

Socio-Economic Assessment



Appendix 3



Anvil Hill Project

Socio-Economic Assessment

Prepared for

**Centennial Coal Company Ltd
Umwelt (Australia) Pty Ltd**

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CONTENTS

Executive Summary	6
1 Introduction.....	15
1.1 Background	15
1.2 Project Description	16
2. Methodology	17
2.1 Overview	17
2.2 Social Impact Assessment	17
2.2.1 Social Assessment Methods	19
2.3 Economic Impact Assessment	20
3. Social Profile (Phase 1)	21
3.1 Overview	21
3.2 Geographical Location	21
3.2.1 Environmental setting.....	21
3.2.2 Local Government Boundaries	22
3.2.3 Landuse	23
3.3 Local History	23
3.3.1 Aboriginal History	23
3.3.2 European History.....	24
3.3.3 Mining History.....	24
3.4 Socio-Economic Characteristics.....	24
3.4.1 Muswellbrook LGA.....	24
3.4.2 Wybong.....	26
3.5 Governance	27
3.5.1 Council Engagement Initiatives	29
3.6 Infrastructure and Services	29
3.7 General Community Issues	30
3.7.1 Water	30
3.7.2 Environment	31
3.7.3 Public service provision.....	32
3.7.4 Attraction and retention.....	32
3.7.5 Cumulative impacts of industry	32
3.7.6 Air Quality.....	33
3.7.7 Noise	33
4 Community Attitudes towards the proposal (Phase 2).....	34
4.1 Stakeholder Analysis	34
4.2 Community Issues.....	35
4.2.1 Landholder Issues.....	36
4.2.2 Issues by Geographic Location.....	41
4.3 Wider Community Views	43
4.3.1 Community Groups	43
4.3.2 Shire (LGA) Community	44
5 Mining in the Community - Economic Contribution	48
(Phase 3).....	48
5.1 Construction Phase.....	48
5.2 Operational Impacts	50
5.3 Conclusion	53
6 Mining in the Community - Population Impact Projections (Phase 3).....	54
6.1 Construction Phase.....	54
6.2 Operational Phase	55
6.2.1 Workforce Projections	55
6.2.2 Family Level Impacts across the Region	56
6.2.3 Project Related Population Impacts in Muswellbrook Shire.....	57

6.2.4	Project Related Impacts on Services in Muswellbrook Shire	58
6.3	Cumulative Impact Assessment	61
7	Impact Management (Phase 4).....	63
7.1	Social Mitigation Measures.....	63
7.1.1	Property value and acquisition	63
7.1.2	Sense of Community and Place.....	64
7.1.3	Lifestyle Changes through Uncertainty and Relocation	64
7.1.4	Population Impacts on Community Service Provision	65
7.1.5	Community Engagement and Information Provision	66
7.2	Community Enhancement Measures	67
8	Monitoring	69
9	Conclusion	70
10	References	71
	Annexure 1 – Socio-economic characteristics	73
1.1	Population and Dwellings.....	73
1.2	Housing Tenure	75
1.3	Community Age Structures	76
1.4	Education.....	79
1.5	Birthplace by Region.....	80
1.6	Family Composition	81
1.7	Weekly Household Income	82
1.8	Industry of Employment (Muswellbrook LGA)	83
1.9	Industry of Employment (Muswellbrook UC).....	84
1.10	Industry of Employment (Denman UC)	85
1.11	Labour force Characteristics	87

List of Tables

Table 2.1: Social Impact Assessment Variables.....	19
Table 2.2: Social Assessment Methods Adopted for the Anvil Hill Project Proposal	20
Table 3.1: Area and percent of land use categories in Muswellbrook Shire	23
Table 4.1: Stakeholder Groups involved in the assessment process.....	35
Table 5.1: Regional Economic Impacts of the Construction Phase of the Project on the Regional Economy	49
Table 5.2: Distribution of Average Direct and Flow-on Employment by Industry Sector of the Construction Phase for the Regional Economy	50
Table 5.3: Annual Regional Economic Impacts of the Operation Phase of the Project on the Regional Economy	51
Table 5.4: Operational Impacts of the Project for the Regional Economy and NSW Economy (2004 Dollars).....	51
Table 5.5: Distribution of Average Direct and Flow-on Employment by Industry Sector for the Regional Economy	52
Table 6.1: Town of Residence estimations for Anvil Hill	56
Table 6.2: Predicted Family Size per Town	56
Table 6.3: Predicted Population Impacts for Scone, Singleton, Aberdeen, Muswellbrook and Denman	57
Table 6.4: Predicted Age Distribution of Operational Families in Muswellbrook.....	58
Table 6.5: Primary School Capacity	59
Table 6.6: Secondary School Capacity.....	59
Table 6.7: Tertiary Sector Capacity	59
Table 6.8: Health Sector Capacity	60
Table 6.9: Youth Service Capacity	60
Table 6.10: Proposed housing developments in the Muswellbrook Shire	61
Table 6.11: Cumulative Impacts of Project Construction Phases.....	61
Table 6.12: Cumulative Impacts of Project Operational Phases.....	62
Table 7.1: Community Enhancement Program	67
Annexure Table 1.1 Population and Dwellings, 1991 - 2001	74
Annexure Table 1.2 Housing Tenure, 1991 – 2001 (<i>Occupied Private Dwellings</i>)	75
Annexure Table 1.3 Community Age Structures, 1991 - 2001	77
Annexure Table 1.4 Highest Level of Schooling Completed (2001 Census: Persons over 15 years)	79
Annexure Table 1.5 Birthplace by Region (2001 Census)	80
Annexure Table 1.6 Family Composition (1991-2001 Census: Persons)	81
Annexure Table 1.7 Weekly Household Income 2001 (<i>Occupied Private Dwellings</i>)	82
Annexure Table 3.1.1 Muswellbrook LGA: Industry of Employment (1996-2001: Employed Persons).....	83
Annexure Table 1.9 Muswellbrook UC: Industry of Employment (1991- 2001: Employed Persons).....	84
Annexure Table 1.10 Denman UC: Industry of Employment (1991- 2001: Employed Persons).....	86
Annexure Table 1.11 Labour Force Characteristics 1991-2001 (Persons aged 15 years and over)	88

List of Figures

Figure 1.1: General Area of the proposed Anvil Hill Project	15
Figure 1.2: Project Area and Proposed Disturbance Area	16
Figure 2.1: The Social Impact Assessment Process	18
Figure 3.1: Hunter State Electorate.....	27
Figure 4.1: Resident/Landholder perceptions of impact from the proposed Anvil Hill Project (Quantitative Survey Results)	37
Figure 4.2: Perceived Level of Concern about the Project.....	43
Figure 4.3: Level of approval of the project by residential location.....	45
Figure 4.4: Benefits of the Proposal to the Community in the Region	46
Figure 4.5: Disadvantages of the Proposal to the Community in the Region	47

Annexures

Annexure 1: Muswellbrook Shire Demographic Statistics

Annexure 2: Community Information Sheet 1

Annexure 3: Community Information Sheet 2

Annexure 4: Community Information Sheet 3

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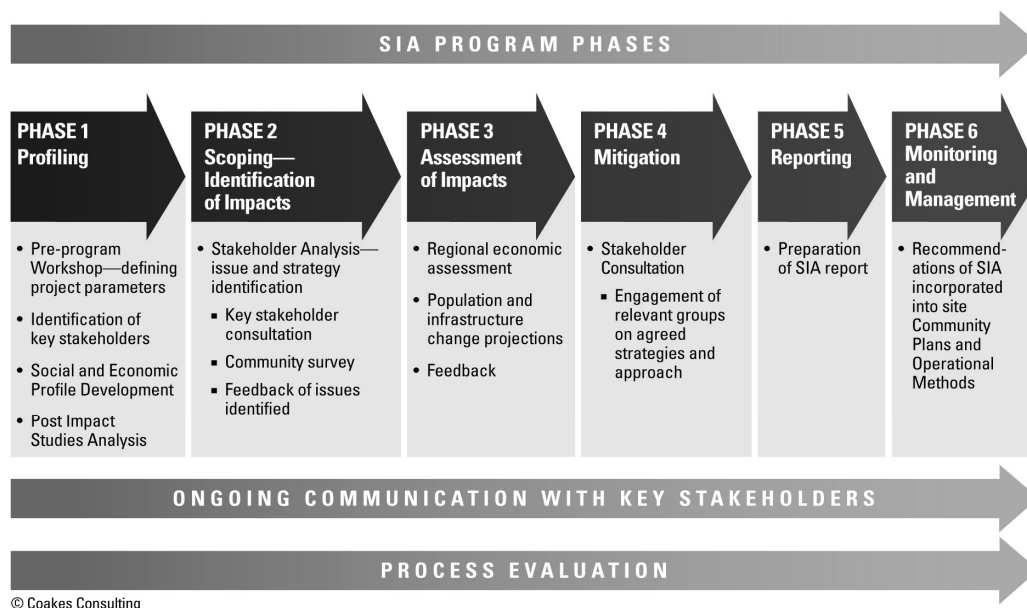
Executive Summary

Centennial Hunter Pty Limited (hereafter referred to as Centennial), a wholly-owned subsidiary of Centennial Coal Company Limited, proposes to establish an open cut coal mine and ancillary facilities including a Coal Preparation Plant (CPP) and rail loop in the Wybong area, 20 kilometres west of Muswellbrook and approximately 10 kilometres north of the township of Denman. The proposal, known as the Anvil Hill Project, is based on a large, undeveloped coal reserve of approximately 150 million tonnes (Mt) that is suitable for the production of coal for both domestic and export markets.

