to greatly reduce the number of additional vehicles on local carriageways. While this may hold true for commuting for mine workers, these arrangements do not address the increased usage due to service vehicles.



### 11.3 Local Initiatives

Fatigue has become something of a priority for mining enterprises in the broader context of health and safety management. Due to the nature of the operation at Coppabella and Moorvale Mines, much of the responsibility for this rests with the mine contractors.

APC has been vigorous in addressing fatigue issues through its comprehensive Fitness for Duty Policies (APC Procedures 026 and 051) which specifically address *Alcohol and other Drugs, and Fatigue, Physical and Psychological Impairment* which provide stringent procedures in an attempt to minimise impacts from fatigue both on and off site.

Within the community and the mining operations, it is evident that all are aware of the potential problems of fatigue, and that fatigue is a contributing factor in some of the traffic accidents (with some resulting in fatalities). The scope of the impact of fatigue and its interrelationship with mining practices warrants closer and more rigorous examination.

Other local initiatives include the Road Accident Action Group which has met monthly in Mackay. This group is coordinated by the Queensland Police Service (QPS) with representation from the Queensland Main Roads, Queensland Transport, Local Government, RACQ, NRMA and the heavy vehicle industry. In addition, QPS and Queensland Health have jointly trialled a fatigue and drink driving awareness program for mine workers.

### 11.4 Discussion

Traffic volumes have increased as a result of the APC operations at Coppabella and Moorvale. The direct impact of this on road safety is not easily discerned from the available data. It is possible to conclude that continual attention to issues of fatigue management will be necessary throughout the life of the mine. There are clear indications that APC and its contractors have taken this responsibility seriously.

A further issue is evident, however, in relation to the psychological impact experienced by other Nebo Shire residents of increased fear of road accidents. This suggests a need to both communicate relevant information of fatigue management and road safety programs to the wider public and to look for opportunities to involve other community members in such initiatives.

## 12.0 COMMUNITY IDENTITY

Community identity contains a number of dimensions. At its most basic level, identity refers to how the members of any given community understand themselves and what it is that makes them a ‘community’ rather than a collection of isolated individuals. This involves more than sharing a postcode. It may include features that make a place or group unique, as well as the ways in which people interact—helping neighbours, pulling together in emergencies, and so on. The flip side to this is how communities are perceived by others. A great deal of community identity is based on the beliefs people have regarding what they are known for outside their own locale or group. Communities often attempt to develop and project identities that they believe will stimulate positive social and economic development by attracting tourists, residents and investment in a manner consistent with existing lifestyles and aspirations. When development does not appear to support such lifestyles and aspirations it encounters opposition. Of course, given that within any one town or shire we can expect to find a variety of views on what community identity should be based on, we can also expect to find a variety of views on whether proposed developments will support it.

### 12.1 Perceptions of ‘Nebo’

The consultation would suggest that residents do not perceive Nebo Shire as a ‘mining community’ despite mining being the largest employer by industry. Hadju (1979, p. 47) notes that mining towns have several unique characteristics and hence differ quite markedly from other non-metropolitan settlements.

While there has been significant mining development in the Shire, the identifiable communities within the Shire have quite different perceptions of themselves due to the different motivations for their development. There are three townships—Nebo, Glenden and Coppabella.

Nebo is the administrative base of the Shire, hosting the local government administrative centre and servicing a traditional rural base. Glenden is the largest town with a permanent resident population of around 1300 persons. The settlement was established in the early 1980s to house the employees of Mount Isa Mines Limited who were developing Newlands Mine (30km from Glenden in the Bowen Shire). Coppabella was established in the early 1970s by Queensland Rail to house Queensland Rail employees involved in operations associated with transporting coal from a number of mines.

Essentially there is a small country town supporting its traditional rural base (Nebo), a ‘mining town’ (Glenden) and a ‘railway town’ (Coppabella), each with unique characteristics. Residents of these respective communities identify quite strongly with their particular place of residence.

To date, there has not been any large scale integration of the mining workforce into the Nebo or Coppabella communities. This may be due in some part to the nature and characteristics of

the workforce—single males, shift rosters, and relatively temporary residents. For those resident in Nebo only when on shift (which is the majority of workers) the pattern is eat, sleep and work. They tend to exist somewhat apart and in a self contained manner. This limited participation in the community has limited any influence or challenge to community cohesion. However, some in the local community see this satellite community of workers as having negative impacts. The workers are mostly male, single or live as single men and do not take part in the community are not ‘contributing’ to the community and as such are lost resources.

Changes were also noted in the activity patterns of residents due to the influx of workers and the resulting change of character of social contexts that come with more people and people with different social needs. These included not going, or not going as frequently, to certain establishments. Long-term residents believed that the atmosphere of some public places had changed, that they now felt uncomfortable there and that they experienced a diminished level of service to that which they experienced prior to the introduction of mining. In short, they felt pushed aside in their own town. At the same time, however, the opening of new establishments, such as a restaurant in Nebo, were seen as positive.

## **12.2 Links to Economic and Social Development**

The historical development of the Shire was focused on beef production. While there has been significant mining development in the Shire, until the commencement of mining operations at the Coppabella sites, as well as Moorvale, the Nebo and Coppabella communities were largely unaffected by mining activity.

Any challenge to the status quo brings with it some anxiety, even if one favours and is supportive of the change. The Shire’s leaders and administrators argue that the community needs to take an enduring view; that is, planning and decision-making must be undertaken with a view to remembering that the Nebo Shire and township were there before mining and they will be there afterwards. They were concerned to ensure that mining did not have an overall negative impact on the community, and that the Shire’s resources were not depleted in providing for the requirements of mining without recompense. Emphasis was placed on a desire to work in conjunction with mining developers and develop partnerships to pursue strategies that would have some clearly enduring benefits for the Shire. The nature and scope of such arrangements have caused some dissension in Council and in the community.

The general theme that emerged from the consultation was that mining was not considered a major threat to this community. However, some things definitely had changed as a result of activities associated with the mine. Residents considered that mining operations so far had mostly been beneficial to the community. There was a general consensus that some businesses had received significant economic benefit, while the whole community benefited from better transport and telecommunications linkages. Some planned initiatives were also considered to benefit the existing community as well as service ‘newer’ demands. Other benefits were not so readily identified and some issues of concern were raised. Some elements of the community did not believe that they had experienced any benefit from mining, and were not identifiably better off than prior to the mine’s existence or mining generally occurring in the Shire. While these issues are discussed in greater depth in other sections of this report, it is important to note that community perceptions of benefit play a major role in determining

whether changes in community identity are seen as positive or negative, with flow-on effects for the assessment of further change.

To date, there have emerged two opposing perspectives on development in Nebo Shire among permanent residents. One group see change as more or less inevitable and believe it is important that they attempt to manage it in the community's interest rather than having it imposed. The other group believes they have received few, if any, benefits from existing development and do not see the changes that have resulted from development as positive. They are resistant to further change. Although conflict between the two groups has not been directly associated with the mine it is likely that differences will be exacerbated as further development occurs. In other words, the impact of the current Coppabella mining operation may be seen as quite minor in terms of this conflict over community identity, but when viewed in relation to the cumulative impacts that are likely to emerge over time may be seen as significant.

The Shire's administrators and the residents did not consider the advent of mining to be the answer to all the problems in the localised community. It was also acknowledged that 'mining' should not be favoured or especially accommodated over the activities of the Shire's existing residents. While social issues had been a concern prior to the mine's operation, some of these may have been exacerbated by the mine. A recurring example raised during the consultation was housing and accommodation, with limited quality and quantity and resultant upward pressure on rents as demand significantly outstripped supply. This may reduce the capacity of the Shire to develop complementary development paths that reduce dependence on mining.

Again, these issues are discussed in more depth elsewhere. The important point here is that as a result of their views on these matters, local leaders are keen to ensure that the identity of Nebo does not come to rest solely on mining. There was an underlying concern in the community that the Shire was becoming known as 'a big quarry' due to the number and scope of mining developments. There appears to be a perception in some sectors that there is a negative social stigma attached to being known as a 'mining community'. Mining communities may thus come to be perceived as unpleasant, or undesirable, places to work and live. Consequently, they become places to visit for work and then to leave for residence and recreation. This severely limits a community's capacity to attract more longer-term residents.

Given the concerns discussed above in relation to mining, community identity and development, the absence to date of a development boom in Nebo was not considered entirely negative by members of the community. However, Council was keen to see some benefits accrue to the townships and Shire through managed development over the long-term. There was a view that benefits should be accruing locally and concern that they were not, as yet, doing so. There was believed to be a need to explore opportunities to capture the benefits of mining in the Shire. Council saw that it has a responsibility to ensure that benefits accrue broadly from mining to support the lifestyles and aspirations of residents of the Shire.

## 12.3 Discussion

Any major development in a community by its very existence is accompanied by a degree of involuntary change and additional pressures to change. This impacts on and challenges prevailing community identities. There will be many competing influences which will challenge community cohesion. A community will accept or reject these influences and shape its destiny (make decisions about its future) based on its self-perception and willingness to change. The negative (and positive) experiences of residents with existing changes influence their attitudes towards further development, the direction of this development and how it is managed. In an effort to capture the benefits of mining, the processes of local government are equally important as the decision outcomes. Both ultimately impact on community identity.

While interested in capturing the benefits of mining, residents of Nebo township (and at a Shire level) would be reluctant to be perceived as a ‘mining community’ because of both negative internal and external perceptions that accompany this. Some residents acknowledge that to benefit from mining, changes will occur and others are anxious over any changes. Residents are keen to ensure that mining has a positive influence on their community and that they have some control over shaping their destiny—one which will endure beyond the life of mining in their Shire—to ensure the community in which they live fits their desired perception.

## 13.0 ECONOMIC AND INDUSTRIAL BASE

Economic impacts of the Coppabella coal mine have been discussed in Part 1—Economic Impact Assessment — of this report. However, changes in the economic and industrial base of the Nebo Shire are discussed briefly here also due to their secondary social impacts; that is, their influence on the social life of Nebo Shire through changes in the demographic profile of the Shire and in the ways people work, interact and so on.

### 13.1 Industrial Base

The Nebo Shire has a traditional industrial base of agriculture, principally beef production.

**Table 13.1 Industry Composition by Region & Shires versus Queensland**

Industry Categories by Number of establishments - September 1998											
Industry	Bel-yando	Bowen	Broad-sound	Mackay	Mirani	Nebo	Sarina	Whit-sunday	Total	% of Qld	Qld
Agriculture, forestry and fishing	203	292	211	939	368	99	299	237	2648	7.66%	34,554
Mining	26	6	17	17	1	4	2	2	75	9.04%	830
Manufacturing	20	24	5	237	13	5	16	55	375	3.39%	11,071
Electricity, gas and water supply	9	9	8	17	2	3	3	8	59	8.09%	729
Construction	54	74	17	513	13	4	44	123	842	3.88%	21,697
Wholesale trade	15	31	11	289	7	1	9	59	422	3.25%	12,973
Retail trade	88	120	39	708	21	13	47	184	1220	3.98%	30,660
Accommodation, cafes and restaurants	32	45	15	174	14	6	24	119	429	5.47%	7,844
Transport and storage	30	43	28	259	23	10	44	130	567	5.42%	10,464
Communication services	10	4	2	26	4	2	3	10	61	5.29%	1,154
Finance and insurance	12	18	6	160	1	2	6	22	227	3.47%	6,544
Property and business services	34	51	17	491	7	5	34	164	803	2.69%	29,830
Government administration and defence	5	9	3	23	1	3	3	8	55	3.68%	1,493
Education	16	20	14	102	12	5	11	17	197	4.43%	4,446
Health and community services	37	53	28	258	9	6	17	46	454	3.38%	13,414
Cultural and recreational services	15	12	3	78	10	5	6	46	173	4.18%	4,141
Personal and other services	33	33	25	177	12	7	17	61	365	3.84%	9,493

Source: Mackay Whitsunday Regional Statistical Profile – Labour and Industry p. 11

Until the 1990s this was the principal employer by industry. Mining has also played a role in the Shire's development starting with the Mount Britton gold rush in 1881 and continuing

with the discovery of copper at Mount Gotthardt in 1873, the establishment of the first coal mining lease at Bee Creek in 1949 and commencement of serious geological surveying in 1950 (Mayes, 1991).

More recently mining has resumed in earnest within the Shire boundaries with the commencement of operations South Walker Creek and the Burton Mines. The opening of APC's Coppabella Mine and the development of the Moorvale deposit have had greatest direct impact on Nebo township and its surrounds (including Coppabella) due to the proximity of the operations.

The business register (OESR 2003) indicates that as of September 1998, 180 businesses in Queensland were situated in Nebo (S) region. The majority of these businesses (99) representing 55% of Shire businesses were in the category agriculture, forestry and fishing, followed by the retail trade (13) comprising 7.2 % of Shire businesses (Refer Table 13.1).

Agricultural and mining production are the two major industries of the Nebo Shire with beef production the main agricultural activity. The value of total agricultural production in Nebo Shire is \$24.9 million, the lowest of the seven local government areas that make up the Mackay Statistical Division (see Table 13.2).

**Table 13.2 Gross value of agricultural production by local government area, Mackay Statistical Division, year ended March 1999.**

Local Government area	Total \$M
Belyando (S)	92.8
Broadsound (S)	45.4
Mackay ( C )	151.8
Mirani (S)	47.3
<b>Nebo (S)</b>	<b>24.9</b>
Sarina (S)	69.3
Whitsunday (S)	52.6
Total Mackay Statistical Division	484.0
Queensland	6,384.3
Mackay Statistical Division as a percentage of Queensland	7.6

Source: ABS, Agriculture Queensland (unpublished data) in OESR 2001

Currently there are five mining operations underway in the Nebo Shire with a further seven projects under study or consideration (ABS data quoted in OESR 2001).

The Mackay region is responsible for 30.5 percent (\$2,442.9 million) of Queensland's total value of mineral production. (Queensland Department of Natural Resources and Mines in OESR 2001).

## 13.2 Business Expansion and Opportunities

The industrial base of Nebo Shire and township has slowly expanded in response to the increased mining operations in the Shire and specifically in the Nebo/Coppabella locale. There is little doubt that without mining, this expansion would not have occurred. However,

it was suggested by several stakeholders interviewed during the course of this study that there has been little benefit to existing industries and residents from the limited expansion in services associated with an expansion in business activity. Much of the new business activity is oriented towards servicing the mining sector with accommodation and associated services, transport and so on. A small number of businesses have established themselves offering trade services (eg. electrical) which are available to existing businesses and residents. It is often the case, however, that smaller operators servicing mining clients have little capacity to undertake additional work due to the nature and demands of servicing mining clients.

Nebo Shire Council, in an effort to capture some economic benefits from mining, established a 12 lot industrial estate. Although initially slow to secure buyers, over the last 12 months this has had good take-up. Some of the businesses to establish themselves there are new enterprises while others are 'branch' or 'satellite' operations of business located elsewhere in the region such as Mackay. A real estate agent and auctioneer linked with a major national company has established operations in the Shire where previously such services were imported from Mackay or similar centres.