This report details the Socio-Economic Impact Assessment and community consultation process undertaken as part of the project.

Socio-economic assessment is concerned with assessing and predicting the likely consequences of a proposed action in both social and economic terms. While economic assessment emphasises the monetary effects of an action or proposal, social impact assessment is concerned with assessing benefits and costs in non-monetary terms. This involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense. Social and economic assessment processes work together to provide a complete picture of impacts and their meaning.

The socio-economic impact assessment has involved a number of phases, as illustrated in the following chart.



The program has employed a range of consultative and assessment mechanisms appropriate to the stakeholder group and assessment phase. These are depicted in the following table.

Method	Description
Documentary analysis	Collation, examination and review of relevant reports and studies relating to the assessment area.
Social indicators analysis	Examination of census data (1991, 1996, 2001) and other community data sets to develop detailed profiles of relevant townships (Muswellbrook and Denman) and rural settlements (Wybong).
Media review	Extensive monitoring and review of local, regional and State media to identify community issues associated with mining in the area.
Personal Interviews	Semi-structured interviews with Stakeholder groups across the community e.g. local landholders/residents, local government, community and environmental groups, to identify salient community issues, obtain baseline information and assess likely impacts of the proposal.
Community Presentations	Presentations to local community and environmental groups at various stages of the assessment process to provide information and obtain feedback on the project.
Surveys	Telephone survey of 400 randomly selected households in the Shire of Muswellbrook to understand the views of the wider community.
Service Provision Review and Community Needs Assessment	Interviews with local service providers to assess the likely impact of the project on service delivery within the region and identify areas of community need.
Open Days	Open information days to provide feedback on the outputs of the environmental assessment studies to the local (Wybong) and wider community (Muswellbrook Shire).
Community Information Sheets (CIS)	Production and distribution of Information sheets at significant stages of the social assessment process to provide information on the proposal and summarise outputs of the social and environmental assessment studies.
Community Consultative Committee (CCC)	Regular meetings with the established CCC for the project to provide information and receive feedback relating to the project, the approvals process and the assessment studies and outputs.
Workshops	Internal workshops to develop strategies to address the issues raised by the community and to ensure that negative impacts are mitigated/ameliorated and positive impacts enhanced.

The program has also involved a range of stakeholders. The stakeholders that have been involved in the socio-economic assessment of the Anvil Hill Project are summarised in the table below.

Group Title	Group Description	Consultation/Social Assessment Methods
GROUP 1 Local Residents/ Landholders/ Tenants	Residents and landholders residing in close proximity to the Project Site. This included local landholders, tenants and immediate neighbours.	Personal Interviews – Qualitative discussion of issues – Quantitative issues Survey Distribution of Community Information Sheets A total of 112 interviews and 77 surveys were conducted
GROUP 2 Government Agencies And Political Representatives	A range of relevant Local, State and Commonwealth government agencies and representatives with a role in the development approval have been contacted in relation to the project. These included: Commonwealth Government <ul style="list-style-type: none">• Department of Environment and Heritage (DEH) State Government <ul style="list-style-type: none">• NSW Department of Planning• NSW Department of Natural Resources• Department of Environment and Conservation (DEC)• NSW Heritage Office• NSW Department of Lands• Roads and Traffic Authority NSW Local Government <ul style="list-style-type: none">• Muswellbrook Shire Council	Personal Interviews Presentations/Project Briefings Telephone Interviews Community Information Sheets
GROUP 3 Special Interest Groups	Those groups with a particular interest in the proposal at regional and local levels i.e. environmental groups, professional and trade associations, community organisations, local media, other industry groups. <ul style="list-style-type: none">• Minewatch• Muswellbrook Lion's• Wybong Public Hall Committee• Muswellbrook Chamber of Commerce• Denman Chamber of Commerce• Denman District Development Association Masonic Lodge• Denman Visitors Centre• Country Women's Association• Denman Rotary• Muswellbrook Rotary• Wybong Water Users Association• PCYC• Muswellbrook Horse Racing Club	Personal and telephone Interviews Community Group Presentations Community Information Sheets
GROUP 4 Service Providers and Functional Groups	A range of service providers and individuals/groups with a functional linkage to the project and its activities in the following sectors: <ul style="list-style-type: none">• Education• Health• Accommodation• Community Services	48 Personal and telephone interviews Community Group Presentations Community Information Sheets Service Provision Review Social Indicators Analysis
GROUP 5 Wider Community	Residents residing within the broader Wybong and Muswellbrook Shire communities	Community Survey of 400 households Community Information Sheets Media Releases CCC Meetings Project Open Information Days

The assessment has predicted a number of social impact variables that may be associated with the proposed Anvil Hill Project. These include:

- **Population impacts** caused by the inflow of employees associated with the construction and operational phases of the project and cumulative issues associated with other developments in the area;
- **Community/institutional arrangements**, including the emergence of interest groups with specific views and attitudes towards the proposal;
- **Changes in the nature of the community**, resulting from relocation of households and perceived impacts of the proposal;
- **Individual, family and community level impacts** including the perceived environmental and social impacts associated with the proposal e.g. dust, noise, visual impacts, traffic, disruption to sense of community etc.
- **Community infrastructure needs** which includes flow-on effects of the proposal to infrastructure and social service provision.

In relation to **Population impacts**, the social assessment has predicted the potential impacts of the project on the Muswellbrook Shire community. Given a peak predicted construction workforce of 200 employees and a peak operational workforce of 240 employees, it is projected that 192 employees will potentially relocate into the area with approximately 109 workers located in the Muswellbrook Shire specifically. This yields a family size impact of approximately 381 family members.

A review of local services such as temporary accommodation, education, health and housing has indicated that there will be sufficient temporary accommodation to cope with the population impacts associated with the construction workforce. However, the potential impacts of the additional 109 relocating operational employees and their families, has the potential to place pressure on the health services within the area. In contrast, the education and housing sectors should have sufficient capacity to manage the influx of population associated with the project.

Although there is sufficient capacity within the LGA to manage the temporary and permanent population impacts of the proposed Anvil Hill Project, further analysis reveals a critical level of population impact from the cumulative impact of a further development in the area i.e. the Mt Pleasant mine development. The potential cumulative operational impact of both projects has been projected and could result in an influx of approximately 1130 new family members. Given the current and predicted service levels, this type of impact would place pressure on key community services within the LGA.

In relation to the impact of the project on **Community/institutional arrangements**, it is evident from the assessment that a high level of community concern exists in relation to the project, particularly among those landholders who reside in proximity to the project.

The project has also attracted significant media attention, with two new community groups forming in opposition to the project. The most significant of these is the Anvil Hill Alliance which was formed in March 2006 and consists of more than 20 member organisations. The Alliance has publicly opposed any new mine development and has condemned the coal industry broadly in facilitating climate change. At a local level, groups such as the Anvil Hill Project Watch Association has developed and focused on specific issues in relation to the project, for example, ecology.

To assess the attitudes towards the project among the broader Muswellbrook LGA community, a random telephone survey of 400 households was conducted. After being presented with information that described the proposed mine project, approximately 46% of respondents indicated that they either strongly approved or approved of the project. A further 24% expressed no opinion either way, while 29% either disapproved or strongly disapproved of the proposal.

When community attitudes were further assessed across townships (i.e. Muswellbrook and Denman), approximately 50% of respondents in both townships, approved of the project. However, the attitudes of residents in the Denman area (the closest town to the project) were more polarised than the attitudes of Muswellbrook residents i.e. Denman residents were more likely to either approve or disapprove of the project compared to Muswellbrook residents who were more ambivalent in their response.

At the broader community level, the **potential benefits** of the proposal included employment, support for the local economy, including small business, and the opportunity to develop further community infrastructure and services in the area. Even

among those who disapproved of the project, 49% believed that the proposal would provide employment benefits for the area.

In regard to the disadvantages associated with the proposal, the most significant disadvantages identified related to a perceived 'increase in dust from the mine', 'an increase in noise from the mine' and 'an increase in respiratory conditions'. These three issues were also found to be the primary reasons why the majority of respondents disapproved of the project.

Comparisons in relation to the perceived disadvantages of the proposal were also made amongst residents of the town of Muswellbrook, those in the Denman area and landholders in proximity to the mine site. While respondents across all three groups ranked the increase in dust from mining operations as an important issue, landholders in proximity to the proposed mine site were more likely to report 'changes in how the area looks' and 'a change in people's lifestyles' as important impacts.

A range of potential **Impacts at individual, family and community level** have also been identified as part of the assessment process. Consultation with local landholders, both within and outside of the project area, has indicated a high level of concern around the proposed development, with almost 50% of landholders surveyed, expressing extreme concern in regard to the project. Perceived individual and community level concerns of landholders in proximity to the project, related largely to changes in lifestyle, dust from the mine, visual aesthetics (impact on how the area looks), noise from the mine, potential reduction in property values, increase in traffic and blasting.

Impacts of perceived lifestyle changes included uncertainty associated with project approval and impacts, a decline in sense of community and individual and community concerns relating to possible relocation of households from the area. A key concern related to visual impacts, given the perceived beauty of the region and Anvil Hill itself. Mining development was considered inconsistent with existing land uses and other regional economic development activities e.g. agriculture, viticulture, by many landholders. Issues relating to the increase in noise from operations, particularly at night and blasting were also raised, particularly in light of cumulative issues associated with mining within the region.

For landholders located outside the project area, issues of water quality and increased traffic (noise and safety implications) were also identified. These issues were also identified by a number of community groups within the area.

The Wybong area has been used for agriculture since the 1800's and there are a number of key families with strong generational ties to the community. This coupled with the size of the community; its demographic composition; and its geographic nature (i.e. separation from the townships of Denman and Muswellbrook) have contributed to the development of a strong 'sense of community'. Consequently, a further social impact area highlighted in the assessment relates to the **Change in the nature of the Wybong community**, given that the project has the potential to result in the relocation of a number of households.

From an **economic perspective**, both the construction and operational phases of the project will deliver benefits to the local, regional and state economy. Construction of the project is anticipated to contribute between \$19M and \$21M in annual direct and indirect regional output or business turnover; between \$9M and \$10M in annual direct and indirect regional value added; between \$5M and \$6M in annual direct and indirect

household income; and indirect and direct employment of approximately 121 to 143 people.

In the operational phase, it is estimated that the operation will contribute to the regional economy, between \$212M and \$224M in annual direct and indirect regional output or business turnover; between \$115M and \$121M in annual direct and indirect regional value added; between \$25M and \$28M in annual household income; and indirect and direct employment of between 343 and 449 direct and indirect jobs.

The economic assessment has also indicated that economic flow on effects from both the construction and operational phases of the project are likely to positively affect and contribute to a range of sectors including: wholesale and retail trade, accommodation, cafes, restaurants, rail and road transport, agricultural and mining machinery manufacturing sector, fabricated metal products, electricity supply, other property services, community services, and scientific research.

The project's potential population impacts will result in changes to **Community Infrastructure**, particularly in relation to the provision of health services. This sector is considered currently to be at capacity and thus any additional population change may result in pressure on health services within the area. Sectors such as education and housing, however, appear able to absorb any population impacts associated with construction workforce (peak of 200 workers) and the operational workforce (peak of 240 workers) and subsequent family size impacts (approximately 381 new community members) associated with the project.

The proposed mine development, appears in line with the Shire's strategic plan, which identifies the need to facilitate economic development and to ensure the establishment of complimentary business ventures within the LGA. Furthermore, it has also been suggested that economic growth in the area is related to further expansion and development of coal mining.

Should the project be approved, in order to maximise the benefits of the project, it is recognised, at both a local government and general community level, that further education and training is required to increase the employability of local residents in line with development potential. It is noted that the region is currently experiencing a skills shortage, and attraction and retention of population is a key issue. Consequently opportunities exist for the company to work proactively with the local Shire and relevant stakeholders to facilitate new community opportunities and enhancement initiatives.

In a further acknowledgement that a project of this size brings both costs and benefits to a range of stakeholders, Centennial has committed to provide opportunities for the community to benefit from the mine project through the establishment of a community enhancement program (CEP). The CEP has been developed based on an assessment of community need in the local Wybong and broader Muswellbrook community, through consultation with approximately 60 service providers and community groups. The consultation identified priority areas of community need and opportunities for potential community contributions and partnerships across a broad range of community sectors.

COMMUNITY ENHANCEMENT PROGRAM

Issue of Concern	Detail	Mechanism/Contribution
Community Projects	For ongoing community projects, to be distributed with community input	1 cent/saleable tonne of coal produced
Local Environmental Management	External to the mine site Wybong Uplands Land Management Strategy	\$100,000 pa for 5 years
Education and Training	Sponsorship of TAFE courses, apprenticeships, traineeships	\$200,000 pa for 3 years
Local employment	To work with the local Council to facilitate local employment and residential opportunities within the Muswellbrook Shire	To be confirmed through consultation with key stakeholders
Community Infrastructure	Focus on Denman and Wybong e.g. sporting and recreation facilities	\$500,000

The Program will be based on the contribution of 1cent/tonne of saleable product, by the company, to support community projects. It is envisaged that if the Anvil Hill project is approved, the evaluation of community projects and distribution of funds will be undertaken with community input, based on principles of partnership, representativeness and mutual benefit.

The company has outlined that environmental management and education, training and local employment will be attributed priority to reflect identified stakeholder issues and expectations and will be addressed through two mechanisms - the Wybong Uplands Land Management Strategy (an annual contribution of \$100,000 for five years) directed to support programs such as salinity management, riparian zone repair, demonstration farming, education, etc; and the Education, Training and Employment Strategy (annual contribution estimated at \$200,000 for three years), aimed at addressing multiple methods of increasing local employment, such as sponsorship of TAFE courses, apprenticeships and traineeships. This strategy will also focus on increasing opportunities for education, training and employment amongst Indigenous members of the community.

In addition, an upfront contribution to the value of \$500,000 will be directed towards the Denman and Wybong communities in consultation with key stakeholders.

A key aspect of any social impact assessment is the identification of specific mechanisms and indicators that can be implemented to monitor any potential impacts associated with the development over time. Centennial is committed to an ongoing Community Involvement Plan and the development of an appropriate social and community monitoring program. Such a program needs to identify any deviations from the impacts predicted and would document any unanticipated impacts that may arise in relation to the project. A summary of potential social impact variables that could be measured and assessed is provided in the table below.

Proposed Social Impact Monitoring Variables

Perceived Impact	Monitoring Variables	Mechanism
Environmental Impacts	Number of complaints	<ul style="list-style-type: none"> Anvil Hill Community Call Line, a toll free number that residents can call 24 hours a day, 7 days a week. CCC forum Newsletters with feedback mechanisms
	Level of community concern relating to environmental impacts	
	Level of satisfaction with the company's environmental management practices	

Community engagement	Level of satisfaction with information provision and engagement mechanisms	▪ Information communicated to stakeholders and local residents through the company newsletter
Community contributions	Level of awareness of Community Enhancement Program (CEP) Recognition of CEP programs Level of satisfaction with CEP programs Assessment of community wellbeing/quality of life	
Economic impacts	Level of expenditure of Centennial's employees	▪ Employee/contractor survey to determine employee profiles and expenditure patterns

In conclusion, the Anvil Hill project, like many developments of its size, has the potential to impact on the social environment in both a positive and a negative manner.

In identifying the issues of the local community of Wybong, in which the proposal is based, and the wider Muswellbrook Shire community; an attempt has been made by the company to address the issues raised by the community, through the development of appropriate mitigation, amelioration and enhancement strategies.

A development of the scale and size of the Anvil Hill Project brings significant advantages to particular stakeholders and disadvantages to others. While the population impacts, associated with the project, on service provision within the LGA can be adequately managed for the project individually, the cumulative impact of additional developments in the area may be problematic and place pressure on service sectors within the LGA.

Of greater concern, from a social impact perspective is the impact of the development on the sense of community of Wybong due to the potential dislocation of households in this area. In an attempt to manage this uncertainty, the company has endeavoured to provide assurance to local landholders through the provision of landowner purchase agreements, during the assessment phase of the project. While this has been viewed by some stakeholders, who are opposed to the project, as co-option of landholders; for many the process has provided greater certainty and provided landholders with the option to relocate should they perceive that the impacts of the project on their lifestyle, are too great.

The Anvil Hill project has the potential to make significant positive economic contributions at a local, regional and state level, as illustrated through the economic assessment; and the ability to positively affect a range of community sectors.

As has been previously outlined, the Company has committed to work with local landholders to effectively manage any predicted negative impacts of the project; and has also committed to enhance the positive benefits of the project through the development of a Community Enhancement Program. Should the project be approved,

such strategies, alongside the development of a comprehensive social impact monitoring program, will provide information for ongoing mitigation and management of social impacts should such impacts arise.

1 Introduction

1.1 Background

Centennial Hunter Pty Limited (hereafter referred to as Centennial), a wholly-owned subsidiary of Centennial Company Limited, proposes to establish an open cut coal mine and ancillary facilities including a Coal Preparation Plant (CPP) and rail loop in the Wybong area, 20 kilometres west of Muswellbrook and approximately 10 kilometres north of the township of Denman. The proposal, known as the Anvil Hill Project, is based on a large, undeveloped coal reserve of approximately 150 million tonnes (Mt) that is suitable for the production of coal for both domestic and export markets. The general area proposed for the mine is shown in the map below.



Figure 1.1: General Area of the proposed Anvil Hill Project

The Anvil Hill Project is a 'major project' development which requires the approval of the NSW Minister for Planning. An Environmental Assessment (EA) will be prepared in support of an application to mine up to 10.5 million tonnes of coal per annum (Mtpa) using truck and shovel methods. Approval will be sought for a 21 year project life, concurrent with the duration of a mining lease to be sought for the operation. If approved, Centennial is targeting commercial production by early 2008, and it is expected that the project could provide ongoing employment for up to 240 people.

1.2 Project Description

The Anvil Hill Project comprises the design, construction and operation of:

- An open cut coal mine
- Coal handling facilities and a preparation plant (Washery)
- Water management, supply and distribution infrastructure
- Handling and placement of mine waste
- Mine access road, including a new intersection on Wybong Road, internal access roads and haul roads
- Infrastructure including offices, staff amenities, coal crushing facility, workshop, stockpile areas and conveyors
- A rail spur, rail loop and rail loading infrastructure for the transport of all product coal.