Despite the Shire hosting a number of large mining developments, direct economic benefits and an associated expansion in the community's economic base have been slow to materialise. It is likely that the increases associated with mining have camouflaged downturns in beef cattle from the drought. As well, the proximity of Nebo and Coppabella to Mackay and Moranbah mean that many services can realistically be provided from those centres.

While government obtains considerable revenue from coal mining activities by way of direct and indirect taxation, rail freight, stamp duty and other government charges, and foreign exchange earnings from export income, none of this income flows directly to the local government authority which plays host to the mining development. In fact the majority of government revenues flowing from mining accrue primarily to state governments, followed by the federal government.

### **13.2.1 Direct Employment Opportunities**

In the last decade, mining has been the largest employer by industry in the Shire. However, as a percentage of the total workforce, mining has declined from 43.98% in 1991 to 38.14% in 1996 and showed a nominal increase to 38.31% in 2001. This is consistent with national trends in that, although more jobs are being created by mining, mining as a proportion of total employment is decreasing. Generally, employment in the agricultural sector is in decline as a result of technological advances and rationalisation. Employment in agriculture decreased from 15.51% in 1991 to 11.72% in 1996, when it also regained its status as the Shire's second largest employer by industry (ABS 2001, 1996, 1991). The reduction in the proportion of the workforce employed in mining in the shire is evidence that some secondary employment impacts are being realised.

There is evidence that some locals have been able to take advantage of employment opportunities generated both directly and indirectly by mines at Coppabella, Moorvale and elsewhere in the Shire.

A preference for local employment is stated in the Coppabella EMOS and similar in relation to Moorvale that



during the construction and operational phase people will be employed directly at the site with additional indirect employment in the region. In selecting job applicants, provided they have the necessary skills and considering all factors, preference will be given to employing local people. This will create local job opportunities in the area where traditionally opportunities are rare and school leavers must move to the larger cities to seek jobs (APC 2002, p. 41).

The changing nature of working arrangements has had both a positive and negative impact on employment opportunities. Direct employment by the mining company has largely been replaced with a system of subcontracting in a range of areas including transport and quarrying activities (Neil and Tykkyläinen in Neil et al 1992). Mining contractors engage in a competitive bidding process to secure jobs. These contractors are mostly national and sometimes international. Geographical location is no barrier and contractors move from job to job as mining activity closes at one site and establishes at another. A consequence of this process is that contractors tend to take their employees with them from site to site while the employees maintain permanent residential bases elsewhere. This ready-made workforce minimises potential job opportunities for local residents.

The difficulties faced by local residents in securing employment are exacerbated by the lack of locally-available training. Locals are expected to have the same essential skills as others vying for mine employment. With a stated intent by APC to provide local job opportunities for school leavers and similar, it is unlikely that school leavers in this context would have access to training to equip them with the skills to be competitive in seeking employment.

### **13.2.2 Indirect Employment Opportunities**

Maude and Hugo (in Neil et al, 1992, Ed) state that much of the employment generated by mining operations is not in jobs at the mine site, but in activities such as transportation, processing, the manufacturing and supply of mining equipment, the supply of goods and service to mining communities and management. Many of these jobs, due to the nature and complexity of the work (among other reasons), are located outside the mining community and in the wider Mackay region and in the larger and major manufacturing and commercial centres of Australia or overseas. Relatively few are located in Nebo.

Nevertheless, a number of businesses in Nebo township are employing more staff which they attribute as a direct consequence of mining activity. Some spin-off opportunities from the location of workers in short-term accommodation camps have been created in Coppabella. These opportunities have, to some extent, benefited women who, when the establishment of mining specific communities was the norm, had few employment opportunities as accompanying partners in single industry towns.

It is important to note, however, that the majority of new positions created within the town's commercial establishments are relatively unskilled or semi-skilled. It is also worth noting that increased business activity does not necessarily translate into new job opportunities in the tertiary sector as labour resources within existing businesses may have been underutilised (Neil et al 1992).

### **13.2.3 Labour Availability**

The mining companies (including contractors) and the local government authority raised the issue of the difficulty in attracting suitably qualified staff, particularly in more specialised fields. Location, lack of facilities (e.g. education) and infrastructure (e.g. housing) were all factors impacting on the capacity to attract and retain staff. The lack of employment opportunities for partners may also prevent suitable candidates taking up employment opportunities. Attracting staff to the mine in less specialised areas was not as problematic.

While non-mining businesses in the Shire face similar labour issues, they also face the additional issue of substantial disparities between what they can afford to pay workers relative to what they might be paid by the mines. Agricultural enterprises and local government were the two sectors most directly affected. Mine worker salaries could be up to three times that of a similarly skilled worker in agriculture and some levels in local government employ. The local employment pool is already limited in number, and further restricted by an absence of or limited knowledge and skills across the pool.

With workers moving from the Council to the mine, the Council is left with a void in its workforce that has, at times, proved difficult to fill. This has led in some smaller local government areas, in addition to Nebo Shire, to the contracting in of services under various arrangements, rather than direct on-site employment. Some mining companies have a strategy to employ local non-mining workers to enhance local employment. This may further restrict labour availability for other local industries, although it has other positive impacts such as improvements in income and employment levels.

## **13.3 Discussion**

The community consultation undertaken during this study indicates that many Nebo residents are disappointed that the Coppabella mine has not brought more additional business and employment opportunities. Further, in some cases they have generated negative impacts in terms of the availability of labour to existing non-mining businesses. However, the economic impact assessment also reported in this study demonstrates that there has been a significant increase in the direct injection of expenditure into the community. The lack of economic growth stems from offsetting declines in the beef industry, the very low levels of secondary expenditure in the community, and the inability of the community to attract other businesses.

To a certain extent, the challenges facing Nebo Shire are inevitable given its low population base and proximity to major population centres, not to mention the labour-shedding trend in traditional industries such as agriculture. Together, these make it difficult to generate the critical mass of workers, consumers and entrepreneurs to create and sustain viable markets for services and to attract new investment.

## **14.0 FLUCTUATIONS AND CLOSURE IN THE MINING INDUSTRY**

The level of activity in the coal industry in the Bowen Basin has fluctuated according to market conditions, changing technology and different management, employment and industrial conditions. These fluctuations have impacted on mining communities and other population centres. As well, mine closures have impacted on population centres.

There is something of a gap between standard practice in the mining industry regarding planning for mine closure and an increasing level of expectation in the community and service sectors that closure strategies will, in fact, be planned prior to the commencement of operations. Given the finite nature of mining resources, closure must necessarily be viewed as a natural conclusion of any mining operation. In fact, the literature would suggest that this is the least planned activity in mining development and rarely are those plans that do exist communicated outside the companies responsible for them.

As the human services sector and allied industries are traditionally the first to respond to social and economic impacts of downsizing (Griggs 2002, p. 5), there is a strong expectation that the industry will begin to address these issues. These views have been expressed at some length by the Human Services Sector participants in the Central Highlands Regional Resource Use Planning Project, the Positive Futures in Mining Communities Forum (Moranbah November 2000) hosted by the Queensland Government and the more recent Ministerial Regional Communities Forum in Capella Central Queensland as part of a suite of issues relating to the health and social impacts of mining employment practices.

With regard to closure strategies however, it must be noted that: firstly, those issues raised in this section in relation to APC's Coppabella mine are not unique to this operation; and secondly, the development of comprehensively planned closure strategies that are updated through the life of a mine to reflect changing community needs and aspirations is not something with which there is extensive existing experience.

### **14.1 The Need for Closure Strategies**

Few mining towns can hope to escape the inevitable demise that occurs when resources are depleted (Hadju p. 68). While few towns cease to exist completely, many become depopulated and run-down, and a few survive as modest rural centres. Some are subsequently revived on discovery of additional resource deposits or the development of new technologies that enable further extraction on a profitable basis. In Canada, mine closure has typically been associated with short notice, ghost towns, displaced workers and businesses and crumbling infrastructure. In Queensland, examples such as Mount Morgan demonstrate the potential for ex-mining towns to evolve into poverty traps with limited employment opportunities and high levels of social security-dependence. Where mining activities are undertaken in proximity to

existing towns and force change upon them it might be argued that a particular responsibility exists to consider the impacts that will be realised once the operation pulls out again.

A number of case study examples indicate that attempting to plan for closure well in advance, despite the challenges, is preferable to other strategies (Neil et al 1992). Neil and Tykkyläinen (Neil et al 1992, p. 19) emphasise the importance of planning for mine closure as part of the mine development process during the ‘boom’ period when a mine is established and operations are growing, not as the mine nears the end of its economic life and financial and human resources begin to decline and parties involved in negotiations are likely to be in a heightened emotional state. Closure or exit must be considered, they conclude, as an integral component of project management activities.

The aim of a comprehensively developed mine closure plan or exit strategy is to manage the transition and mitigate the effects and impacts. Anticipation of the range of issues, whether psychological or financial, enables a level of preparedness that comes with forward planning. It is important that private sector strategy for the short and long-term be conveyed to enable management of impacts in the individual, organisational and broader community contexts. In stating this it is acknowledged that with changing legislative, social and economic contexts it is difficult for companies, governments and communities to anticipate or mitigate for all impacts (Neil et al in Neil et al (ed) 1992, p. 400). Rather than suggesting that planning should be delayed until the last minute, however, this suggests that planning should be comprehensive, inclusive, and regularly updated.

## **14.2 Economic and Social Impacts of the Closure of Coppabella Mine**

Mine life for the total deposit of the Coppabella Mines has been estimated at approximately 25 years depending on the rate of production. During this period substantial changes will continue to occur in the Nebo community that have the potential to either heighten, or mitigate, the eventual impacts of closure. If the mine closed at a time when other coal seams in the area were developed, there may be little net impact on the Nebo township. If the mine closed at a time when there were no other offsetting developments, then there may be major social and economic impacts on the town.

Potential impacts are likely to differ for each of the towns within Nebo Shire.

The Coppabella township as a railway service centre may not be affected by minor changes in the mining industry. Future closures in the Coppabella and/or Moorvale mines would have some impact to the extent that some mine employees are based there. If there was a major downturn in the coal industry that affected the volume of coal transported, then this would be likely to impact directly on Coppabella. Other factors that are likely to impact on Coppabella include:

- The potential desire of a number of long-term Coppabella residents to remain in the town once either their own employment with Queensland Rail is terminated or Queensland Rail’s commitment to operations at Coppabella is terminated.

- The limited capacity of the Nebo Shire Council to maintain facilities in Coppabella township once support for these facilities from Queensland rail ceases.

Concerns within Council regarding their ability to service remaining residents in purpose built settlements following the closure of whatever enterprises initiated those settlements is the main reason for Council's resistance to the development of any more purpose built settlements in the Shire.

The Nebo township is likely to suffer from a decline in economic activity, employment and population if the Coppabella Mine closed. The short life cycle of the mine (25 years) is likely to be a major factor in slow growth of residential development in Nebo, and the cautious approach of financial institutions to lend money for this purpose. As well, the short life cycle may constrain the provision of infrastructure in the town by government.

The Nebo Shire Council has an expressed desire to investigate opportunities to use the presence of mining in the Shire to improve infrastructure and facilities within Nebo township as this is seen as the most permanent settlement. Concentration of development, they argue, will reduce the vulnerability of settlements and their residents to closure or downsizing in any one enterprise. In pursuit of this goal the Shire Council has implemented several strategies including:

- Industrial park
- Residential subdivision to encourage permanent residents
- Community Infrastructure Contribution Plans (provided for—on a voluntary basis—under the Integrated Planning Act (IPA) 1977. The focus of this to date has been on securing contributions from developers of major projects (including mining) to assist with establishing community infrastructure to support the community while the development is in place and with a view to better managing exit issues.

For the Shire at large, closure of any existing mine must be seen as a major social and economic threat. As the profitability and labour demands of agriculture have declined and mining has grown the Shire's population has shifted to one that is predominantly male and employed in the mining industry. Intentionally or otherwise, the Shire has developed the classic characteristics of a mine-dependent small community (Neil et al 1992). Despite this, there appears among permanent residents and local government a strong perception that mining is a 'visitor' to the Shire with no reason to stay longer than it is economic to dig coal out of the ground.

While closure does not appear imminent, information gained during the course of this study would suggest that the end of mine life is not given sufficient prominence importance in management of the mining project. Certainly, none of the stakeholders interviewed reported any knowledge, discussion or formal planning with the Coppabella Mine management on exit strategy. Other than on-site rehabilitation—which is set out in specific detail—little if any formal documentation deals with social and economic issues. Again, this situation is not unique to APC with few companies addressing issues other than on-site rehabilitation or management of physical infrastructure in purpose built settlements.

The difficulty with closure issues is that if mining companies are made more responsible for social and infrastructure impacts of downsizing or closure, this will provide an additional incentive not to invest and buildup small communities like Nebo. As well, if the impact of mining on Nebo is to only be for 25 years, there will be little incentive to invest in housing or infrastructure. The key to future planning will be to identify the likelihood that other investment and development opportunities can be found to replace the Coppabella Mine when it closes. This will allow more strategic investment in housing and infrastructure.

### 14.3 Minesite Rehabilitation

Much of the existing planning effort in relation to closure is devoted to satisfying legislative compliance issues for rehabilitation of the physical site. The EMOS for Coppabella mine sets out the mining company's responsibility in terms of rehabilitation of the physical mine site:

The principal objective of rehabilitation is to achieve a stable final landform which is adequately vegetated and drained and does not create adverse impact external to the site (APC 2002, p. 49).

APC have stated a commitment in their EMOS to:

In the final five years of the life of the mining area in Coppabella East, research will be conducted to...

- Develop a final rehabilitation design which will incorporate research findings and ensure that geotechnical stability will meet requirements which will be relevant at the time of decommissioning (APC 2000, p. 39).

These issues will be addressed on a regular basis with progressive rehabilitation implemented as an integral part of the mine plan as indicated in the Coppabella Mine EMOS (APC 2002). Undisturbed areas within the mine boundaries will remain undisturbed and allowed to regenerate to the original native species by excluding grazing cattle.

Concern, however, has been raised by a number of stakeholders as to the extent to which rehabilitation efforts are more than aesthetic and focus on structural rehabilitation of the landscape. This view challenges the current interpretation of sufficiency and the level of restoration required. The adequacy of rehabilitation strategies was also questioned by a number of stakeholders in relation to possible future land uses. There appeared to be limited understanding by those not directly involved that the proposed rehabilitation plan for the site has been the subject of negotiation with Traditional Owners and was targeted towards establishing a flora and fauna conservation area and Aboriginal cultural training area. Managed well, this offers the potential for substantial positive benefit for Indigenous people. The way has also been left open for other beneficial land uses.

### 14.4 Planning for Closure

Existing experience in Australia and overseas demonstrates that mining communities are usually ill-prepared for substantial reductions in mine employment, and especially for closure (Neil and Tykkyläinen in Neil et al 1992, p. 19). They also demonstrate that it is a mistake to

underestimate the attachment of local residents to mining communities, including those communities created specifically to house employees for a mine known to have a limited life. Pressures for sustainable regional development at all levels of government necessitate a whole-of life-planning of mines (including decommissioning and rehabilitation) (Griggs 2002). The provision of a formally documented mine closure or exit strategy is integral to the capacity of a community to participate in a planned mine closure. Such a documented plan should be formulated in open consultation with the local government and other levels of government as appropriate, other sectors of the local resident community, and the workforce. The process through which an exit strategy is developed is just as important as the final outcome in ensuring its success.