Detailed mine and project planning has been undertaken to develop a conceptual Mine Plan, with indicative stages modelled at years 2, 5, 10, 15 and 20. Scheduling has allowed for concurrent operation of four pits for most of the mine life. The proposed mining method has been adapted to this layout and is planned to provide for an efficient operation in which social and environmental impacts can be minimised.

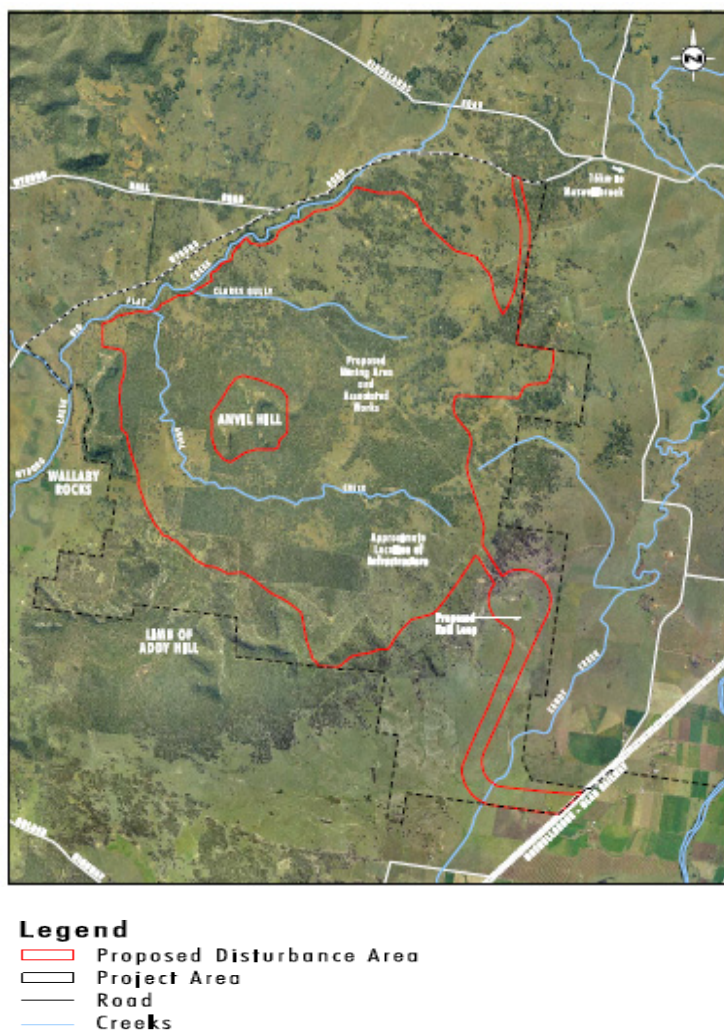


Figure 1.2: Project Area and Proposed Disturbance Area

Rehabilitation will be scheduled to commence as soon as possible after mining disturbance, to minimise the disturbed area at any point in time.

The proposed final land use will include self sustaining indigenous vegetation communities, consisting of native and naturalised tree, shrub and grass species.

2. Methodology

2.1 Overview

Socio-economic assessment is concerned with assessing and predicting the likely consequences of a proposed action in both social and economic terms. While economic assessment emphasises the monetary effects of an action or proposal, social impact assessment is concerned with assessing benefits and costs in non-monetary terms. This involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense. Social and economic assessment processes work together to provide a complete picture of impacts and their meaning.

2.2 Social Impact Assessment

Social impact assessment is a tool used to predict the future effects of a particular proposal on people, that is their way of life (how they live, work and interact with each other); their culture (norms and traditions); and their community (institutions and structures) (Armour 1990).

Vanclay (2003), building on Armour's categorisation, has identified the following as important drivers in the formation of attitudes towards development proposals:

- People's **way of life** – that is, how they live, work and play and interact with one another on a day to day basis
- Their **culture** – that is, their shared beliefs, customs, values and language or dialect
- Their **community** – its cohesion, stability, character, services and facilities
- Their **political systems** – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose
- Their **environment** – the quality of the air and water people use; the availability and quality of the food they eat; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources
- Their **health and wellbeing** – where 'health' is understood in a manner similar to the World Health Organisation (WHO) definition: 'a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity'
- Their **personal and property rights** – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties
- Their **fears and aspirations** – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children

The social impact assessment process has a number of phases, as illustrated in Figure 2.1. These include:

- Profiling to better understand the community and obtain baseline information;
- Scoping to identify stakeholder issues associated with the proposal;
- Assessment of potential issues/impacts, and prediction of the likely socio-economic effects associated with the proposal;
- Mitigation, that is working with the community to develop appropriate strategies to address the issues raised; and
- Monitoring and management of the issues through the life of the project.

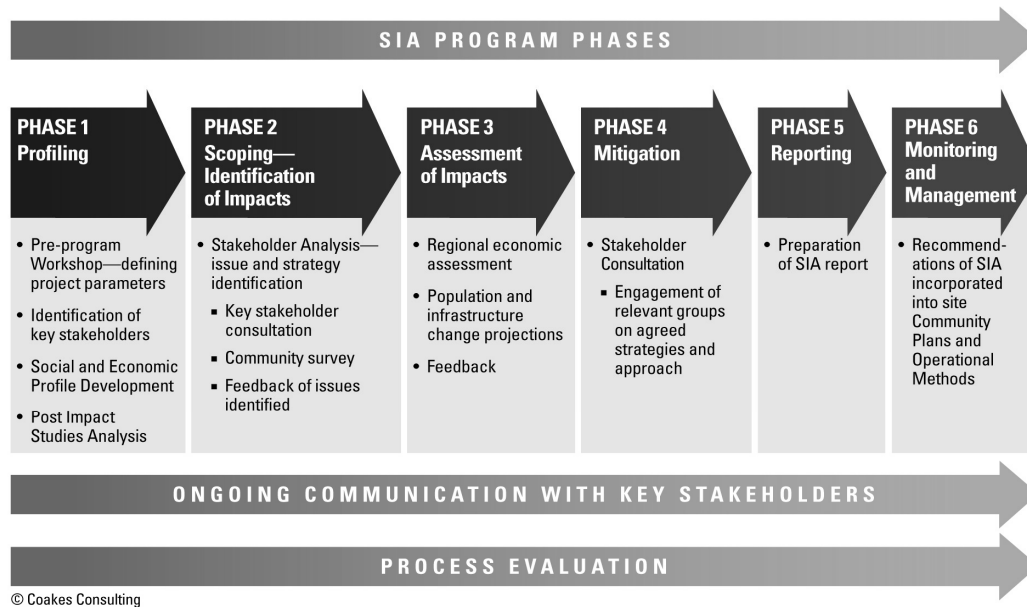


Figure 2.1: The Social Impact Assessment Process

Burdge (2004) has identified a range of social impact variables that point to measurable change in human populations, communities and social relationships resulting from development projects. These include population impacts, community/institutional arrangements, conflict between local residents and newcomers, individual and family level impacts and community infrastructure needs. The salience of particular social assessment variables may vary according to the particular development project. A list of the variables relevant to the current proposal is presented in Table 2.1.

Table 2.1: Social Impact Assessment Variables

Population Impacts
<ul style="list-style-type: none"> • Population Change • Influx or out- flux of temporary workers • Relocation of individuals and families
Community/Institutional Arrangements
<ul style="list-style-type: none"> • Formation of attitudes towards the project • Interest group activity
Individual and Family Input Levels
<ul style="list-style-type: none"> • Disruption in social networks • Perceptions of public health and safety • Perceptions of environmental issues
Community Infrastructure Needs
<ul style="list-style-type: none"> • Change in community infrastructure • Effects on known cultural, historical and archaeological resources

Source: Adapted from Burdge (2004)

As is the case with any type of change, some individuals or groups within the community may benefit, while others may experience negative impacts. If negative impacts are predicted, it is the role of social impact assessment to determine how such impacts may be ameliorated or mitigated to produce the minimum degree of social disruption to those affected.

Monitoring is also a key component of the social impact assessment process and a program should be developed to identify deviations from the proposed action and to document any unanticipated positive or negative impacts that may arise in the implementation/operational phase.

2.2.1 Social Assessment Methods

Community involvement is an integral part of any social assessment process, and there is a range of different ways of involving the community and collecting relevant information to inform the assessment process.

In the current assessment, stakeholders were identified through a community networking approach to ensure a representation of stakeholder views associated with the project. This technique involves a process called 'snowball sampling' where stakeholders are identified through a review of secondary data sources e.g. Community Service directories, title searches and community involvement. The full range of methods and mechanisms used to collect, communicate and disseminate information about the proposal are summarised in Table 2.2. To guide consultation activities, a Consultation Plan was developed to identify stakeholder issues to be considered and addressed.

The specific objectives of the Consultation Plan included:

- To initiate and maintain open communication with the community on all aspects of the project, particularly local landholders and key stakeholder groups;
- To identify community issues and concerns in relation to the project; and
- To work with stakeholders to develop appropriate solutions/strategies to, where possible, address the issues raised.