## 15.0 MINE - COMMUNITY RELATIONSHIPS

### 15.1 Consultation and Communication

Major issues to emerge regarding consultation and communication were the accessibility and responsiveness of Australian Premium Coals, as well as the willingness of the company to negotiate with stakeholders over both their plans for development of the sites at Coppabella and Moorsvale and their plans to contribute to community infrastructure.

#### 15.1.1 Communication Processes

Perceptions regarding the effectiveness of communications and the accessibility and responsiveness of APC varied considerably among community stakeholders. Specific feedback on APC's communication processes are detailed in the next sub-section. This sub-section will outline first the procedures that APC has put in place to communicate and consult with their surrounding community.

In its Summary of Commitments (APC 2000, p. 4) APC undertook to:

Commitment 19

...establish ongoing consultation mechanisms with the community and relevant agencies and [to] monitor and address any further social issues if they arise after consultation with the relevant Local Government or State Government departments.

Further (p.3):

Commitment 2

Australian Premium Coals Pty Ltd undertakes to thoroughly investigate any complaint, establish the legitimacy of such complaint and undertake remedial action as necessary.

APC first initiated community consultation in 1998 to provide information on the extent of the Coppabella project. Those consulted as part of this process included surrounding landholders, Native Title claimant groups and representative bodies, and Nebo Shire Council.

A similar process was undertaken during the preparation of the EIS for the Moorsvale Coal Project. In July 2001, APC targeted the following groups for consultation:

- Local landholders adjacent to and neighbouring the project area
- Directly impacted residents in Moranbah, Coppabella and Nebo townships
- Representatives of State Agencies and the Nebo Shire Council and the Belyando Shire Council
- Local community groups and organisations (APC 2002, p. 21).

APC views this initial consultation as the first stage of the life-of-mine community consultation process which will conclude at the end of the mine rehabilitation program.



To facilitate this life-of-mine community consultation process APC has established a set of objectives and strategies, a full-time community liaison position to implement those strategies, and a register of complaints to record and respond to community concerns.

The EMOS for Coppabella Coal Mine (APC 2002, p. 55) sets out six objectives in relation to its Proposed Environmental Protection with associated Control Strategies. The relevant target is:

- The number of complaints by members of the local community will be zero.

Control Strategies that will influence the communication process are:

- That regular contact is maintained with surrounding landholders to consult and inform them of issues at the mine which may be relevant to them.
- A policy will be developed which will initiate a community complaints register and a system of recording community consultation activities. The policy will ensure that if a complaint is received APC will make all reasonable efforts to establish a communication with the complainant within 24 hours and the issue resolved within one month.
- The local community is kept informed of activities via regular articles in the Mackay Daily Mercury and the local Nebo Newsletter.
- The local organisations included in ongoing community consultation will be the Nebo Shire Council, the Nebo Broadsound Landcare Group, local Emergency Services, and local conservation organisation.
- Aboriginal people who have an interest in the land the subject of the Coppabella Mine are included in the consultation program.

The measurable indicators are:

- A procedure will be developed to provide the basis for continuing community consultation. This will cover the management and recording of community complaints and will also help to identify and minimise the potential adverse impacts of the project.
- A complaints register will be maintained.

APC reports that no complaints have been recorded in the complaints register to May 2003.

It is the role of the Environment, Community and Government Liaison Advisor to be the principal conduit for ongoing contact. This position was established on 1 May 2001. This role does not preclude other APC representatives having regular contact with the Local Government and community at varying levels.

Since establishment of the Coppabella operation, communication with the community and other stakeholders has been initiated by APC on an as needs basis. Aside from direct contact with affected parties, other communication mechanisms include media releases, local newsletters, community meetings and events, ongoing consultation with local government.

Particular attention has been paid to communicating with those groups most directly affected by the mining operation; specifically, Traditional Owners, adjoining landholders and Local

Government. More detail on communication with Traditional Owners is included in Section 17.2 of this report.

Communication with landholders is undertaken to keep them informed of anything which may affect them. The timing of such communication is based on the judgment of by APC staff. Communication channels usually include direct contact by the Environment, Community and Government Liaison Advisor.

### **15.1.2 Stakeholder feedback**

Responses from community members and other stakeholders regarding their satisfaction with APC's communication strategies varied, with those most closely associated with the project (Traditional Owners and adjoining landholders) expressing the most satisfaction. The Environment, Community and Government Liaison Advisor was the first point of contact for many and most interviewees felt that their concerns received a fair hearing and were adequately followed up. Traditional Owners also spoke of the respectful communication process that had been established.

By contrast, several general community members felt that APC was inaccessible and unlikely to respond to their requests or concerns. A degree of mistrust was evident among some respondents. There were some minor communication issues raised by some landholders; for example, where mine related personnel have entered property or carried out activity without advice or consultation from APC or the relevant contractor.

Generally other groups have found APC approachable, and have developed a professional working relationship with the Environment, Community and Government Liaison Advisor. On the other hand, some landholders have had differences of opinion on a variety of issues. The communication with local government has been on a professional level. The interaction with Shire businesses has met with mixed response. The consultation indicates that some businesses had not developed a strongly positive working relationship with APC. When making requests to APC and/or its contractors, largely community groups have reported that APC has been responsive on the more personal level and also made contributions in response to requests.

### **15.1.3 Level of Cooperation/Conflict over Change**

The emergence of conflict within a community in response to development proposals, and the raising of expectations which are not subsequently met, can be, in themselves, significant negative social impacts. By the same token, development proposals also may provide a focal point to promote new kinds of cooperation among stakeholders and to set and achieve realistic goals. Both these potential outcomes are evident to at least some extent in Nebo Shire.

Representatives of Nebo Shire Council acknowledge that communication channels with APC have been open and accessible. However, questions have been raised over whether communication and negotiation over the Moorvale EIS has been as constructive as earlier communications and whether it will contribute to a long standing mutually beneficial partnership. While there was some criticism of the process and concern that the Council's

particular objections were not substantially addressed, the unfavourable outcome from the Shire's perspective may also influence its view here.

The Moortvale EIS process was about informing decision-makers and the community about details of the mining proposal, potential impacts and the management of those impacts. The EIS process also allows concerns to be registered and addressed directly. It is a key component in establishing a relationship with the community in which the mine is located. It would appear that the majority of consultation with local landholders and residents was on a one-to-one basis, meetings with interested groups and agencies on specific topics, as well as various written forms.

While it is stated by APC in the Moortvale EIS (p. 19) that the organisations and individuals consulted during the community consultation process unanimously endorsed the development proposal, a number of submissions were received by the Environmental Protection Agency during the public review of the EIS. A range of issues were raised by various parties in response to the EIS which resulted in some adjustments including clarification on some of the technical aspects. Mackay Conservation Group requested that the entry showing "There were no major issues or complaints about the project" (Appendix A4 p. 12) be replaced with "The Mackay Conservation Group has not endorsed the proposal." (APC 2002, May p. 14).

Nebo Shire Council had discussions with APC about the Moortvale Coal Project in the EIS process, arguing that it did not substantially address social and community impacts. These discussions reflect a negotiation process to determine the roles and responsibilities that different parties might have in a new development. The key issues raised by the Nebo Shire Council focused on the impact APC's operations would have on the community of Nebo Shire and that of Coppabella Township. In summary, the issues included:

- Inadequately addressing the impact of workforce accommodation requirements and associated infrastructure requirements on existing communities
- Impacts on the visual amenity of the Shire
- Impacts of increased demands on social and physical infrastructure with the existing townships of Coppabella and Nebo
- Addressing recommendations of the EPA on the upgrading of facilities at Coppabella.

In the Moortvale EIS Assessment Report (EPA 2002 p. 12), it was noted

...APC has not adequately addressed these concerns and it is recommended that discussions and agreement between APC and Nebo Shire Council be formalised in writing before construction commences.

After negotiations with APC, the Nebo Shire Council withdrew their objections to the Moortvale Coal Project.

In a supplement to the Moortvale EIS, APC has documented the issues (and their responses) raised by submissions of interested parties received by the Environmental Protection Agency in response to the public availability of the EIS between 18 March – 17 April 2002.

Submissions (APC 2002, pp. 3-4) were received from:

- Queensland Rail
- Queensland Health, Treasury – Office Energy

- Department of Natural Resources and Mines
  - Mackay Offices
  - Minerals & Petroleum Division
- Department of Aboriginal and Torres Strait Islander Policy
- Department of Local Government and Planning
- Department of Families
- Department of Emergency Services
- Department of State Development
- Department of Main Roads
- Environmental Protection Agency
- Mr Bruce White
- Parker Family
- Lloyd Family
- Mackay Conservation Group
- Humphreys Reynolds Perkins (for Nebo Shire Council).

Based on these comments, some changes were effected to the EIS and others are noted with no response and/or may not be incorporated into the company documentation. The Moorvale project has been approved by the Queensland Government without explicitly considering all the issues raised by the Nebo Shire Council. Some of those issues are covered in other sections of this report. In relation to demands on social and physical infrastructure of the shire, the development of a social infrastructure plan for the shire that is endorsed by the local community is recommended. There then needs to be engagement between the Nebo Shire Council and APC to identify how that plan might be implemented.

#### **15.1.4 Mechanisms to gain Community Feedback**

The EIS Assessment Report (EPA 2002, p. 12) indicated the benefit of establishing a community reference group over the life of the mine.

It is recommended that the proponent consider the establishment of a community reference group or stakeholder panel that meets periodically over the life of the mine. Potential members of the reference group could include:

- Local environment groups
- Catchment groups
- Landholders
- Native title holders or claimants
- Cultural bodies
- Local chamber of commerce
- Local government
- Government land managers or Environmental Protection Agency.

The consultation did not report that this suggestion had been taken up and implemented by APC. Community reference groups also have disadvantages in terms of the time commitments and the limited number of community people that can be directly involved. As well, there are often issues of governance overlaps between community reference panels and local government. It is likely that in very small communities, such as Nebo, the benefits of a community reference group are not as large as they may be in larger communities.

Other mechanisms to ensure that information flows exist include public information meetings and regular newsletters. Public meetings on a regular basis (e.g. every 6 or 12 months) have advantages in terms of allowing a two-way flow of information to exist, but may not attract large attendance rates. Newsletters are more effective at dispersing information across the community, and can be issued at more regular intervals. The disadvantage with newsletters is that feedback from the community has to be sourced in other ways.

Newsletters are most effective when they contain a range of topics of broad interest to the community. In a small community, it is usually more cost-effective to combine information from a number of groups into a single newsletter. For example, in the Bauhinia Shire (another small rural-based shire in the Central Highlands), the local council is responsible for the issue of a monthly newsletter (The Bauhinia Bulletin). This contains an update from the mayor, community notices, information on health services, and contributions from other sources. A similar general newsletter could be established by the Nebo Shire Council with support from the Coppabella Mine and other industry groups.

The focus of this discussion has been about mechanisms to provide feedback from the Coppabella Mine to the Nebo Community. An additional advantage of a regular newsletter is that it would better allow information about the Nebo community to be communicated to the coal mine employees who stay in work camp accommodation. This will help to make those workers feel a part of the community, and make them aware of local services and events.

## 15.2 Discussion

Successful levels of communication exist between APC and most landholders, and APC and indigenous groups. There are lower levels of satisfaction about communication issues from the local community and the Nebo Shire Council. In part this is because there are different levels of expectations about the impact that APC will have on the local community, as well as disagreements about the extent to which APC should contribute to social infrastructure. It is also unclear how effectively the Nebo Shire Council and the Nebo community are able to communicate with the temporary residents employed at the Coppabella and Moorvale mines.

Communication with the local community can be improved in several ways. It is recommended that a social infrastructure plan should be developed for the community. This should primarily be the responsibility of the Nebo Shire Council, and would involve substantial community input and communication. APC would need to be engaged to determine likely impacts on the community and potential levels of support.

Opportunities also exist to improve information flows to the community. Available mechanisms include formation of a community reference group, public meetings, and a regular newsletter. The establishment of a community newsletter is recommended, with APC providing some support and regular contributions. This will also allow better flows of communication between the Nebo community and the mine employees who stay in work camp accommodation.

## 16.0 PLANNING AND GOVERNANCE

Effective and efficient arrangements and institutions for planning, decision-making and administration that provide for a degree of self-determination are widely seen as essential elements of social and community sustainability. These institutions help to identify where local communities may bear a disproportionate share of the costs of development compared to the benefits. Concepts such as ‘social capital’ and ‘political efficacy’ are thus the current buzzwords of local and regional development. In their various guises they stress the importance of broad participation, social diversity and relationship-building. Such concepts are often used loosely or to justify leaving local communities to solve their own development problems. They are also harder to define and measure with the same accuracy that can be applied to environmental and economic parameters.

In a practical sense it is increasingly recognised by mining companies and other developers that some form of engagement with impacted communities that allows input into the design and management of operations is not only a worthwhile activity to undertake in its own right, but one which may contribute significantly to ensuring that barriers to development are resolved. Thus it is also important to assess in a practical manner the impact of development on local capacity for planning, governance and self-determination.

### 16.1 State, Regional and Local Governance Arrangements

Responsibility for mining sits largely at the state level of government, although legislation at the federal level also plays a role. Local government’s role is limited as determined by legislation at these other levels. Local government has little if any influence over the planning and approval process for mining which may both be considerably progressed before local government is informed or invited to the table. Local government has little legislative back up to prompt mining companies to deliver benefits directly in the local domain. This has been acknowledged at the highest level in State Government. While the *Integrated Planning Act 1997 (IPA)* provides for Community Infrastructure Contribution Plans, there is no obligation on entities such as mining companies to participate and it is largely a matter for negotiation. As such, it is not always possible for local government authorities to develop or implement such plans with mining companies.

In contrast to the centralisation of authority to approve major mining developments, responsibility for local and regional development in Australia since the Whitlam government’s initiatives in the 1970s was largely devolved. However, recognising a need for more state support, regional planning processes have emerged in recent years as a strategy to link local communities and governments with state agencies and resources. Regional planning processes in Queensland are generally quite sophisticated but still not necessarily adequately resourced. The key Regional Planning entities and mechanisms (AECgroup 2002; Queensland Department of Local Government and Planning 2001) in which Nebo Shire participates at Council and community level include:

- Mackay Whitsunday Regional Economic Development Corporation (MWREDC)
- Whitsunday, Hinterland and Mackay (WHAM) 2105 Regional Planning Project
- Whitsunday, Hinterland and Mackay, Bowen Regional Organisation of Councils (WHAMBROC)
- Mackay Tourism and Development Bureau (MTDB)
- Regional Communities Forum – Regional Engagement Division of Queensland Department of Premier and Cabinet
- Mackay Region Area Consultative Committee (MRACC)
- Moranbah District Health Service
- Hinterland Tourism and Economic Development Committee (HTEDC)
- Councils in Cooperation (CIC)
- Central Highlands Regional Resource Use Planning (CHRUPP)

In addition, a number of ad hoc groups have been formed to address specific areas of interest. Other groups which are engaged in planning and development activities include the Regional Managers' Forum and the Mackay Regional Council for Social Development (MRCSD).

Throughout the region, a great deal of effort has, and continues to be, put into these processes. While it is important to have planning at a strategic level, there appears a hiatus in transferring this planning into reality on the ground in communities and little evidence as yet that state government will actually take serious note of regional plans when assessing and approving major developments.

Griggs (2002) suggested that the roles played by government in relation to mining development are relatively clear. The issues raised by local government and community in this study would suggest that those groups do not perceive a clear demarcation in roles and responsibilities. Some of the areas where the roles and responsibilities appear to be blurred include community support and infrastructure, and the distribution of the benefits of mining.

## **16.2 Local Governance**

In a community as small as Nebo the local government, or Shire Council, does take a pre-eminent role in governance issues. Relevant non-government organisations that have been active include Nebo Community Development Committee, Community Builders, Nebo Museum Committee, Queensland Country Women's Association, and Nebo Saleyards Committee.

There are two main issues identified by Nebo Shire Council as affecting their attempts to play a role in the management of mining activity in Nebo. The first is the marginalisation of local government in planning and approval processes while the second is the lack of resources flowing from mining to local government. However, in recognising that government, at whatever level, is not the only legitimate participant in planning and decision-making, it is also important to assess the extent to which governance arrangements have facilitated the active participation of non-government organisations and other community members.

Local Government is aware of the range of impacts of development in its Shire. Given the mining projects that have been ‘on the books’ for a number of years, Nebo Shire has been relatively proactive in trying to manage the impacts on its community and optimise the benefits from such developments coming to the Shire. It has pursued, and continues to pursue, a number of strategies to influence the direct contribution of mining development in its community. The Council has encountered a number of barriers. Due to the processes (and jurisdictions) for approval of mining applications, the capacity of local government to participate as part of the process rather than be delivered the decision outcome as a *fait accompli* is limited. Such processes allow local government and community input to be by-passed.

In the planning process for the Moorvale development, Nebo Shire Council highlighted the changing character of the community and its increasing sensitisation and education about the land use decision-making process. It argued that the community not only expects now to be consulted in the process but also to be convinced that the benefits of coal mining development outweigh the costs.

Despite this, the capacity of local government to participate (and to facilitate the participation of their constituents) in planning and to advocate the interests of local communities is limited by the narrow range of skills and expertise they have available. This is a straightforward reflection of the small size of the community, and the inadequate economic base provided to local government in regional Australia by its traditional rates base. While mining is also a substantial source of revenue to state government, under current arrangements it appears that little if any direct income from mining development flows to local government. With mining proffered as something of a lifeline to struggling communities it seems somewhat incongruous that the level of government most closely associated with local community development receives little direct revenue with which to build its capacity to manage development.

In the context of the WHAM 2015 Regional Planning Project (Queensland Department of Local Government and Planning 2001), resourcing of local government and community was a recurring theme in relation to increased expectations that change should not simply be imposed by developers and state government. Specifically in relation to local government the concerns dealt with:

- recognition of local government’s potential and mandate in local community planning with the expectation of taking a lead role in planning at a regional level without appropriate resources
- capacity of income to address local social and economic issues
- lack of integration and the conflicting demands of cross-institutional and cross-sectoral planning
- undermining of the legitimate planning authority of local government by state government, and
- a poorly developed framework to develop community participation and input.

To some extent these issues are common across all local governments in the region. The development of the Coppabella and Moorvale mines will impact on a number of local government areas in Central Queensland because its workforce is drawn from a wide area. The Nebo Shire Council is not the only local government to have an interest in the mines. From a regional perspective, it is not clear that all support for local community development



should be directed at Nebo and Coppabella, when most of the workforce for the mines has their permanent residences outside of those two towns.

### 16.3 Indigenous Governance

Many of the issues related to Indigenous participation in planning and governance are dealt with in Section 17.0 on Native Title and Cultural Heritage. Nevertheless, it is important that the development of processes appropriate to Indigenous culture and legal rights is considered within the full context of planning and governance and not pushed aside to be dealt with as part of a bundle of solely ‘Aboriginal issues’.

The most important point to be made is that as Traditional Owners, Aboriginal people have both unique rights to be involved in decision-making over natural resources and culturally unique ways of going about decision-making. Consultation with Indigenous people over natural resource management issues across Central Queensland has consistently identified the following generic issues related to Indigenous natural resource governance (see Lockie and Jennings 2002; Jennings and Lockie, forthcoming):

- **Legal rights:** while Aboriginal people have a range of legal rights to either be involved, or to have their interests recognised, in resource management these rights are often unclear, contested and shifting. Of particular concern is the denial in Native Title legislation that Traditional Owners may have overlapping areas of interest and the limitation of cultural heritage legislation to material cultural heritage such as artefacts and archaeological sites.
- **Status and recognition:** despite the limitations of existing legislation, the rights that are afforded under that legislation, in concert with the moral rights of Traditional Ownership, should accord Aboriginal people a status in natural resource decision-making quite different to that of other stakeholders and interest groups. In short, this requires processes to be developed which accord Aboriginal people a genuine role in decision-making rather than relegating them to the status of yet another group to be ‘consulted’.
- **Capacity:** the main impediment to Indigenous participation is generally understood to be resource limitations including finance and expertise. Given that Indigenous participation usually occurs on a volunteer basis these are clearly major impediments. However, it is also important to remember that: firstly, Aboriginal communities usually face a variety of other issues that demand the time and attention of community leaders (money and education will not, by themselves, solve the problem); and secondly, that it is not only the capacity of Indigenous people that needs developing. Outside the Indigenous community there is generally very poor understanding of the issues faced by those communities, their knowledge and culture, and their ways of going about decision-making.
- **Culturally appropriate governance processes:** Western bureaucratic approaches to consultation, planning and decision-making are often experienced as exclusionary and discriminatory by a number of groups—Indigenous people in particular. Many Indigenous people are intimidated, for example, by highly formal meetings in which they are outnumbered by non-Indigenous people and are frustrated by the discussion of issues in terms solely of Western worldviews.

Addressing these issues requires different strategies in different circumstances. Of particular concern here are those strategies that are relevant to mining operations at Coppabella and Moorvale and, to a lesser extent, the potential extension of mining throughout Nebo Shire.

As detailed in Section 17.0, all these issues are being addressed to some degree by APC. The development of the Cultural Heritage Management Plan has recognised the legal rights of Traditional Owners while affording some flexibility by allowing for overlapping areas of interest. By engaging Traditional Owners as consultants, the Cultural Heritage Management Plan has contributed to capacity building through the provision of opportunities for Indigenous people to undertake project management, work with their own archaeologist to identify sites and artefacts, map findings, write summary sheets and discuss recommendations.

While the traditional owner groups were the parties principally involved in the development of the Cultural Heritage Management Plan with APC, the Department of Aboriginal and Torres Strait Islander Policy (DATSIP) responded to the Moorvale EIS by identifying

... a number of references that needed correcting in the EIS and these were addressed in the proponent's EIS Response Supplement. In addition, DATSIP requested involvement in the review of the CHMP and this was arranged by the EPA (EPA 2002, p. 10).

Suggestions to enhance capacity building included (again as detailed in Section 16.0) the development of educational and employment strategies to involve Aboriginal people throughout the whole process of planning, assessing, implementing and monitoring mines. Representatives of the Traditional Owner groups affected by the Coppabella operation were generally satisfied that they had developed a positive relationship with APC and did not expect that in the event of any future dispute they would not be able to negotiate a reasonable compromise.

One question that remains is how much this has contributed to the capacity and recognition necessary for Traditional Owners to participate more meaningfully in natural resource governance over the longer-term. There are several reasons to believe that the contribution may be limited including:

- Traditional Owners believed that the positive experience they had had, to date, with APC was highly dependent on the good will of this particular mining company. Should this good will evaporate they believed that would have very little capacity to continue participating in decision-making. Similarly, should other companies take a more antagonistic approach? Traditional Owners did not think they could do a lot about it. In the end, they believed their negotiating position in relation to companies backed by millions of dollars to be totally inequitable.
- Enterprises established to identify, manage and disseminate cultural heritage have experienced difficulty (see Section 17.6) in securing ongoing contracts and income due to the specialised nature of this work and limited opportunities to transfer it out of the immediate area.
- Planning and decision-making at a Shire or regional level is likely to involve multiple groups of Traditional Owners who—despite possessing a diversity of interests and aspirations—are generally expected to develop a unified Aboriginal position. This raises two further issues. Firstly, there is a need to develop and support appropriate institutions and processes through which to articulate such a pan-Aboriginal perspective (Dillon, in

Connell and Howitt 1991). While there are a number of initiatives underway throughout Central Queensland to instigate such institutions and processes, these are very much at a preliminary stage of development and not evident in the Nebo area. Secondly, it is not always possible to amalgamate the interests of individual Traditional Owner groups into one regional perspective without compromising local interests.

Ultimately, it may be concluded that the mining operation at Coppabella has made a small contribution to the enhancement of Indigenous resource governance in the sense that it has provided opportunities to involve Aboriginal people in the management of cultural heritage and to pursue opportunities for community development through Native Title compensation. This has certainly mitigated against some of the potentially negative impacts of mining. The contribution that the operation has made to the long-term capacity of Indigenous people to participate in decision-making at a regional level (over such issues, for example, as where mining should be undertaken) is, however, limited.

## 16.4 Community Participation

Nebo Shire Council participates in a number of regional processes as outlined in section 16.1. While local government capacity to participate in planning and consultative mechanisms has advanced considerably in recent years, there are issues to do with the actual involvement of the community they represent in this process. Internal community conflicts over issues on the extent or direction of change as well as process (exclusions or lack of capacity and opportunity to input) can often emerge. Local government is placed in a difficult situation of having to keep its community together even though it can be one of the protagonists. Issues of community conflict over process, and the nature and direction of change were raised during this consultation process. This had resulted in some breakdown at the community level in participation in various activities and posed a threat to community involvement in both the shorter and longer term.

Opportunities can be lost to communities through internal wrangling, whether or not communities are strongly or loosely cohesive. While local governments purport to represent their communities and act in their best interests they do not always foster engagement and develop an inclusive approach. Councils do not always appreciate a high level of community input into their processes and strategic directions, and do not always appreciate how important community unity is in the formation of social capital. Social capital not only produces an atmosphere conducive to economic activity, it provides the cultural will to solve community problems collectively (Lean, in Griggs 2002).

Griggs (2002, p. 22) identified that

this recognition of social capital as a determinant of local economic development does not always sit easily with government, or with development planners. The notions of interpersonal trust, feelings of belonging and responsibility, and the quality and efficacy of personal engagement in a community are not always easily grasped concepts, nor are they in many cases easily accepted as community-building tools.

The role of local government is pivotal to managing for a successful future of that community. While jobs, income and infrastructure are critical, the future depends on the

development of an appropriate mix of economic, human and social development—how well people can rethink problems, anticipate change, organise their communities and mobilise the often-unseen capacity of the community (Griggs 2002).

An equally important issue is the willingness and level of participation of the mining companies in community development. The new employment structures and other pressures under which mining operates tend to set it apart from the local communities in which it operates. Beyond negotiating with governments to further the development of the mine and achieve direct effect for mining related issues, there is little evidence of formal participation in the regional planning initiatives. It would seem that mining is very inwardly focussed to enable it to respond successfully to broader external influences that impinge on its survival.

The role of respective governments and community should be complementary however, it is a complex issue. This relies on developing open and ongoing relationships between all the stakeholders and clarifying roles and responsibilities. Government at all levels must have an ongoing role and a responsibility to manage their respective investments in the region:

The communities of the region wish to maintain the quality of life, community values and opportunities that have enhanced their lives and their desire to continue to live and work in the region. Such things as access to services, infrastructure provision, education and employment opportunities, and ecologically sustainable use and management of the region's diverse ecosystems, are important considerations for government at all levels (Griggs 2002, p. 15).

This process must incorporate other key stakeholders including the mining companies. One recommendation is to use:

a two-pronged approach—facilitate whole of mine planning (including decline), as well as working with the community and local government in a process of community assessment of their own capacities, both now and in the future, as well as determining how to get there (Griggs 2002, p. 15).

A number of key barriers were identified in the WHAM 2015 project that inhibits social infrastructure planning in the region. One of these included clarifying and enhancing the role of local government (Queensland Department of Local Government and Planning 2001). This reinforces the complex environment in which local government operates in a number of arenas and its capacity to input and deliver quality outcomes for its community.

## 16.5 Discussion

There are increasing opportunities for local government and community to participate in local and regional planning. However, the process could be considered more exclusive than inclusive. Nebo, as a local government authority and as a community, has demonstrated wide ranging participation in these processes. It has developed strong linkages across the region and has realised the benefits of a regional and integrated approach that will deliver quality outcomes in the regional context even where they may not have a direct or significant benefit for the Shire directly.

Nevertheless, the communities in which mining development occurs appear to have limited input and control over outcomes directly associated with that mining development. Even with

regional planning structures in place that have helped to build capacity, the overall influence and capacity to manage for optimum community (in its broadest context) outcomes is restricted. It must be concluded on this basis that the establishment of the Coppabella mining operation has not impacted much on or enhanced local capacity for governance and self-determination.

## 17.0 CULTURAL HERITAGE AND NATIVE TITLE

Representatives of the two Traditional Owner groups with which APC has previously negotiated were interviewed. As recognised Native Title claimants these groups possess rights to negotiate with the mining company on a number of matters. Specific rights under Native Title and other legislation will not be described here in detail as they pertain primarily to the mine site itself and lie, therefore, outside the terms of reference of this study. Similarly, this report will not touch on the specific agreements reached between APC and Native Title claimants in relation to the mine site and arrangements that have been put in place to compensate claimants for any impacts on their Native Title. Instead, this section will concentrate on the off-site impacts, positive and negative, of the Coppabella mine on Aboriginal people and on the communication processes necessary to ensure maximum positive benefit.

Those representatives interviewed each had some experience in dealing formally with mining companies other than APC. From these discussions, the approaches of mining companies to negotiating with Aboriginal people appears to range from treating them with respect and with a view to achieving mutually beneficial outcomes, to treating them disrespectfully and with a view merely to removing perceived impediments to mining.

The views of Aboriginal representatives interviewed tended to suggest that their aim was not to stop mining development, but to work with mining companies to develop opportunities for Indigenous community development and employment. It is noted that the recognised Traditional Owners did not register any objections to the APC applications for mining leases at the Coppabella or Moornvale sites.