Table 2.2: Social Assessment Methods Adopted for the Anvil Hill Project Proposal

Method	Description
Documentary analysis	Collation, examination and review of relevant reports and studies relating to the assessment area.
Social indicators analysis	Examination of census data (1991, 1996, 2001) and other community data sets to develop detailed profiles of relevant townships (Muswellbrook and Denman) and rural settlements (Wybong).
Media review	Extensive monitoring and review of local, regional and State media to identify community issues associated with mining in the area.
Personal Interviews	Semi-structured interviews with Stakeholder groups across the community e.g. local landholders/residents, local government, community and environmental groups, to identify salient community issues, obtain baseline information and assess likely impacts of the proposal.
Community Presentations	Presentations to local community and environmental groups at various stages of the assessment process to provide information and obtain feedback on the project.
Surveys	Telephone survey of 400 randomly selected households in the Shire of Muswellbrook to understand the views of the wider community.
Service Provision Review and Community Needs Assessment	Interviews with local service providers to assess the likely impact of the project on service delivery within the region and identify areas of community need.
Open Days	Open information days to provide feedback on the outputs of the environmental assessment studies to the local (Wybong) and wider community (Muswellbrook Shire).
Community Information Sheets (CIS)	Production and distribution of Information sheets at significant stages of the social assessment process to provide information on the proposal and summarise outputs of the social and environmental assessment studies.
Community Consultative Committee (CCC)	Regular meetings with the established CCC for the project to provide information and receive feedback relating to the project, the approvals process and the assessment studies and outputs.
Workshops	Internal workshops to develop strategies to address the issues raised by the community and to ensure that negative impacts are mitigated/ameliorated and positive impacts enhanced.

Where possible, data/information has been collected using a range of methods and techniques. This approach referred to as 'triangulation' has been used to account for some of the problems inherent in the use of single methods, and assists in addressing issues associated with data reliability and validity.

Further details of the consultation activities undertaken are provided in Section 4 of this report.

2.3 Economic Impact Assessment

The economic assessment associated with the proposal is based on a detailed economic analysis undertaken by Gillespie Economics. This information has been integrated in this report and used to predict relevant economic (Section 5) and social impacts (Section 6) resulting from the proposal.

3. Social Profile (Phase 1)

3.1 Overview

This section of the report provides an overview of the social context in which the Anvil Hill proposal is based. The social profile is an important part of the social assessment as it provides an ability to consider the key attributes of an area and its communities; to identify key stakeholders who may have an interest in the project; and to identify relevant issues that can be further explored in the scoping phase of the social assessment program.

The profiling phase involves the necessary preparatory work to develop a detailed understanding of the project context. This work is necessary to provide a baseline from which potential impacts can be predicted and measured.

The profile is based on an analysis of relevant census data (time-series), media analysis and other secondary data sources. Historical and contemporary issues; political and social structures; development issues; organizations and leadership; and knowledge of, and attitudes towards development, are also documented.

Community issues raised in response to the Anvil Hill Project are likely to be driven by the relationship (instrumental, functional and affective) that the community has with the area. To gauge this relationship it is important to have an understanding of the community's current function as well as its history. This section of the report contains the following subsections:

- Geographical Location
- Local History
- Socio Economic Characteristics
- Governance
- Infrastructure and Services
- Community Issues
- Project implications

The report focuses on the Local Government Area (LGA) of Muswellbrook in which the townships of Muswellbrook and Denman and the settlement of Wybong are located. The profile utilises data collected at the time of the last census (2001). The 2001 census information is compared with 1996 and 1991 census data where appropriate. Trends, projections and regional information is based primarily from the Hunter Valley Research Foundation reports and statistical database.

A locational map detailing the township of Muswellbrook and surrounding areas is depicted in Figure 3.1.

3.2 Geographical Location

3.2.1 Environmental setting

The Anvil Hill Project is located in the Upper Hunter Valley, on the margin of the valley floor at Wybong west of Muswellbrook. The project area comprises 3763ha and has been extensively used for agriculture since the 1800s. It is dominated by rolling grazing

land with remnant and regrowth woodland. The locality immediately surrounding the project area consists of mostly smaller rural holdings, dominated by rural residential land use, but also includes more intensive agricultural land uses such as vineyards, irrigation for lucerne and dairies.

The topography of the Proposed Project Area varies from lower slopes towards the Hunter River, through undulating and hilly lands to rocky outcrops. A notable topographical feature within this area is Anvil Hill itself which rises approximately 70 metres above the surrounding area at its highest point. It is located at the centre of the proposed mining area and consists of two hills connected by a saddle. It should be noted that Anvil Hill is not proposed to be mined. The lower areas of the Proposed Project Area are currently used for pastoral grazing and a 500 kV TransGrid powerline crosses the site in a southeast/northwest direction.

The topography of the area surrounding the Project Area is dominated by a row of hills to the west and south. The hills to the west are not named, although they are known locally as "Wallaby Rocks". Wallaby Rocks rise to a height of 264 metres, being approximately 100 metres above the surrounding area and contain a visually dominant escarpment along the western side. The rocky area to the south known as the 'Limb of Addy Hill' rises to a height of 302 metres, which is also approximately 100 metres above the surrounding area.

The Anvil Hill Project is located within the catchments of Anvil Creek, Clarks Gully, Big Flat Creek and Sandy Creek. Both Anvil Creek and Clarks Gully flow into Big Flat Creek. Big Flat Creek flows into Wybong Creek which is a tributary of the Goulburn River. The Goulburn River joins the Hunter River approximately 4.8 kilometres downstream from Denman and Sandy Creek drains to the Hunter River at Denman.

3.2.2 Local Government Boundaries

The project area falls within the Local Government Area (LGA) of Muswellbrook which is centrally located in the Upper Hunter Valley and covers an area of 3401 km². Muswellbrook LGA is bisected by the Hunter River and is part of the Hunter River catchment, which covers an area of 22,400 km².

Lake Liddell delineates the Muswellbrook LGA boundaries to the east, Wollemi National Park to the west, Aberdeen to the North and Coricudgy State Forest to the South. To the west of Muswellbrook, the countryside is undulating with Wybong and Sandy Creeks being the major drainage lines. Similarly undulating hills dominate the landscape between Muswellbrook and Singleton, broken only by Lake Liddell. The rugged mountains of the Wollemi National Park are located in the south-west portion of the LGA.

The main residential and commercial centre of the LGA is the Muswellbrook township. Denman and Sandy Hollow are the two other significant areas of settlement among a number of small outlying rural communities that include:

- Wybong
- Baerami
- Martindale
- McCullys Gap
- Widden
- Muscle Creek

3.2.3 Landuse

The project is located within an area that contains a diverse range of land uses. These include residential areas (large suburban areas, towns and villages), electricity and water supply catchment areas, agricultural land, state recreational areas and industry. The area also includes major infrastructure including gas pipelines, power lines, highways, railway lines, roads and bridges which service NSW and other states.

Land use in the Muswellbrook area is predominantly rural, with intensive agricultural production on the alluvial floodplains. Muswellbrook has many rural industries including viticulture, dairying, olive growing, horse breeding and award winning wine making industries. Extensive coal deposits under or near the alluvial floodplains means that major coal mining activities are undertaken. Around 20% of the Hunter Valley floor (around 40 open cut mines) or 520 km² is developed for mining, largely open cut.

The proximity of good quality coal has ensured that the power generation industry is strong in the Hunter Valley, with Lidell and Bayswater coal-fired power stations generating the majority of electricity for New South Wales.

In addition to coal, the Hunter Valley also contains a range of other land uses, as shown in Table 3.1, including the significant conservation zones of the Wollemi and Goulburn River National Parks and several other nature reserves.

Table 3.1: Area and percent of land use categories in Muswellbrook Shire

Use	Area (Hectares)	% of Total Shire
National Parks	145, 550	43
Nature Reserves	3, 500	1
Power stations	13, 000	3.7
Coal Mine Leases	16, 517	4.8
Prime Agricultural Land	20, 690	6.1
Vacant and Grazing	140, 333	41.1
Urban areas (approx)	950	0.3
Total Shire	340, 540	100

Source: Muswellbrook Shire Council, 2003

3.3 Local History

3.3.1 Aboriginal History

The Shire of Muswellbrook has a significant Aboriginal history. As a result, a separate study has been commissioned entitled "Aboriginal Archaeological Assessment – Anvil Hill Project" (Umwelt 2006). Muswellbrook has a number of indigenous initiatives. For example, the Council has an established Aboriginal Reconciliation Committee and the Federal Department of Industry, Tourism and Resources (DITR) facilitated the creation of a 'Working in Partnerships' Forum comprised of representatives of the indigenous community and mining companies to identify partnership opportunities. Centennial is involved in this forum.

3.3.2 European History

In regard to European settlement, Muswellbrook was discovered by Chief Constable John Howe in 1819. It was officially gazetted as a township in 1833, and known at that time as 'Musclebrook'. The spelling of the town name has varied over the years and was officially changed to Muswellbrook in 1939.

The area's European history is further documented in a separate report, entitled: "An Historical Heritage Assessment of the Anvil Hill Project Area" (Umwelt, 2006).

3.3.3 Mining History

The mining of coal was first recorded in this area in the late nineteenth century at Kayuga, although large-scale coal mining didn't get under way until more recently. There are five mines, four open cut and one underground that operate in Muswellbrook Shire within a few kilometers of the township. These are Mt Arthur Coal, Bengalla, Muswellbrook Coal, Drayton and Dartbrook mines, though recent media announcements have indicated that the Dartbrook mine is to cease mining.