### 17.1 Background

Economic development of the Nebo Shire has historically generated considerable negative impacts for Aboriginal people. Early European settlement of the area through the 1860s and 70s was a time known for considerable conflict between Aborigines and white settlers. Although little appears to have been recorded regarding conflict in the Nebo Shire (Mayes 1991), it is likely nevertheless that a substantial proportion of the Aboriginal population were killed either by diseases like smallpox or through fighting with the Native Mounted Police and vigilante groups (L'Oste-Brown 2002). The last major incident known to have occurred in the Shire took place at Mount Gotthard copper mine in the 1880s where an entire shift of ten to fifteen men were found murdered at the mine site. Assuming the murders to have been the work of Aborigines, the Native Mounted Police went of 'a spree of revenge' (Mayes 1991, p. 20). Those Aborigines who survived in the Shire gradually were either absorbed into the pastoral economy as stationhands and domestic workers, became fringe dwellers and/or left. This, in part, explains the very small Aboriginal population of the Shire today and the importance placed by Native Title claimants on access to country for those wishing to return.

It is worth briefly pointing out that impacts of the mine on Aboriginal people pertain both to their legal rights as Native Title claimants and to cultural heritage. While Native Title and cultural heritage are related, neither completely subsumes the other and both are protected under a range of legislation. Aspects that bear noting include:

- Native Title confers legal rights in property that allow for the maintenance of traditional law and culture to the extent claimed and to the extent cognisant with the tenure and use of that land.
- Only claimant groups or determined holders possess Native Title rights. Other groups have no legal mandate to speak for country.
- Cultural heritage is not, however, a simple subset of Native Title and in cases where actions have been taken that have extinguished or circumscribed Native Title rights, this does not necessarily mean that all cultural values in which Traditional Owners have an interest have similarly been extinguished. Many, but not all, cultural heritage values are also protected through legislation.

As a form of property right, Native Title thus provides a legal basis for the involvement of Aboriginal groups in planning processes above and beyond that of other interest groups (e.g. voluntary conservation groups). Hence, it is not inappropriate that APC has developed a considerably closer relationship with Native Title claimants and property holders adjoining the site than with a number of other stakeholder groups.

Further, it is worth noting that Aboriginal cultural heritage associated with the mine and surrounding Shire is not necessarily restricted to artefacts, archaeological sites and other material relics. A key aspect of cultural heritage for Aboriginal people is the spiritual and environmental integrity of the landscape itself. When Aboriginal people talk about ‘country’ they refer not just to an area of land but to a mythico-religious landscape of places, values, resources, stories and cultural obligations (Godwin 2001). Maintaining access to country is thus fundamental to Indigenous cultural heritage management.

## **17.2 Communication**

In terms of general communication, each of the groups felt that they had established a workable relationship with APC. Much of the focus of this was in establishing and monitoring the Cultural Heritage Management Plan.

Three broad factors were identified as potential impediments to successful communication and negotiation. While only one of these was identified as an issue affecting the effectiveness of communication between Native Title claimants and the Coppabella mining operation, all bear monitoring and review over the life of the operation.

The first factor was the contract structure that currently prevails in mining ventures. Where one company, such as APC, operates as project manager while other companies take responsibility for mining and other activities there is no guarantee that a well established relationship with the project manager will ensure a similar relationship with contractors.

While Traditional Owner groups negotiate with the project manager on matters that pertain to overall mine development such as cultural heritage management, they are required to deal directly with the contractors on issues such as employment opportunities. Given that there can be a number of contractors on any mine site, this process can be protracted and stretch the resource base and capacity of the Traditional Owner groups.

The economic imperative of mining and the competitive nature of contracts often leave contractors with little opportunity to commit to supporting associated activity.

The second factor was a general feeling among Native Title claimants that they negotiate from a very low power base relative to mining companies. There is a perception that Traditional Owners do not have a lot to bring to the negotiating table and that this limits their capacity to negotiate 'the best deal'. This created a temptation, Native Title claimants believed, among mining companies to make no more concessions to Indigenous people than were needed to secure their agreement and allow a mining lease to proceed.

While the experience with APC had generally been positive, it was considered that mining companies generally had no real commitment to work in partnership with Traditional Owners to explore the full range of opportunities that might yield mutually positive outcomes. Aboriginal representatives interviewed stated that even where some mining companies assist Traditional Owner groups through the provision of resources to facilitate their participation in negotiations, they believed that the cost of this assistance was, in the end, deducted from any compensation or other assistance paid to Indigenous people.

APC's approach to communicating with each of the Native Title claimants was well regarded even though these Indigenous groups would be considered as having competing interests. A sound working relationship has been developed between senior staff of APC (particularly Denis Wood) and Indigenous representatives.

While in the APC situation, effective communication has been established between APC and Indigenous representatives, it was reported that a factor influencing the effectiveness of communication and negotiation between Mine representatives and the Indigenous people was the lack of continuity of people representing mining companies, due to their size and complexity. The appointment of a designated APC contact – the Environment, Community and Government Liaison Advisor, was considered beneficial to the working relationship by Indigenous representatives. However, it was reported that experiences with larger mining companies had been less favourable, with Indigenous people forced to deal both with a number of positions as opposed a single point of contact, and with regular staff turnover within those positions, throughout negotiation processes.

The clearly expressed goal of both Native Title claimants when negotiating with APC and other mining companies was to identify and pursue opportunities for Indigenous community development through, for example, cultural heritage management, access to country, small enterprise development, vocational training and employment.

APC, more so than any of the other mining companies with which the Indigenous Groups has negotiated, was considered to have a more open approach to negotiation, more willingness to find common ground, and more commitment to addressing Indigenous community needs than some other companies.



### 17.3 Access to Country

As stated in the background section above, access to country for Aboriginal people is a critical aspect of cultural heritage due to the spiritual and historical importance of the traditional landscape. Such access is, of course, limited by the existence of the mine and the restrictions of a mining operation. The nature of the mining takes away or subsumes the landscape and, for some, this is inherently undesirable.

Nevertheless, while not having direct access to the country inhibits some activity, there did not appear to be any contentious issues regarding access to country taken up by the Coppabella mine. Issues that require ongoing attention include access to the site for cultural heritage management, access following mine closure, and access for those Indigenous people who have left their traditional country.

Cultural heritage management on the site has provided opportunities for capacity building among members of the two Native Title claimant groups, both of whom are involved in identification and management of cultural heritage. Where artefacts have been identified that would otherwise be lost to the groups because of the change of landuse, these are managed through the Cultural Heritage Management Plan agreed between the parties. Removal and relocation would appear to be established practice. The storage, access and representation following relocation of the artefacts are likely to be managed with under the Cultural Heritage Management Plan.

The Environmental Management and Operations Statement (EMOS) prepared for the Coppabella coal mine identifies management by Aboriginal people as the final landuse following the cessation of mining operations. When and if this occurs it will raise issues:

- related to how the land will be managed in a manner cognisant of the interests of both Traditional Owner groups
- regarding the capacity of the groups to capitalise on opportunities provided by this level of access, and
- with respect to management of the land and land-based enterprises sustainably.

As previously mentioned, the Aboriginal and Islander population of the Nebo Shire is extremely low. Historical conflict, disease, forced relocation and lack of employment opportunities have all contributed to people with traditional links to this area moving away. Some are living on the coast in Mackay and its surrounds and others have moved further afield. As with the general community, there are members of the Indigenous community who would consider relocating back to Nebo if there were more infrastructure and employment opportunities. Irrespective of this, it was considered important for Indigenous people to have the opportunity to return to country (and go bush) to ensure the continuation of traditional culture.

Access to country was thus considered just as important for those who have moved farther away as for those people who have remained in the closer vicinity. People would like to come back to visit but do not have always the capacity to do so. In some cases the relationship with the mine had enabled some to revisit country that they may not otherwise have had the opportunity.

## 17.4 Training and Employment Opportunities

Perspectives were not always consistent on the training opportunities that had been presented by the advent of mining.

While training and employment opportunities were high on the priority list in any agreement negotiated with the mining company, not all of these had materialised as envisaged. Again the need to deal with not only the mining project manager but also the mining contractors tends to impede maximising these opportunities. The economic imperative and differing organisational philosophy and culture are some factors inhibiting a more streamlined approach to securing training and employment opportunities. Traditional Owner representatives indicated a mixed response to efforts on securing training and employment opportunities for their people.

Where such opportunities had been realised, it was the result of either, or a combination of:

- persistent and dedicated relationship building between the Traditional Owner groups and the specific contractor
- dedicated time and effort by Traditional Owner representatives
- a knowledge of how the industry works
- strong mentoring and support for Indigenous employees provided by the Traditional Owner group, often voluntarily, and
- a broader knowledge of what resources exist to supporting training and how this can be made mutually beneficial.

Where a group (male and female) had undertaken formal training at TAFE, it was reported that all had successfully completed. Negotiations on employment opportunities in mining more generally (i.e. not just the at Coppabella site) had yielded both positive and negative responses. The results were reported as encouraging with up to 25 people either in, or going into, positions with various contractors. Some contractors were more willing to consider the training and employment opportunities for Indigenous workers, and to work cooperatively with the Traditional Owner groups on more opportunities.

It was also pointed out that very few representatives in mining companies dealing with Indigenous people and native title issues were themselves Indigenous. This suggested that the focus on job opportunities should not only be on securing opportunities at lower level positions but look at options for career development programs whereby Indigenous persons may work in higher level positions in both an operational and advisory capacity. This was considered an opportunity on a broader scale for traditional groups to benefit from working with companies. There was strong agreement that any benefits in developing a relationship with mining developers should have a broad and enduring benefit for the traditional people.

## 17.5 Economic Opportunities

Reports on the realisation of economic opportunities for Aboriginal people from mining activity provided mixed outcomes. Traditional groups are keen to see benefits for their people

as a whole, not just a particular section, from any negotiations or partnerships established with mining developers. Discussions would suggest that APC is viewed as one of the more open and cooperative mining companies.

Some business opportunities have been taken up and continue to be available through the requirements of the Cultural Heritage Management Process, and other associated mining activity. Also, land has been provided in the industrial estate at Nebo for a business venture with an Indigenous focus. However, this has not progressed to date. This is possibly the site for relocation of some of the artefacts removed from the mining sites.

Other possibilities, some quite visionary, were also raised whereby traditional groups could realise various business opportunities and enable the traditional culture to be communicated to the general community. As with any business enterprise, such ventures must be proven feasible and viable and survive on their merit if they are to enjoy any long-term success. There were two main impediments to the success of small enterprises established with an Indigenous focus that any future strategies must attempt to address.

Firstly, enterprises established to identify, manage and disseminate cultural heritage have played a crucial role in ensuring Aboriginal control of cultural heritage, but can experience difficulty in securing ongoing contracts and income due to the very specialised nature of this work (i.e. it cannot be transferred out of the immediate area).

Secondly, while it appears that there are a number of avenues that have not been fully explored in terms of economic opportunities for Indigenous people, the capacity of Indigenous representatives to participate in the development of a more comprehensive strategy is the largely unpaid, or volunteer, nature of Traditional Owner representation and thus negotiation with mining entities. Persons in this role are often engaged in full-time work elsewhere and do not possess professional skills or experience in economic development. The general lack of resourcing in the broadest terms of traditional groups and, to date, limited capacity for dedicated activity and a systematic approach restricts the outcomes and limits the flow of enduring benefits. Where traditional groups appear in competition this further weakens their negotiating base.

## **17.6 Cultural Heritage Management**

APC has consulted with Traditional Owners on indigenous cultural heritage management issues. It is reported in the Coppabella EMOS and Moorvale EIS that places and objects in the mining lease areas with cultural heritage significance have been identified by the relevant Aboriginal groups and included in a number of reports submitted directly to the EPA Cultural Heritage Branch.

APC documentation and consultation with Indigenous representatives indicates that there has been a close working relationship on culture heritage issues, particularly identification with reports submitted by the respective groups. A number of cultural heritage issues were identified with recommendations proposed for management.

The Indigenous representatives indicated a strong interest in furthering the relationship with further involvement in cultural heritage management programs and policies and integrating these into overall mine management activities.

It has been reported elsewhere in this report that APC has developed a cooperative and respectful working relationship with Indigenous representatives. APC's commitment to an inclusive approach is indicated in the Coppabella EMOS and the Moorvale EIS. Commitment 18 is particularly relevant here, not only in terms of management, but also with regard to training and induction of contractors and employees. This is significant in effectively managing the issues and the relationship with Traditional Owners.

Commitment 18:

The recommendations of the Coppabella South Archaeological and Cultural Heritage Assessment will be addressed and complied with and should future activities associated with mining uncover anything which may be interpreted as Aboriginal in origin, this information will be immediately passed on to the Cultural Heritage Branch of the EPA and the Traditional Owners for further discussion and impact mitigation. All mine contractors will receive adequate training with respect to this issue to ensure that the company meets its legislative responsibilities (APC 2000, p. 4).

It is interesting to note that in the Coppabella EMOS (APC 2002, p. 57) the environmental protection commitment is that *the number of incidents which impact cultural heritage values will be zero*. However, one of the most difficult impacts for Traditional Owners to accept (regardless of any identified and acknowledged benefits) is the act of disturbing (digging) the country both spiritually and visually (Munn, in Connell and Howitt 1991). Land is inextricably linked to Indigenous social identity. In relation to the impact of mining in the Tanami, Munn (in Connell & Howitt 1991, p. 132) notes that the Walpiri notions of landscape involved a synthesis of biophysical, spiritual and social elements:

... the country not only contains the bodies of the ancestors inside it, but is also thought of as being the metamorphosed forms and imprints of their bodies, or body parts. We may take *guruwari* [graphic representations of the ancestors and the ancestral fertility power] in its visible aspect to be this amalgam of 'country' and 'body' through which and ancestor may be 'followed' ... Guruwari provide atemporal, transgenerational modes of inter-relationship between individuals and groups at the same time that they express the fundamental temporal or rhythmic sequences of movement from place to place, which the Warlbiri [sic] use to convey the ancestor's life cycle.

The development of a Cultural Heritage Management Plan incorporating Policies and Procedures also support APC's commitment to appropriately managing impacts. The specific level of involvement of Indigenous representatives has not been specifically stated; however, some ongoing relationship is envisaged.

The disturbance of country notwithstanding, the relationship that has been developed between APC and Indigenous representatives, along with APC's apparent willingness to work in an open and respectful manner, has been integral to the management of cultural heritage issues. APC's commitment to training all staff employed at the mine in this area has no doubt been instrumental in minimising potential negative impacts and securing the support of Traditional Owners.

## 17.7 Discussion

APC has clearly developed a far more constructive relationship with Traditional Owners than has been the case with many other mining companies. Traditional Owners appreciate the respect they have been shown, the openness of APC to dealing constructively with competing Native Title claimant groups, and the opportunities that involvement with the Coppabella Coal Mine have afforded for cultural, economic and social development.

Mining necessarily entails a substantial negative impact on Aboriginal cultural heritage through the disturbance of large areas of country. However, the full implications of this impact must be assessed in context of well over a century of dispossession and forced dispersal. While Traditional Owners felt powerless to stop mining, their involvement with APC had generated positive impacts they were unlikely to receive should mining have not occurred in terms of access to country and resources for capacity building.

In capitalising fully on the opportunities presented by the Coppabella Coal Mine Traditional Owners faced a number of challenges. The involvement of several contractors complicated employment programs while the economic sustainability of an enterprise established to undertake cultural heritage surveying and management is uncertain. Future challenges can be seen to lie in the management of country following cessation of mining due to the competing Native Title claims and limited resources among Traditional Owner groups for ongoing management, training and so on. While responsibility for addressing these issues does not lie solely with APC, resolving them will become increasingly important as the end of mine life approaches.

## 18.0 ENVIRONMENT

While the environmental impacts of the Coppabella coal mine are not the explicit focus of this study, some discussion of their relationship with social impacts is warranted. Reflecting most legislative definitions of ‘the environment’, the Coppabella Coal Mine EMOS (June 2002, p. 54) lists a number of social values among the environmental attributes it identifies as management issues. These include social and community amenity, community self-awareness and access to social and community services and infrastructure in the area, including economic conditions and economic benefits. Of these, all but amenity are dealt with in other sections of this report. This section will, however, discuss a number of issues in addition to amenity (or visual amenity in particular) that emerged as issues of sufficient concern to at least some stakeholders to warrant investigation. These included environmental management processes; dust, noise and vibration; and water resources.

As the following sub-sections make clear, the most significant social-environmental impact at the present time appears to be the impact of temporary accommodation facilities on the visual amenity and identity of Nebo township.

### 18.1 Environmental Management

The EMOS sets out the monitoring programs at the Coppabella Mine that are being undertaken to demonstrate compliance with statutory requirements and criteria presented in the EMOS.

APC operates under Environmental Licence and must submit an annual return to the EPA for non-standard environmental authority (mining activities) under Section 316 of the *Environmental Protection Act*. The licence comprises a number of schedules that set out the conditions specific to the APC licence for the Coppabella Coal Project. These schedules address general conditions, air, water, noise, waste management, monitoring and reporting and one for definitions.

The licence is contingent on the environmentally relevant activities being constructed, operated and maintained in accordance with conditions set out in the Environmental Protection Act 1994 (S4591). These include the accepted Environment Management Overview Strategy (EMOS), the accepted Plan of Operations.

The main focus of the annual return is to identify areas of non-compliance with the licence conditions. Various attachments explain the identified areas of non-compliance and any remediation. The schedules are quite detailed in terms of the compliance levels as well as the process to be followed and subsequent actions to be taken to redress the impact.

The EMOS (APC 2002, June, p. 54) states ‘that the local community has incorporated the changes associated with the development and expansion of the Coppabella Mine into the social fabric of the region without concern’. The consultation would suggest that there are

issues of concern by the community in relation to mining that have not directly been addressed. Some are issues that emerged during the initial consultation and perhaps have not been adequately addressed; others have been identified as mining operations continue.

The EMOS provides a commitment to establish a complaints register and the process for dealing with environmental complaints. A company representative advised that while they had established this register no complaints had been received. The company also maintains an environmental incident reporting system which classifies a complaint as an incident.

Environmental Impact of mining on the physical site as an operational issue—as well as in relation to mine closure—is dealt with under the Rehabilitation plan of the EMOS. Such programs have been a requirement of mining developments for some time and an integral component of addressing environmental issues. More recently the debate has focused on whether the rehabilitation requirements are sufficient to address the ‘real damage’ to the landscape as opposed a more superficial beautification.

## **18.2 Visual Amenity**

Visual amenity was raised in the community in relation to impacts on the mine site itself and on the town. A number of interviewees raised issues with regard to the aesthetic impact of mining activities and the mounds of brown dirt overburden framing the main road transit areas. These are the most visible aspects. One of the objections lodged by Nebo Shire Council in relation to APC’s Moorvale Lease Application addressed what Council saw as the detrimental impact the project would have on the visual amenity of the Shire. Based on the interviews conducted, there was not any overwhelming criticism of the visual impact of mining.

There seemed, however, to be more concern regarding the impact of the mining operation on the visual amenity of Nebo township. These impacts stem from the villages of temporary accommodation that have been constructed to house mine employees during their shift rotation. (All new accommodation has been through the approval processes of the Nebo Shire Council). This temporary accommodation was regarded to be of a lower aesthetic standard than permanent buildings. Combined with the demographic characteristics of the mine workforce this accommodation serves to make Nebo appear very much a ‘mining town’.

Concerns were also expressed that loss of visual amenity would have secondary impacts in the sense that it reduced the appeal of the area for other industries such as tourism (which the Council is trying to promote in a fairly low key manner) and for permanent residents. The question of whether these divergent development strategies can coexist and achieve their respective goals is something the Shire and community need to give careful consideration, keeping in mind that Council has been very firm in its view that mine employees should be accommodated as far as possible in town.

### **18.3 Dust, Noise and Vibration**

There have been no formal complaints from the local community regarding noise and vibration since operations began in 1998 (Coppabella Coal Mine EMOS June 2002, p. 36).

In the Moorvale EIS Assessment Report (APC July 2002) it is recommended that the proponent [APC] notify local landholders of blasting times and locations. Based on information from those landholders consulted in the course of preparing this report, generally this occurs.

This is also the case in relation to air. During the life of the operation to date, no complaints regarding odour or air quality have been received. APC's documentation reports that air quality is not expected to be impacted on a local or regional level by the existence of the mine.

A monthly monitoring program is in place and air quality is monitored for health and safety purposes as well as for environmental purposes. The licence conditions specify the checking of compliance and any monitoring and reporting conditions. Such information must be provided in the Environmental Annual Return or at the request of the Administering Authority.

Air quality is seen to be managed in association with dust. Complaints are the measure of the success of control strategies. While landholders may have raised issues in relation to dust problems, these appear to be dealt with on a more informal basis with a view to achieving an agreeable solution between the parties thereby negating the need for a formal complaint to be registered.

### **18.4 Land Disturbance and Tree Clearing**

The Moorvale EIS indicates that 1425 ha (of a total project area of approximately 4500 ha) will be disturbed by mining and process operations. This comprises approximately 1325 ha of cleared grassland with varying stages of vegetation regrowth while approximately 100 ha is open forest.

During the life of the Coppabella Coal Mines, approximately 2390 hectares will be cleared progressively prior to construction and mining (APC 2002, EMOS Coppabella Coal Mine p. 16).

It is acknowledged in these documents that selective clearing of the various areas had already occurred (as a result of other activities) prior to mining. Mining necessitates the clearing of all vegetation on the site of the mining and associated mining operations, but not necessarily across the entire lease site.

During the consultation undertaken as part of this study, comment was made regarding the amount of tree clearing undertaken by mining ventures. A small number of community members commented that, despite increased community opposition to tree clearing by



agricultural enterprise, the mining industry attracted very little criticism. These community members felt that considering the scope and nature of tree clearing required to enable mining, it does not attract a proportionate share of public scrutiny.

Mining operations are required to identify the environmental impacts associated with land clearing and rehabilitate the site based on legislative guidelines. APC has set out its commitment to rehabilitation and the rehabilitation plan in various organisational documentation, including the Moorvale EIS and the Coppabella EMOS. The adequacy of such mining rehabilitation requirements generally, and the reality of proposed future uses, have perhaps not been thoroughly tested.

Concern over the impact of land disturbance and tree clearing were also issues raised by Indigenous representatives in terms of both a cultural perspective and the 'unknown' long term environmental effects.

## **18.5 Water Resources**

Water is used in various aspects of coal mining activities and is integral to the process which includes the support activities. The Coppabella Coal Mine's demand for water is 1500Ml per annum. Through the EMOS, APC has committed to ensure that the physical, chemical and biological integrity of watercourses including Thirty Mile Creek, Harry Brandt Creek and Humbug Gully, and their suitability for supporting grazing cattle is maintained during the mining operation.

The Environmental Licence specifies the compliance issues with regard to water. The Annual Return for 2002 notes a non-compliance relating to coal sediment in Thirty Mile Creek but reports the impact as a temporary environmental nuisance whereby there was no environmental harm caused. There was no long-term impact which is why it was classified as an environmental nuisance.

Community members did question whether longer-term impacts on these water courses were really known. Specific questions related to the unknown impact of runoff, potential contamination, and management of water storages following mine closure. Should longer-term impacts emerge there was also concern regarding how these would affect other uses such as grazing.

The adequacy of overall water supply was also raised; a concern that would be intensified should competing demands for community water resources emerge. Mention was made of issues surrounding the Braeside Bores and its future as a water source. Water currently used by the mine does not impact directly on community water availability as water is sourced from the Teviot Dam through pipeline and is part of an unused allocation provided to the North Goonyella and Burton Downs Mine.

The Shire has endured and continues to feel the impact of severe drought conditions and these conditions have tended to heighten concerns of long term water availability.

To date, water use by APC has not been a contentious issue for the community.

## 18.6 Discussion

While environmental issues have not been contentious in relation to the Coppabella Coal Mine (indeed, the community survey showed the majority of residents not to believe there had been environmental impacts), interview participants certainly expressed a view that coal mining did disturb an enormous quantity of material and necessitated close monitoring to ensure negative environmental impacts did not eventuate. Regular communication of monitoring results, together with the involvement of relevant groups in monitoring and interpretation of results, may help to avoid future escalation of concern.

## 19.0 CONCLUSION

The main findings of the Social Impact Assessment, together with recommendations regarding management of impacts, are contained in Table 19.1.

Residents of Nebo Shire, on the whole, accept mining and believe it brings positive benefits to their Shire and region, particularly in relation to job opportunities, roads and telecommunications and services such as the permanent ambulance officer and private businesses. In raising issues related to the Coppabella Coal Mine through the course of this study they have been concerned not to oppose mining but to ensure that the interests of local people are not overlooked in planning and decision-making about mining.

While the Coppabella Coal Mine has had many significant impacts, in looking through Table 19.1 it is evident that many of this study's findings relate, in fact, to a lack of impact. While the mine may not be responsible for massive social dislocation, neither has it generated a number of the positive benefits that many may intuitively have expected. This is particularly evident in relation to the slow response of entrepreneurs to the development of complementary and new enterprises and to the construction of more permanent housing. Non-impacts in these respects can clearly be seen as highly significant given the increasing dependence of Nebo Shire on mining for employment and income.

Despite economic growth associated with mining creating only a small increase in population, Nebo Shire displays many of the characteristics of a community that is highly sensitive to any downturn in the mining sector. The Regional Forest Agreement (RFA) social impact assessment process for Queensland identified a number of indicators for the identification of vulnerable communities. These indicators were grouped around three main concepts: sensitivity to change in the local economy, social values about resource use and the service capacity of the locale/region.

Indicators relating to sensitivity to change in the local economy due to changes in resource use included: economic diversity, rates of unemployment, rates of employment in resource-use industries subject to change, levels of education and qualifications, income, housing ownership, purchasing and rental, and age. These indicators clearly point to some areas of concern for Nebo. The Shire's economy is dependent on mining (which will inevitably close down) and agriculture (which is labour shedding), with little evidence of diversification. Unemployment is low as much because affordable rental accommodation is unavailable as because of employment opportunities. While in the short-term unemployment is not an issue of major concern, this is likely to change when the mining sector inevitably contracts. Employment is now concentrated in one industry—mining. Education levels are low and jobs are concentrated in the semi-skilled and unskilled categories. Housing availability is low. There has been an increase in the population aged over 65.

Social values on resource use in Nebo are conducive to mining, but recognise that the presence of mining is necessarily finite. The general community have no desire to become entirely dependent on it and believe it necessary to use mining as a platform to support other development paths. This is a positive sign for community capacity to cope with change.

However, the service capacity of Nebo is clearly of major concern, placing severe constraints on the quality of life of residents and the ability of the Shire to attract investment and residents.

On the whole, the RFA indicators suggest that the capacity of the Nebo community to deal with any downturn in the mining industry will be limited. Further, with mining encouraging the gradual masculinisation of the Nebo population without increasing participation in social activities and networks, it may be seen as having some detrimental effects on this capacity. Sociologists use the concept of social capital to illustrate the importance of networks to economic, social and cultural development. They argue that constructive relationships between groups and individuals that support diversity, a climate of trust, acceptance of difference, conflict resolution and the mobilisation of resources is critical to the exploration and exploitation of new opportunities (Flora et al., 1997; Gray and Lawrence, 2001). It appears that mining has done little to enhance social capital in Nebo. This is of significant long-term concern due to the potential, in the event of a downturn in the mining industry, for Nebo to experience significant outmigration and income loss without sufficient capacity to generate alternative development paths and avoid the creation of a poverty trap for those left behind with unsaleable homes, limited capital and untransferable skills.

Such a future is not inevitable and APC has engaged with some stakeholders in a manner that has enhanced capacity and social capital. The most obvious example of this is the capacity building approach that APC has taken to dealing with Traditional Owners. While Traditional Owners have legal and moral rights that differ from the rest of the community, the good will that has developed between APC and Traditional Owners should be used as something of a model for their engagement with other stakeholders. The strategies used in this regard may be very different, but the emphasis on building social capital between the groups should be generalised.

Practical strategies to build greater social capital and capacity with local government and the wider community may include taking a more proactive approach to engagement with regional planning processes that provide avenues for community participation and negotiation, and seeking to develop in concert with local government a formal Community Infrastructure Contribution Plan under the *Integrated Planning Act 1997*.

There is not a clear level of agreement between the Nebo Shire Council and APC over the impacts on, and appropriate contributions to, social infrastructure in the Shire. This is evidenced by the documentation in the Moorvale EIS, and the various comments received during the course of this study. The results of this study show that the development of the Coppabella and Moorvale mines are not creating major burdens on social infrastructure. This is largely because there has not been a major influx of permanent residents into Nebo or Coppabella.

However, it also appears that there is no clear vision in the local community for the development of Nebo and Coppabella. The debate in the local community over the introduction of a sewerage system demonstrates the different visions that residents have for their community. As well, there is the sense that the community is focusing on the needs of the current permanent residents, without focusing on the needs of the temporary workers in the Shire, or how to attract more permanent residents to move to the Shire. There is a need for a Social Infrastructure Plan to be developed that engages the community about these issues. The Nebo Shire Council is the appropriate body to develop such a plan.

Funding of social infrastructure is the responsibility of different levels of government. In major residential developments, local government can collect contributions from developers under the guidelines of the *Integrated Planning Act* 1997 (Qld). It is also possible that local industry makes voluntary contributions to social infrastructure, particularly where it contributes to employee satisfaction levels, and hence to workforce availability and participation rates. It is possible therefore that it may be in the interests of APC to make voluntary contributions to social infrastructure in Nebo and Coppabella where it benefits their workforce and mining operations.

Finally, it was noted in the methodological section of this report that ongoing monitoring of social impacts would be recommended. Given the type and magnitude of the impacts identified it is not recommended that such monitoring be intensive. However, monitoring will help to identify trends in community development that may be important components of other regional development issues

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<sup>3</sup> CCATCH—Community Contact Across the Central Highlands is a network that includes 91 community service personnel in 49 government agencies and on government organisations.

<sup>4</sup> This was first published in April 2001 after consultation between the mines inspectorate, unions and mine management, and the Department of Natural Resources and Mines.