The Mount Pleasant project obtained planning approval in 1999 and no mining lease has yet been issued. Furthermore there are four proposed mines in the area, namely Anvil Hill, Mt Arthur Coal Underground, Castlerock, and Saddlers Creek.

Community attitudes and expectations of the mining industry have changed over recent years. Operational activity is more closely monitored by the Muswellbrook community due to increased environmental awareness and focus on sustainability. As such there is a greater community requirement for information and the town now has seven industry related enquiry/complaints lines.

3.4 Socio-Economic Characteristics

This section of the report provides a brief discussion of the socio-economic characteristics of the Muswellbrook LGA, the urban centres of Muswellbrook and Denman and the small rural settlement of Wybong. Where available, data has been assessed across three ABS census periods (1991, 1996, 2001). More detailed information and tables on the socio-demographics of the Muswellbrook LGA can be found in Annexure 1 titled 'Socio-economic characteristics'.

3.4.1 Muswellbrook LGA

In 2001, the Muswellbrook LGA had an estimated resident population of 14,796 (0.23% of the State's population) with 3.4% of this population identifying themselves as Indigenous. In addition, 1.4% of the resident population was born in non-English speaking countries. The median age for the Muswellbrook LGA (33 years) was also similar to that for NSW (35 years).

The population in the Muswellbrook LGA has been relatively stable with only a fall of 2.1% since 1991. In 2001, the LGA had a total of 5,397 occupied dwellings and 32% of the population lived in areas outside of the Muswellbrook urban centre. Muswellbrook has a relatively mobile population as, in 2001, 54% of the population indicated they were located at a different address five years ago. This compares to 42% for the State. In

contrast the population of Denman is more likely to consist of longer term residents with only 34% at a different address more than five years ago.

In the Muswellbrook LGA and the urban centres of Muswellbrook and Denman the percentage of elderly in the population, as evident in the elderly dependency ratio is significantly lower than that of NSW. In contrast, in the Muswellbrook LGA and the urban centres of Muswellbrook and Denman the percentage of children in the population, as evident in the child dependency ratio, is significantly higher than that of NSW. The higher percentage of children in the population is generally found in the age groups of 12 years of age and below - predominantly children of pre-school and primary school age.

Although in 2001 in the Muswellbrook LGA there were more children and fewer elderly people than that found in NSW, the trend in the LGA since 1991 has been for the number of children in the population to decline and the number of elderly people in the population to increase. In addition, in the Muswellbrook LGA there has been a significant decrease since 1991 in the number of people in families with children (-19.6%), and an increase in the number of people in families without children (+25.1%) and one parent families (+14.7%). A similar trend is evident in the urban centres of Denman and Muswellbrook.

As far as education is concerned, when compared to the NSW State average, the three populations (Muswellbrook LGA, Muswellbrook and Denman urban centres) show a significantly higher percentage of the population only completing up to year 10 or equivalent and significantly fewer people completing year 12 or equivalent.

The percentage of households with low, middle and high weekly incomes is reasonably similar between urban centres and the Muswellbrook LGA. However, an analysis of median weekly income show that, while incomes levels in Denman are similar to the NSW State median, Muswellbrook urban centre and the Muswellbrook LGA median incomes are significantly below that of the State.

The percentage of persons employed full-time in each of the three population areas has remained relatively constant since 1991, while the percentage of part-time employment has increased. With the exception of the Denman urban centre, in 2001 the Muswellbrook LGA and urban centre both had unemployment rates above that found in the State of NSW.

When compared to NSW, Muswellbrook LGA has significantly higher percentages of employed people in agriculture, forestry and fishing (10.7%); mining (12.7%) and electricity, gas and water supply (5.3%). While there are a relatively high percentage of people employed in mining compared to NSW, direct employment in this sector in the LGA has declined 22.3% since 1991.

The percentage of employment in many of the service sectors in 2001 (communications; finance and insurance; property and business services; education; health and community services; and cultural and recreational services), is below that found in NSW generally.

As far as the urban centres of Muswellbrook and Denman are concerned, the Muswellbrook urban centre has significantly higher percentages of employed people in mining (14.2%), construction (8.0%) and retail trade (16.7%). Consistent with the Muswellbrook LGA, employment in the service sectors was generally lower than that found in the State. On the other hand, the Denman urban centre has significantly high percentages of employed people in agriculture, forestry and fishing (11.55); mining

(12.0%), manufacturing (18.1%) and electricity, gas and water supply (5.7%) when compared to NSW. Like the Muswellbrook LGA, employment in the service sectors was generally lower than that found across the State.

The 2003-2004 State of the Environment report produced by the Muswellbrook Shire Council indicates that the area has been experiencing strong economic growth from commercial and industrial sectors as well as residential developments. The Council indicates that economic growth is related to further expansion and development of coal mining. Specifically the Mt Arthur Coal open cut mine, as well as extensions to the Muswellbrook No. 1 Open Cut, Drayton Coal mine and Liddell Coal Mine. This economic growth verifies the pivotal role of coal mining to the local Muswellbrook economy.

Residential developments have also contributed to growth in the Muswellbrook LGA. The Muswellbrook 2003-2004 State of the Environment report reported a number of significant residential subdivisions in Muswellbrook and Denman including Calool Heights, Calgaroo, Eastbrook Links Estate, the proposed North Muswellbrook development, Catholic Church subdivision, Denman North subdivision and the Woodlands Ridge Rural residential development.

3.4.2 Wybong

Wybong is one of the small rural settlements that falls within the Muswellbrook LGA and is the area in which the proposed Anvil Hill project is based. All Wybong data is drawn from the 2001 census (Source: ABS CCD number 1 1,130,502 Wybong NSW).

In the 2001 census Wybong had an estimated resident population of 537, comprising 158 families. The area did not have any Indigenous residents, 9 (1.7%) of the resident population were born in non-English speaking countries and 16 (3.0%) spoke a language other than English at home.

The age and family structure of Wybong provides an insight into the community role and function. In the 2001 census, 44 (8.2%) of the Wybong population was aged less than five years, which is higher than the Muswellbrook area (8.0%) and the State (6.7%). Wybong had a high proportion of couples with children 52.5%, and a lower than state average of one parent families (9.5 %).

Census data indicates that in 2001, 71 (38.4%) of private dwellings in Wybong were owned whilst 45 (24.3%) were being purchased and 45 (24.3%) rented.

The total labour force for the Wybong area in 2001 was 265 people. Of these 176 (66.4%) residents were employed fulltime, 69 (26%) part-time and 17 (6.4%) were unemployed.

In 2001, the largest employment sector for Wybong residents was agriculture, forestry, fishing and mining which comprised 82 (32%) of the workforce. This represents a higher figure than the Muswellbrook LGA generally (23.4%). Other major employment sectors for the Wybong area in 2001 include: Wholesale and retail trade (19.9%), Manufacturing (9.8%), Education health and community service (9.4%) and Construction (8.6%).

The 2001 census indicates that 61 (23.6%) of Wybong residents were managers and administrators, 46 (17.8%) tradespeople and 41 (15.9%) clerical, sales and service people. This breakdown by occupation indicates a relatively high proportion of Wybong residents with positions of professional or para-professional occupation. This is further supported by

the weekly incomes in the Wybong area in which the median income was \$1000 to \$1,199 per week.

3.5 Governance

The project area falls within the Federal Electorate of Hunter which starts in the Hunter Valley around Cessnock, Maitland and Kurri Kurri, and then extends west and north up the New England Highway to include Singleton and Muswellbrook. The electorate has existed since Federation and its first member was Australia's first Prime Minister, Edmund Barton. It has been held by the Australian Labor Party since 1910. Sitting MP Joel Fitzgibbon succeeded his father Eric in 1996.

At a State level, the project area lies within the State Electorate of Hunter which covers an area of 34,870 sq kilometres, with George Souris as the sitting State Member for the Hunter. Figure 3.1 outlines the State electorate boundaries.



Figure 3.1: Hunter State Electorate.

Source: http://www.seo.nsw.gov.au/electoral_districts_menu/district_index/upper_hunter.html

Muswellbrook Shire Council is a member of the Hunter Regional Organisation of Councils (HROC), which is a representative organization comprised of Mayors and Councillors from member councils. The HROC provides a platform for advocacy and service provision on behalf of local government in the Hunter. However, community opposition to the notion of a 'super council' has been documented in local media.

The Muswellbrook Shire Council, as it is today, was formed in 1979 following an amalgamation of the Shire of Denman and the Municipality of Muswellbrook. At present the Muswellbrook Shire's Mayor is Cr John Colvin (Mayor) with Cr Trevor Elks in the position of Deputy Mayor.

The Muswellbrook Shire Council is responsible for local service provision to the area, including: floodplain management, road construction and maintenance, car parking, traffic management and cycleway facilities; water and sewerage services; environment and heritage approvals and planning programs; environmental assessment programs; health and regulation programs; and waste management services.

A central focus of the Muswellbrook Strategic Plan (2005-2008) is directed towards supporting and sustaining a diversified and expanding economy. This may be achieved by increasing the skills level and employability of residents to reflect the changing demands of the local economy. It is hoped that relationships between business and industry communities will be strengthened through partnerships facilitated by the 'Making Muswellbrook' Shire Committee. The Shire is also promoted and is developing as a short stay tourist destination which supports local tourist businesses and regional events.