**Table 19.1** Summary of social impacts

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
Population characteristics	Demographic change (eg. transient male population)	Nebo Shire Regional	Local government Nebo Shire residents Mine employees	Demographic picture has changed so as to increase vulnerability to downturns in mining industry. Dimensions include: <ul style="list-style-type: none"> <li>• Expectation of long-term population decline.</li> <li>• Historical loss of Traditional Owners from area.</li> <li>• Low education levels.</li> <li>• Highly polarised income levels.</li> <li>• Dependence on mining for employment and dominance of unskilled and semi-skilled positions.</li> </ul>	Further development of permanent residential housing to encourage immigration of women and families.  Support Council plans for economic diversification.  Consideration of business development programs that encourage women's participation.  Develop exit strategy (see below).
	Demand for human services (eg. health, education, counselling etc)	Nebo Shire Regional	Local government Government and non-government service providers Nebo Shire residents Mine employees	Little change to low level of human services availability.  Expected increases in school enrolments not eventuating.  Appointment of one full-time ambulance officer.	Encourage immigration of women and families to build critical mass for service provision.  Consider human services in development of a Social Infrastructure Plan (see below).
	Demand for and cost of access to housing and accommodation	Nebo Shire Regional	Local government Other businesses Nebo Shire residents Regional residents Mine employees	Considerable unmet demand for housing in Nebo Shire.  Ability of market to meet housing demand constrained.	Incentives offered by government or developers to encourage private entrepreneurs to respond to housing demand.

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
	Demand for community infrastructure (eg. recreation facilities)	Nebo Shire Regional	Local government Other businesses Nebo Shire residents Regional residents Mine employees	Unresolved debate over who should pay for community infrastructure.  Mains sewerage highest Council priority in order to improve services for existing residents and reduce the cost of further investment in the town by developers.  Sport and recreation facilities inequitably distributed while the shiftwork patterns limit participation in sport and leisure activities by mine employees.	Develop a Social Infrastructure Plan with involvement from community and APC.  Identify appropriate sources for funding, including voluntary contributions from APC.
	Crime (incl. domestic violence)	Nebo Shire Regional	Police Nebo Shire residents Regional residents Mine employees	Perception of increased crime risk.  Some increase in crime rates evident but overall rates remain extremely low.  Anecdotal evidence that social problems associated with shift-work and high disposable incomes exported to locations of permanent residence for mine employees.	Support investigation at a regional level of social issues affecting mine employees that potentially influence crime, family life and so on.
	Community participation and integration	Nebo Shire	Local government Nebo Shire residents Mine employees	Participation in community activities and groups limited among mine employees.  Extra burden placed on voluntary emergency service organisations.  Likelihood that few mine employees will remain in area following downturn in the Shire's mining industry.	Consideration within Social Infrastructure Plan of direct and ongoing support to volunteer emergency service organisations.

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
Economic/industrial base	Traffic and fatigue	Nebo Shire Regional	Local government Nebo Shire residents Mine employees	Increased volumes of commuter and commercial traffic. Anxiety and stress among residents over perception of increased risk and possibility of coming across accidents. Extra burden on emergency services (see above). Shiftwork practices encourage fatigue through long hours and disturbance of sleep patterns. Improvements in road quality and implementation of fatigue management programs may have contributed to recent drop in accident rates.	Continue development of fatigue management programs. Encourage employment of local residents and relocation of other employees to immediate area. Communicate content and results of fatigue management programs to wider community.
	Anticipation of change (eg. psychological distress)	Mine proximity Nebo Shire	Nebo Shire residents	Conflict among community members over whether change is desirable and how it should be managed.	Open and participatory planning at local government level.
	Community identity	Nebo Shire	Nebo Shire residents	Most evident impact in Nebo township due to change of employment and economic base. Residents resistant to identity of 'mining town' as they believe this will limit economic diversification by discouraging new residents and investment in non-mining industries.	Reduce visual impact of temporary accommodation facilities.



Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
	Employment opportunities and labour availability	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents Mine employees	Extremely low unemployment levels in Nebo Shire reflect both employment opportunities in mining sector and low availability of affordable housing. Reduction in labour availability for non-mining businesses.	Improve housing and service provision.
	Business opportunities and constraints (incl. access to property and transport infrastructure)	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents	Mining now dominates economic and industrial base of Nebo. Limited flow-on expansion of other businesses in response. Question over whether non-mining business expansion will be sustainable beyond the life of coal mining.	Improvements in community infrastructure so as provide a more attractive environment for investment. Develop strategies to build transferable and entrepreneurial skills among residents.
	Mine closure	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents Mine employees	Nebo and Glenden most vulnerable to downturns or exit of mining. Numbers of existing residents likely to express a desire to remain where they are despite limited capacity of local government to maintain services across Shire.	Continue strategy of co-locating mine workforces with other communities to encourage diversification and sustainability. Develop structured and participatory process of planning for mine closure.
	Anticipation of change (eg. investment decisions)	Mine proximity Nebo Shire Regional	Local government Other businesses Nebo Shire residents	Development of business opportunities that capitalise on mining slow, particularly in relation to housing.	Consideration within Social Infrastructure Plan of strategies to enhance existing local government initiatives.
	Level of	Mine	Local government	Development of Moorvale operation by	Resolve issue in more structured

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
Mine-community relationships	cooperation/conflict over type, magnitude and direction of change	proximity Nebo Shire	Other businesses Nebo Shire residents	APC in addition to Coppabella site has increased expectations that APC will contribute to community infrastructure.  Considerable concern over willingness of APC to negotiate with stakeholders over plans for development of the sites at Coppabella and Moorvale and plans to contribute to community infrastructure.	manner by developing Social Infrastructure Plan with the community and APC.
	Consultation and communication	Mine proximity Nebo Shire	Local government Other businesses Nebo Shire residents	Generally positive experience among stakeholders of consultation and communication with APC.  Traditional Owners, local government and immediate neighbours secured best access to APC management.  This did not necessarily translate into genuine input into planning and decision-making.  Perception remains that mining companies only do enough by way of communication, consultation, impact assessment and contribution to the community to progress mining development.	Seek opportunities to allow genuine input into decision-making related to the mine and management of its impacts.  Develop a local newsletter with regular contributions from APC.

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
	Strength of local and regional institutions for planning and governance	Nebo Shire Regional State	Local government Other businesses Nebo Shire residents State government agencies	<p>Local government's capacity to participate in planning and governance limited by state-based approval processes and revenue flows.</p> <p>Indigenous rights to participation in planning and management limited by narrow legislative understandings of Native Title and cultural heritage, limited capacity to participate as volunteers in resource management and the absence of culturally appropriate governance processes.</p> <p>APC has acted to address these concerns in relation to their own operation, although it is unlikely that this positive impact will extend far beyond these sites.</p> <p>Little engagement by the mining sector in regional planning processes that are more accessible to local institutions and people.</p> <p>Little contribution of mining sector to social capital of community.</p>	<p>Although state-based approval processes allow mining companies to side-step regional and local planning and governance processes, serious engagement with these processes would provide a conduit for relationship building with communities and local government and add to social capital development.</p>
Native title	Access to country	Mine proximity Nebo Shire	Native title claimants Other Nebo Shire residents	<p>APC's operations have enhanced access to country for both Traditional Owner groups despite their competing claims.</p> <p>Consideration has been given in the rehabilitation plans for the mine sites or access and use by Traditional Owners post mining for cultural and economic purposes.</p>	<p>Capacity building for Indigenous people must remain a high priority if opportunities afforded by access to, and management of, country post mining are to eventuate.</p>

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
	Training opportunities	Mine proximity Nebo Shire	Native title claimants	Training and employment programs for Indigenous people have largely been successful, although challenges remain in recruiting Aboriginal people into more senior positions within the mining industry and ensuring the economic sustainability of Aboriginal enterprises post mining.	Extend training programs to encourage entry of Indigenous people to more senior and professional roles within mining industry.  Consider development of training and capacity building programs to enhance small enterprise development.
	Economic opportunities	Mine proximity Nebo Shire	Native title claimants	Cultural heritage management has provided useful opportunities for capacity building and economic development.  Support has been secured through Native Title compensation for a range of other community initiatives.  Consideration has been given in the rehabilitation plans for the mine sites or access and use by Traditional Owners post mining for cultural and economic purposes.	Capacity building for Indigenous people must remain a high priority if opportunities afforded by access to, and management of, country post mining are to eventuate.

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
Environment	Cultural heritage management	Mine proximity Nebo Shire	Native title claimants	<p>The disturbance of country through mining is a substantial negative impact. A Cultural Heritage Management Plan has been negotiated with both groups of Traditional Owners.</p> <p>Cultural heritage management has provided useful opportunities for capacity building and economic development.</p> <p>Consideration has been given in the rehabilitation plans for the mine sites or access and use by Traditional Owners post mining for cultural and economic purposes.</p>	<p>Continue involvement of Indigenous groups in cultural heritage management.</p> <p>Involve Traditional Owners in further development of rehabilitation plans.</p>
	Visual amenity	Mine proximity Nebo Shire	Local government Nebo Shire residents	Temporary accommodation facilities surrounding Nebo township most significant impact.	<p>Encourage employment of local residents and relocation of other employees to permanent accommodation.</p> <p>Consider design and landscaping of temporary accommodation facilities to reduce visual impact.</p>
	Dust, noise and vibration	Mine proximity Nebo Shire	Local government Nebo Shire residents	No formal complaints. Concern over long-term impacts of coal dust on environment despite lack of evidence of immediate problem.	Improve communication of monitoring results and seek to involve relevant community groups and members in monitoring and environmental management.

Major dimensions of social change	Preliminary social impacts/issues	Scale of impact	Interest groups affected	Summary of findings	Strategies to enhance positive impacts and mitigate negative impacts
	Land disturbance and tree clearing	Mine proximity	Local government Nebo Shire residents Traditional Owners	Concern over long-term impacts despite lack of evidence of immediate problem.	Improve communication of monitoring results and seek to involve relevant community groups and members in monitoring and environmental management.
	Water	Mine proximity Nebo Shire	Local government Other businesses Nebo Shire residents Dept of Natural Resources and Mines	Concern over long-term impacts on adequacy of water supply despite lack of evidence of immediate problem.	Improve communication of monitoring results and seek to involve relevant community groups and members in monitoring and environmental management.

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# **Appendix A**

## **Survey of Miners**

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Miner’s Survey

Survey of Spending Patterns from the  
Coppabella Coal Mine

Centre for Social Science Research,  
Central Queensland University, Rockhampton, 4702.

This survey is being undertaken by John Rolfe, Stewart Lockie and others from Central Queensland University and is supported by Australian Premium Coals. Survey results will provide information about how much impact the Coppabella Coal Mine is having on the local economy. **Your answers are treated as strictly confidential and neither your name nor address is recorded.**

Q 1: Which company do you work for at the Coppabella Mine?

- Australian Premium Coals☐
- Roche☐
- Leighton☐
- Sedgman☐
- Other (Please indicate)☐

Q 2: What is your usual pattern of work?

- A Shift Roster☐
- Regular Hours (e.g. Monday to Friday)☐
- Other (including casual)☐

Q 3: When you are working/rostered on shift, do you

- Stay at your main home and commute to the mine each day?☐
- Stay in camp in Coppabella and commute to the mine each day?☐
- Stay in camp in Nebo and commute to the mine each day?☐
- Stay in other accommodation in Nebo and commute to the mine each day?☐
- Other (Please indicate)☐

Q 4: In the past 12 months, have you participated in any of the following in the Nebo Shire?

- Played in sporting events☐
- Attended sporting events☐
- Participated in cultural events (eg country music)☐
- Attended cultural events (eg country music)☐
- Attended general entertainment events☐

Q 5: In the past 12 months, have you used any of the following services in the Nebo Shire?

- Health services☐
- Emergency Services (e.g. Ambulance, Police, Fire)☐
- Educational services☐
- Nebo Shire Council services☐

**Q 6:** How much money do you think you spend in Nebo / Coppabella each week ☐ or per rostered shift ☐ (e.g. 4 days)  
[Tick to indicate work period]

Item	\$\$
Accommodation	
Food	
Alcohol, cigarettes	
Fuel	
Car expenses	
Entertainment, magazines, books	
Other	

**Q 7:** What is your main town of residence?

**Q 8:** Would you like to move to a main town of residence closer to the mine site?

Yes

☐ (Go to Q 9)

No ☐ (Go to Q 10)

**Q 9:** If Yes to Q8, what stops you from moving to a closer town?  
(Please tick relevant categories)

- ☐ Lack of housing for rental
- ☐ Lack of housing for purchase
- ☐ Educational facilities for children
- ☐ Job opportunities for partner
- ☐ Family do not want to move
- ☐ Other (Please indicate)

**Q 10:** If No to Q8, why do not you want to move closer?  
(Please tick relevant categories)

- ☐ Partner has job
- ☐ Family do not want to move
- ☐ Educational facilities for children
- ☐ Recreational/entertainment facilities
- ☐ Prefer living in a bigger centre
- ☐ Other (Please indicate)

## **Appendix B**

# **Survey Administered to determine Attitudes about Social and Environmental Impacts of Coal Mining**

## **Nebo District Survey**

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## Nebo District Survey

Hello, my name is \_\_\_\_\_ and I am conducting a general survey on development issues and expenditure patterns in the Nebo area for Central Queensland University. The survey is brief and easy to do. The answers are anonymous – we do not record individual responses. Are you able to help me by answering a few questions?

Q1. What is your nearest town?

(Probe to check if people live in town or outside – find out distance and get rough idea of direction – i.e. 20 kms from Nebo on Clermont side)

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**The first part of the survey is about expenditure patterns in the region.**

Q2. How often do you go shopping in Nebo? (read out list in table below – or tick closest answer)

Q3. How often do you go shopping in Mackay? (read out list in table below – or tick closest answer)

(Shopping covers most household items – eg food, clothes, appliances)

	Nebo	Mackay
Everyday		
More than once a week		
Once a week		
Once every two weeks		
Once a month		
Other		
Can't say		

---

Q4. Can you estimate what proportion of your purchases are made in Nebo, Mackay or elsewhere? (i.e. 40% of groceries might be purchased in Nebo, 40% in Mackay and 20% elsewhere). (If people are shopping in Glenden, please count this into the Mackay area but put a note in to this effect).

	Nebo township	Mackay area	Elsewhere in Qld
Food/groceries/alcohol			
Clothes and footwear			
Furniture and appliances			
House and garden expenses			
Hair dressing, beauty, personal expenses			
Travel, recreation, holidays			
Motor vehicle purchases			
Motor car repairs, other repairs			
Medical care and health			
Education expenses			

Q5. When you consider all of the things that you might spend money on (including travel, educational expenses, house and garden), can you give a rough estimate of the proportion of your household spending that you spend in the following areas? (eg 10% in Nebo, 60% in Mackay, 30% in rest of Qld).

	Nebo	Rest of Mackay region	Elsewhere
Proportion of spending			

This part of the survey is about the development of coal mining in the region.