Six key strategy areas have been outlined in the strategic plan. These include:

- 1) Industry and business development plans involving expansion and diversification of industry and complementary businesses. The Council aims to promote the area, build networks and gain greater assistance from business organisations and government. This involves liaison with Business Support and Network groups such as Chambers of Commerce and the Denman and Districts Development Association.
- 2) Community perception strategies that involve Council support of local events and beautification of the Shire through stakeholder and industry support group consultation and partnership.
- 3) Population, infrastructure and provision of services strategies focused on sustaining and increasing the region's population. This is dependent on enhancing community infrastructure, health facilities and educational provision, as well as attracting medical practitioners. The Council aims to better market benefits of living and working in the Shire in order to encourage relocation to the Shire
- 4) Employment and education strategies that have an immediate, short-term, long-term and ongoing focus. The Council's immediate plans involve assessing employment needs and labour shortages. Short-term plans focus on Council consultation and relationship with training organisations in order to develop industry specific skills within the Shire and attract new residents. Long-term plans on the other hand are intended to develop prevocational, and apprenticeship programs with training organisations. They also involve generating industry support for such programs and promoting industry job opportunities. Ongoing Council plans are focused on supporting Upper Hunter cooperative learning and sustainable business and industry development.
- 5) Project management strategies which centre on developing and distributing promotional materials for utilisation at country week, with the primary intention of attracting new residents to the Muswellbrook Shire to address skill shortages. These plans also include enhancing Council assistance with applications for project funding and grants.
- 6) Tourism and promotion strategies that involve support for existing and new regional events, tourism associations and tourist facilities. This includes signage and informational bay improvements. Council support has been expressed for the coal rail heritage centre, renewal of the railway station and Muswellbrook visitors centre.

3.5.1 Council Engagement Initiatives

Muswellbrook Shire Council contributes to a number of committees, groups and forums. The Council has initiated several industry forums to facilitate discussion between industry and local government, these forums include: Mine Managers Forum, the Viticulture Forum, and the Equine Forum. Council currently contributes to four main environmental committees: Environment Committee, Extractive Industries Committee, Upper Hunter Water Quality Group, and Hunter Nutrient Reduction Campaign Committee. The committees comprise community members, technical advisers (from Department of Land and Water Conservation, Hunter Valley Catchment Management Trust and Environment Protection Agency), industry representatives and Council.

3.6 Infrastructure and Services

The ability of the population to source services, facilities and employment is a major social indicator. The Muswellbrook Shire has numerous sources of employment and major infrastructures. However, debate in the media has indicated that there is a severe shortage of skilled workers to fill employment opportunities in the area; and that several social infrastructures are understaffed.

A media review of the Muswellbrook area and the Hunter region indicates that public service provision is a critical community issue. The ability of the health and public transport system to service Muswellbrook residents has been questioned. In addition the Muswellbrook CBD has struggled to remain vibrant and retain businesses. These issues will be detailed more thoroughly in the general community issues section (3.7).

Muswellbrook Hospital is the largest of 6 public hospitals located in the Upper Hunter region and is part of the Hunter Area Health Service. The hospital and nursing home are supported by a range of community health services and health professionals working within the Muswellbrook Shire. In addition, Muswellbrook has a range of aged care services and facilities, including an aged day care and activity service, health and community care nurses and Home Care Service of NSW.

Access to social services and infrastructure can be influenced by modes of transport. Consistent with most rural areas across Australia, the Muswellbrook LGA featured people driving cars as the dominant mode of transport to get to work, with only about 5% of people using public transport (ABS, 2001).

In terms of utility infrastructure in the Upper Hunter, there are a number of utility companies associated with electricity, gas and water provision. The Muswellbrook Council owns, operates and manages three separate water supply schemes, supplying drinking water to the towns of Muswellbrook, Denman and Sandy Hollow. Muswellbrook Shire has two reticulated sewerage schemes located in Muswellbrook and Denman and the Shire has a waste landfill at Muswellbrook and a transfer station at Denman.

There are also a number of public and independent primary schools, one high school and one TAFE in Muswellbrook. In addition, educational institutions include a Maths Study Centre, literacy and numeracy service, the Upper Hunter Conservatorium of Music, the Upper Hunter Community Training Incorporated, and Muswellbrook Preschool.

A number of leisure and recreational opportunities also exist including the Lake Liddell recreation area; Wollemi National Park; horse, harness and greyhound racing facility; the Muswellbrook Golf Club; the Historical Town Walk; and the Muswellbrook Swimming

Complex. The Upper Hunter Regional Library services three LGAs, Muswellbrook, Merriwa and Scone. The library has six branches located in Muswellbrook, Denman, Scone, Aberdeen, Merriwa and Cassilis.

Residents within the Shire of Muswellbrook have access to a wide range of community services, provided by local, state and federal governments as well as volunteer organisations. Community services available in the Muswellbrook LGA include, but are not limited to; support services; financial counselling services; community health services; family support programs, centres and programs; the Local Aboriginal Land Council; and many more support programs such as Lifeline and the Hunter Park Family Centre.

In relation to local business, strong retail interest has been shown in the \$30 million shopping complex that is currently under construction in the Muswellbrook urban centre/township.

3.7 General Community Issues

A review of local, regional, state and national media coverage and other secondary data sources e.g. reports/studies, of the Muswellbrook locality, the proposed project and Centennial was conducted to provide a general overview of public opinion in the area and to identify salient community issues. In relation to media, coverage of the proposed Anvil Hill Project was not limited to locality specific issues. Coverage was broadly related to the global context of climate change. There was extensive media coverage of coal mining in the Hunter valley and potential contributions to greenhouse emissions.

The Anvil Hill Project has been adopted by the Anvil Hill Alliance as a perceived example of unsustainable industrial development. There is considerable concern regarding potential detriment to numerous areas of community function and environment. Media coverage of the Project has been driven primarily by environmental and community group pressure. Due to the sensitive and contentious nature of the issues, media coverage of coal mining generally has been extensive.

The emphasis of issues identified in local media varied somewhat depending upon the level of media coverage i.e. local, regional, state or national coverage. Salient community issues identified in the local media generally include: water quantity and quality, diversification of the local economy and government community service provision such as health and public transport. Mining related coverage specifically, in the Muswellbrook local media, centered on economic benefits and employment opportunities. However, in contrast, regional, state and national media coverage focused strongly on the Anvil Hill Alliance's public opposition to the proposed Anvil Hill project, as well as climate change and sustainability in general.

3.7.1 Water

The communities in the Hunter Valley regard water quality and quantity as a critical issue. Poor water quality has the potential to severely restrict human activities in the Hunter Catchment, both in terms of human health and economic costs due to loss of production and increased costs of water treatment. There is considerable community pride of waterways. A recent council approved subdivision near Wybong Creek has sparked fear regarding damage. Community concern about waterways is also reflected by the Cleaner Waterways Program initiated by the Hunter Catchment Management Trust. The Muswellbrook Shire Council conducts education seminars for local schools to increase awareness of the need to protect waterways and to minimize pollutants.

According to reports in the Muswellbrook Chronicle, the Hunter region has experienced the worst drought in 30 years and significant waterways have been affected. For example in 2006 the Goulburn River has recorded no flow in certain areas. The Department of Natural Resources Hunter implemented new water sharing plans to regulate water usage from Hunter Valley Rivers in December 2005. Water shortages have necessitated the implementation in mid 2005 of 'user pays' water charges by the Muswellbrook Council. These changes were guided by best practice requirements of the Department of Utilities Energy and Sustainability. Residents using more than 350 kilolitres a year are subject to higher rates, however non-residential users pay a fixed cost.

3.7.2 Environment

The media review indicates considerable community and environmental group concern regarding the potential impacts of mining on the biodiversity of the Anvil Hill area. The Anvil Hill Alliance has become involved in the protection of the Wybong area as a biodiversity corridor.

Generally, there are two groups that have formed in opposition to the proposed development – the Anvil Hill Alliance and the Anvil Hill Project Watch Association (which is also a member of the Alliance).

The Anvil Hill Alliance is an issue group that comprises more than 20 organization members and numerous individual members. Organization members include:

- Anvil Hill Project Watch Association
- ATA - Alternative Technology Association
- Australian Student Environment Network
- Central West Environment Council
- Climate Action Network Australia
- Climate Change Balmain/Rozelle
- Friends of the Earth Australia
- Friends of Tumblebee
- Greenpeace Australia Pacific
- Hunter Community Environment Centre
- Hunter Environment Lobby
- Lake Macquarie Coastal and Wetlands Alliance
- Mineral Policy Institute
- Mudgee District Environment Group
- Nepean Action Group
- North Coast Environment Council
- North East Forest Alliance - Hunter
- NSW Nature Conservation Council
- Rising Tide Newcastle
- SOFAR Society of Frogs and Reptiles - Hunter
- The Wilderness Society Newcastle
- Total Environment Centre
- Yarraman Vineyards

The Alliance has publicly opposed the proposed mine at Anvil Hill and industries that fuel climate change. The Anvil Hill Project Watch Association, is a recently established group, and describes itself as a rural Landcare group that researches and monitors mining activity in the Anvil Hill region. Issues of interest for the group include: water quality, biodiversity, revegetation and soil quality.

At a local level a number of other environmental groups also exist i.e. Landcare, Minewatch. Minewatch, in particular, has been a key group in the Hunter region for many years, having been formed by local landholders to monitor coal mining related damage to the local environment.