Q6. Please rate the following statements about of coal mining development using the following criteria:

- 1 = agree strongly
- 2 = agree a bit
- 3 = neither agree nor disagree
- 4 = disagree a bit
- 5 = disagree strongly

Statement	Rating
Local people get more work because of the coal mines	
The mines will bring more families to the Nebo area	
The mines will help Nebo as a town to develop	
The mines mean that there will be better roads and other services in the area	
The mines will improve the lifestyle of people in the Nebo area	
The mines will help to develop Mackay as a business centre	
New people mean the character of Nebo is changing for the worse	
Local rates may have to increase so the Council can improve the infrastructure and services in Nebo	
Different people in the region may mean that crime and social problems are on the increase	
Nebo should try to attract more mining families to live in the town	
The coal mines create environmental problems in the local area	
The coal mines create cost burdens for the Nebo Shire Council to provide extra services	
The coal mines support local businesses and events	
The increases in house prices and rents in Nebo are a good outcome	
The mines create noise and other nuisance problems	
Increased traffic means the district is not as safe as it used to be	
Nebo would continue to survive without many changes if there were no coal mining	
State Government does a good job planning and controlling mine-related development in the region	
Local government does a good job planning and controlling mine-related development in the region	



This part of the survey is about how you view environmental issues in the Mackay region.

Q7. Can you rate how serious you think the following environmental issues are?

1 = very serious

2 = serious

3 = a bit serious

4 = not at all serious

Issue	Rating
Blue green algae on Lake Elphinstone	
Loss of rainforest in the Mackay hinterland	
Chemical and fertiliser runoff from cane farms	
Tree clearing in the region further west from Mackay	
Damage to the Great Barrier Reef	
Disturbances from coal mining in the region	
Water quality issues in streams and estuaries	
Problems of salinity on farming and grazing lands	

The last questions are to ensure we have a good cross section of the community.

Q8. Record the sex of respondent

Male 1

Female 2

Q9. How old are you?

Under 20	1
20-30	2
31-45	3
46-65	4
Over 65	5

Q10. How long have you lived in the Nebo area?

Less than 2 years	1
2 - 5 years	2
5 - 10 years	3
10 – 20 years	4
Over 20 years	5

Q11. How many people live in your household? \_\_\_\_\_

Q12. Do you have children?

Yes	1 (go to Q X)
No	2 (go to Q Y)

Q13. How many children are still living at home?

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Q14. What is the main occupation associated with your household?

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Q15. If I nominate three broad income categories, could you tell me which one is relevant for your household?

*(Note: we want annual household income before tax)*

Less \$40,000	1
\$40,000 - \$80,000	2
More than \$80,000	3

THANK YOU FOR COMPLETING THE SURVEY!

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## **Appendix C**

# **Survey Administered to determine Attitudes about Social and Environmental Impacts of Coal Mining**

## **Mackay District Survey**

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## Mackay District Survey

Hello, my name is \_\_\_\_\_ and I am conducting a general survey on development issues and expenditure patterns in the Mackay area for Central Queensland University. The survey is brief and easy to do. The answers are anonymous – we do not record individual responses. Are you able to help me by answering a few questions?

**The first part of the survey is about expenditure patterns in the region.**

Q1. How often do you go shopping in Mackay? (read out list in table below – or tick closest answer)

(Shopping covers most household items – eg food, clothes, appliances)

Mackay
Everyday
More than once a week
Once a week
Once every two weeks
Once a month
Other
Can't say

Q2. Can you estimate what proportion of your purchases are made in the Mackay area or elsewhere in Qld? (i.e. 90% of health service may be purchased in Mackay and 10% elsewhere)

	Mackay area	Elsewhere in Qld
Food/groceries/alcohol		
Clothes and footwear		
Furniture and appliances		
House and garden expenses		
Hair dressing, beauty, personal expenses		
Travel, recreation, holidays		
Motor vehicle purchases		
Motor car repairs, other repairs		
Medical care and health		
Education expenses		

Q3. When you consider all of the things that you might spend money on (including travel, educational expenses, house and garden), can you give a rough estimate of

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the proportion of your household spending that you spend in the Mackay region compared to elsewhere in Qld?

	Mackay region	Elsewhere in Qld
Proportion of spending		

This part of the survey is about the development of coal mining in the Mackay region.

Q4. Can you rate the following statements about of coal mining development?

- 1 = agree strongly
- 2 = agree a bit
- 3 = neither agree nor disagree
- 4 = disagree a bit
- 5 = disagree strongly

Statement	Rating
Local people get more work because of the coal mines	
The mines will bring more families to the Mackay region	
The mines will help Mackay as a city to develop	
The mines mean that there will be better roads and other services in the area	
The mines will improve the lifestyle of people in the Mackay region	
The mines will help to develop Mackay as a business centre	
New people mean the character of Mackay is changing for the worse	
Local rates may have to increase so Councils can improve the infrastructure and services in Mackay	
Different people in the region may mean that crime and social problems are on the increase	
Mackay should try to attract more mining families to live in the area	
The coal mines create environmental problems in the region	
The coal mines create cost burdens for local councils to provide extra services	
The coal mines support local businesses and events	
Any increases in house prices and rents in Mackay are a good outcome	
The mines create noise and other nuisance problems	
Increased traffic means the district is not as safe as it used to be	
State Government does a good job planning and controlling mine-related development in the region	
Local government does a good job planning and controlling mine-related development in the region	

This part of the survey is about how you view environmental issues in the Mackay region.

Q5. Can you rate how serious you think the following environmental issues are?

1 = very serious

2 = serious

3 = a bit serious

4 = not at all serious

Issue	Rating
Blue green algae on Lake Elphinstone	
Loss of rainforest and coastal vegetation in the Mackay hinterland	
Chemical and fertiliser runoff from cane farms	
Tree clearing in the region further west from Mackay	
Damage to the Great Barrier Reef	
Disturbances from coal mining in the region	
Water quality issues in streams and estuaries	
Problems of salinity on farming and grazing lands	

The last questions are to ensure we have a good cross section of the community.

Q6. Record the sex of respondent

Male 1

Female 2

Q7. How old are you?

Under 20 1

20-30 2

31-45 3

46-65 4

Over 65 5

Q8. How long have you lived in the Mackay area?

Less than 2 years 1

2 - 5 years 2

5 - 10 years 3

10 – 20 years 4

Over 20 years 5

Q9. How many people live in your household? \_\_\_\_\_

Q10. Do you have children?

Yes	1 (go to Q X)
No	2 (go to Q Y)

Q11. How many children are still living at home?

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Q12. What is the main occupation associated with your household?

---

Q13. If I nominate three broad income categories, could you tell me which one is relevant for your household?

*(Note: we want annual household income before tax)*

Less \$40,000	1
\$40,000 - \$80,000	2
More than \$80,000	3

THANK YOU FOR COMPLETING THE SURVEY!

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# **Appendix D**

## **Overview of Consultation**



## OVERVIEW OF CONSULTATION

A range of stakeholders were consulted in the course of undertaking the Economic and Social Impacts Assessments in the Scoping Study and the subsequent Study.

To respect the anonymity of the respective contributions, information on those consulted is provided in summary form only. The consultation was broad to ensure appropriate scope in data collection, and on occasions involved speaking with representatives of a range of organisations or sectors. Additional information may have also been obtained from documentation of these entities.

Due to the nature of the community, individuals may have been consulted in more than one capacity or role.

Stakeholder	Comment
Business operators	Aside from the formal survey of business houses, other issues were raised with representatives of businesses operating in Nebo across a range of activities and its surrounds.
Community Groups and participants	Representatives of a cross section of community groups were consulted in relation to their specific interests as well as seeking broader comment on community issues.
Emergency Services	Representatives of key emergency service groups including Police and Emergency Services.
Landholders	A sample of landholders who neighbour the mine/s or have had reason for interaction with the mine were consulted.
Local Government	Representatives from the Nebo Shire Council including Councillors and Administrative Staff.
Queensland Government Agencies	Representatives of key government agencies were consulted in relation to their field of expertise as well as seeking broader comment on community issues. Examples of these include Transport and Education.
Traditional Owners	Representatives of the 2 recognised Traditional Owner groups were consulted on matters specifically related to their interests as well as broader issues.
Landholders	A sample of landholders who neighbour the mine/s or have had reason for interaction with the mine were consulted.

# **Appendix E**

## **Sport and Recreation Facilities Inventory – Nebo Shire**

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## NEBO SHIRE

### SPORT and RECREATION FACILITIES INVENTORY SNAPSHOT

#### Nebo Shire's Existing Sport, Recreation and Open Space Supply

There are approximately 29 sport and recreation facilities within the Shire's key centres. These proved a good supply of 'traditional' activities such as golf, swimming, lawn bowls, tennis and equestrian pursuits.
Popular field sports include touch football, junior soccer, rugby league and social cricket. There are no facilities for field sports such as hockey, Aussie Rules, softball or baseball, however, some existing fields have the capacity for modification.
Cross-boundary facility usage is common – Mackay City has a 'shadow' effect as the region's key centre, and is the focus for major sport and recreation venues and events.
Sport and recreation facility supply varies across Nebo Shire- an imbalance is evident between different townships, age groups and genders.
Glenden demonstrates the greatest diversity in facility supply, including a multi-purpose indoor centre (including gymnasium), catering for a wide range of indoor court sports, fitness training, martial arts and community events.
Nebo and Coppabella have a limited range of sport and recreation opportunities. No purpose-built indoor facilities are provided in these communities.
Parks have been established in each township and cater for a limited range of recreational activities such as picnics, barbeques and children's play. Some parkland equipment is in need of repair to increase community patronage.
About 45% of the Shire's facilities are multi-purpose venues, but serve a single club or activity and offer spare capacity for future diversification. A number of facilities are also under-utilised due to lack of community interest, participant numbers and/or funding to undertake necessary upgrades.
There appears to be shortfalls in youth-orientated recreation settings in all communities.
The most popular organised sports include lawn bowls, water skiing and swimming.
Popular recreational activities include social tennis, golf, walking, fitness training and arts and crafts.
About 60% of residents are satisfied with the <i>standard</i> of local sport and recreation facilities, but less than 40% were satisfied with the <i>range</i> of facilities, suggesting that more variety is a short term need, particularly in the smaller centres.

Source: GHD 2002 Sport and Recreation Facility Needs Study Final Report

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# **Appendix F**

## **Queensland Transport Road Use Statistics**

TRAFFIC VOLUME FOR THE PEAK DOWNS HIGHWAY IN MACKAY DISTRICT

Source: Queensland Department of Transport

LEGEND

Road 33A starts at the district boundary and ends at Reynolds St in Nebo.

Road 33B starts at this intersection and then finishes in Mackay at the intersection with the Bruce Highway (10G).

Road 514 (Oxford Downs - Sarina Road) connects the Peak Downs Highway (west of Nebo) with the old inland highway (Marlborough - Sarina Road).

NOTES

Figures highlighted in RED are not practical as the creation and merging of road sections will affect the 1 year growth rates as they will be related to the old road segment from the previous year. These new segments were created to try and capture a better representation of the mine traffic volumes, so where possible use 5 year growth rates for calculations. As traffic volumes may fluctuate year to year rather than being steady, these changes in volume may seem high but this is generally from having a low volume road.

Road No.	Chainages	AADT	% Commercial	1 Year Growth Rate	5 Year Growth Rate	Year
33A	100.900 - 148.395	1188	16.15			1998
33A	148.395 - 177.135	777	23.37			1998
33B	0.000 - 62.070	1174	16.90			1998
33B	62.070 - 76.810	3159	10.10			1998
33B	76.810 - 81.310	5172	8.36			1998
33B	81.310 - 85.620	11332	20.00			1998
33B	85.620 - 87.780	9281				1998
514	0.000 - 27.600	193				1998
-----						
33A	100.900 - 127.055	1102	19.07	-7.24%		1999
33A	127.055 - 148.395	985	18.13	-17.09%		1999
33A	148.395 - 162.615	629		-19.05%		1999
33A	162.615 - 177.135	1289	16.88			
	1999					

33B	0.000 - 62.070	1259	17.45	7.24%	1.14%	1999
33B	62.070 - 76.810	3395	10.65	7.47%		1999
33B	76.810 - 81.310	5459	8.16	5.55%		1999
33B	81.310 - 87.780	9783	7.70	-13.67%		1999
514	0.000 - 27.600	242	19.35	25.39%		1999
-----						
33A	100.900 - 127.055	933	17.12	-15.34%		2000
33A	127.055 - 148.395	1125	12.41	14.21%		2000
33A	148.395 - 162.615	1188	16.25			2000
33A	162.615 - 177.135	1171	15.12	-9.15%		2000
33B	0.000 - 62.070	1399	16.39	11.12%	3.58%	2000
33B	62.070 - 76.810	3541	8.25	4.30%		2000
33B	76.810 - 81.310	5666	6.65	3.79%		2000
33B	81.310 - 85.620	10388	7.60	6.18%	5.78%	2000
33B	85.620 - 86.950	8812	10.90			2000
33B	86.950 - 87.780	10107	9.50			2000
514	0.000 - 27.600	227	19.05	-6.20%	12.07%	2000
-----						
33A	100.900 - 127.055	1099	14.55	17.79%	7.58%	2001
33A	127.055 - 148.395	1247	14.00	10.84%	8.87%	2001
33A	148.395 - 162.615	1548	15.45	30.30%	16.57%	2001
33A	162.615 - 177.135	1457	15.55	3.65%	22.64%	2001
33B	0.000 - 52.885	1665	15.50	19.01%	8.74%	2001
33B	52.885 - 62.070	2039	15.75			2001
33B	62.070 - 76.810	3703	8.48	4.57%	4.44%	2001
33B	76.810 - 81.310	5643	6.45	-0.41%	3.38%	2001
33B	81.310 - 85.620	9717	8.55	-6.46%	3.39%	2001
33B	85.620 - 86.950	8510	10.40	-3.43%		2001
33B	86.950 - 87.780	9235		-8.63%		2001
514	0.000 - 27.600	268	17.29		4.40%	2001

33A	100.900 - 127.055	1176	15.51	7.01%	7.84% (6.04% is 10 yr rate)	2002
33A	127.055 - 148.395	1235	16.83	-0.96%	5.65% (5.94% is 10 yr rate)	2002
33A	148.395 - 162.615	2321	17.99	49.94%	26.21% (17.14% is 10 yr rate)	2002
33A	162.615 - 177.135	1429	19.41	-1.92%	9.11% (7.05% is 10 yr rate)	2002
33B	0.000 - 52.885	1960	19.85	17.72%	12.80% (7.30% is 10 yr rate)	2002
33B	52.885 - 62.070	2393	14.30	17.36%	(7.90% is 10 year growth rate)	2002
33B	62.070 - 76.810	3969	8.10	7.18%	5.33% (8.41% is 10 yr rate)	2002
33B	76.810 - 81.310	6504	6.50	15.26%	6.20%	2002
33B	81.310 - 85.620	10494	7.75	8.00%	2.99%	2002
33B	85.620 - 86.950	9099	8.35	6.92%		2002
33B	86.950 - 87.780	9362		1.38%		2002
514	0.000 - 27.600	242	19.76	-9.70%	5.43%	2002