3.7.3 Public service provision

Public service provision is a central community concern, as illustrated by the frequency of articles and comment in the local media. It is suggested that both health and public transport in the Muswellbrook Shire have been identified as requiring improvement. The Hunter region is perceived to have a shortage of doctors and is cited as having the fifth worst doctor-patient ratio in the State. Muswellbrook has a ratio of 1:754 people per full-time equivalent General Practitioner, when it is suggested that the recommended ratio is 1:200 (Muswellbrook Chronicle, 20 March 2006). In addition, the Muswellbrook hospital has approached the Industrial Relations Council regarding understaffing issues.

3.7.4 Attraction and retention

The media review indicated that Muswellbrook Shire has experienced difficulty in attracting and retaining skilled workers and retail businesses. The Muswellbrook Council has invested considerable energy in promoting the Shire in order to attract new residents from metropolitan areas. This has been driven primarily by trades/skills shortages in the area. Local businesses have been asked to identify employment opportunities in order for the Council to promote the Shire's requirements at events such as 'Country Week'.

3.7.5 Cumulative impacts of industry

Recognition of the contribution of the industry to the local region through direct (employment of local residents) and indirect effects (flow on effects to other industry sectors that service the industry) is highlighted in local newspaper articles and press releases. However, considerable community concern has been expressed regarding the cumulative environmental impacts of industry and development on air, noise and water quality in Muswellbrook, and surrounding areas of Merriwa, Murrurundi, Scone, and Singleton. In response to these concerns the then Department of Urban Affairs and Planning (now Department of Planning) undertook a Cumulative Impact Study for the Upper Hunter Region that was completed in June, 1997.

The media review shows that the extensive development in the Muswellbrook area has resulted in numerous and detailed environmental assessments. Subsequently potential social impacts and community issues related to development in Muswellbrook have been well-documented. Many of the community issues raised in these processes parallel those identified in the media review. For instance the Mount Arthur North Coal Project Environmental Impact Statement produced in 2000 provides a detailed analysis of environmental and community impacts and issues in the Muswellbrook area. Community issues emerging from this process include concerns about negative impacts from mining operations such as: dust, noise, vibrations and water quality. Key issues also included economic benefits of mining in the area such as: sourcing employment from the local region; supporting local education and training; and promoting diversified business development and other economic opportunities in the region.

A study conducted by the Centre for Social Responsibility in Mining (CSRM), University of Queensland (Brereton and Forbes 2004) investigated the impact of mining in the Muswellbrook area. Local stakeholders were interviewed and identified the main positive and negative aspects of the local mining industry. Positives included direct and indirect improvements to the local economy, employment opportunities, local skills base, as well as provision of infrastructure and services. Negatives associated with local mining operations included: environmental impacts, mine dependency, social and economic polarization, skills shortage related to the community's inability to compete with wages set by mines and limited industry employment and training opportunities for local youth. The main community issues identified by Muswellbrook stakeholders were managing the impacts of mining; unemployment; a bypass for the town; and long term sustainability of the community.

A further study by the CSRM is considering the cumulative impacts (social, environmental and economic) of the five coal mines surrounding Muswellbrook. The study, which commenced in September 2005, is due to be released in the coming months.

3.7.6 Air Quality

The media review indicated that poor quality air, particularly at night, is a significant concern in some areas of the Shire. Domestic wood fires, gas flaring, motor vehicles, backyard burning, bushfires and dust are all contributors. Industry sectors such as coal mining, power generation and agricultural activities are also possible sources of air pollutants within the region.

Media reports indicated that the Aerosol Sampling Program (ASP) study conducted by the Australian Nuclear Science and Technology Organisation (ANSTO) has involved monitoring suspended particulates over large areas of NSW since 1991.

3.7.7 Noise

The media review has highlighted that noise can be a concern to residents in any residential or urban setting. In the Muswellbrook area, noise related complaints to the Council appear to be as a result of noise from heavy vehicles, trains, cattle and poultry farms and farm machinery. Noise complaints are also received by the various mining operations in the area via their community enquiry/complaint lines.

4 Community Attitudes towards the proposal (Phase 2)

This section summarises the issues and perceived impacts identified by a range of stakeholders with an interest in the proposed Anvil Hill project. As has been highlighted earlier in this report, impact assessments are likely to be deficient if they discount the effect on people's values, social dynamics and beliefs about particular events. Those people directly affected are in the best position to say how they actually experience events. Further, people's own predictions, in the form of optimism and fears, are a significant component of their behaviour and hence social impacts (Ross 1990).

Consequently, in this section of the report, issues and attitudes have been expressed in line with stakeholder feedback relating to the proposal. Where possible, throughout the assessment process, stakeholder views have been validated through the development of community information sheets summarising the key findings/outputs of the various phases of the assessment and through the provision of feedback sheets that afford further community comment and feedback.

Stakeholders have been identified through a community networking approach and community attitudes have been assessed through a range of consultative assessment methods. These include:

- Personal Interviews (qualitative and quantitative assessment)
- Community Group Presentations
- Community Telephone Survey
- Community Consultative Committee Meetings
- Community Information Sheet Feedback Forms

The stakeholders who have participated in the assessment process and the issues emerging from these forums are outlined in more detail below.

4.1 Stakeholder Analysis

Social impact assessment involves the cooperation and coordination of a number of 'social partners' or stakeholders. As Burdge (2004) outlines, stakeholders may be affected groups or individuals that:

- Live nearby a resource;
- Are forced to relocate;
- Have an interest in the proposed action or change;
- Use or value a resource; or
- Are interested in its use.

To ensure adequate representation of the community, six stakeholder groupings were identified through a community networking approach and consulted as part of the social assessment program. These groups are listed in Table 4.1.

Table 4.1: Stakeholder Groups involved in the assessment process.

Group Title	Group Description	Consultation/Social Assessment Methods
GROUP 1 Local Residents/ Landholders/ Tenants	Residents and landholders residing in close proximity to the Project Site. This included local landholders, tenants and immediate neighbours.	Personal Interviews – Qualitative discussion of issues – Quantitative issues Survey Distribution of Community Information Sheets A total of 112 interviews and 77 surveys were conducted
GROUP 2 Government Agencies And Political Representatives	A range of relevant Local, State and Commonwealth government agencies and representatives with a role in the development approval have been contacted in relation to the project. These included: Commonwealth Government <ul style="list-style-type: none">• Department of Environment and Heritage (DEH) State Government <ul style="list-style-type: none">• NSW Department of Planning• NSW Department of Natural Resources• Department of Environment and Conservation (DEC)• NSW Heritage Office• NSW Department of Lands• Roads and Traffic Authority NSW Local Government <ul style="list-style-type: none">• Muswellbrook Shire Council	Personal Interviews Presentations/Project Briefings Telephone Interviews Community Information Sheets
GROUP 3 Special Interest Groups	Those groups with a particular interest in the proposal at regional and local levels i.e. environmental groups, professional and trade associations, community organisations, local media, other industry groups. <ul style="list-style-type: none">• Minewatch• Muswellbrook Lion's• Wybong Public Hall Committee• Muswellbrook Chamber of Commerce• Denman Chamber of Commerce• Denman District Development Association Masonic Lodge• Denman Visitors Centre• Country Women's Association• Denman Rotary• Muswellbrook Rotary• Wybong Water Users Association• PCYC• Muswellbrook Horse Racing Club	Personal and telephone Interviews Community Group Presentations Community Information Sheets
GROUP 4 Service Providers and Functional Groups	A range of service providers and individuals/groups with a functional linkage to the project and its activities in the following sectors: <ul style="list-style-type: none">• Education• Health• Accommodation• Community Services	48 Personal and telephone interviews Community Group Presentations Community Information Sheets Service Provision Review Social Indicators Analysis
GROUP 5 Wider Community	Residents residing within the broader Wybong and Muswellbrook Shire communities	Community Survey of 400 households Community Information Sheets Media Releases CCC Meetings Project Open Information Days

4.2 Community Issues

This section outlines the issues/perceived impacts identified by the range of stakeholders with an interest in the proposed development.

The following sections summarise the issues arising from consultation with:

- Landholders residing in proximity to the project site (112 landholders/residents)
- Community and Environmental groups with an interest in the proposal (8 community groups)
- Residents within the broader Wybong area and Muswellbrook Shire (400 households)

4.2.1 Landholder Issues

Interviews were undertaken with 112 local residents/landholders in the Wybong area. This reflects a 77% response rate. Landholders in this group have been divided into two groups depending on whether their properties fall within or outside the proposed project area. These categories include:

- Landholders residing within the proposed project area (N=16)
- Landholders residing within 5 kms of the mine but outside of the proposed project area (N = 96).

Residents/landholders were contacted by telephone and asked if they would like to participate in the process. If in agreement, an appointment was made at a time convenient to the landholder. In addition to the 112 residents/landholders, 33 people contacted declined an interview; however a Community Information Sheet was still forwarded to the landholder. For an additional 18 people, telephone contact details were unavailable. These residents/landholders were also sent a Community Information Sheet with information on how to contact the project team.

As part of the interview process, participants were asked a number of questions about their issues in relation to the proposal in both a qualitative (through informal discussion) and quantitative form (a short questionnaire). Of the 112 landholders consulted, a total of 77 agreed to complete the quantitative survey during the interview process.

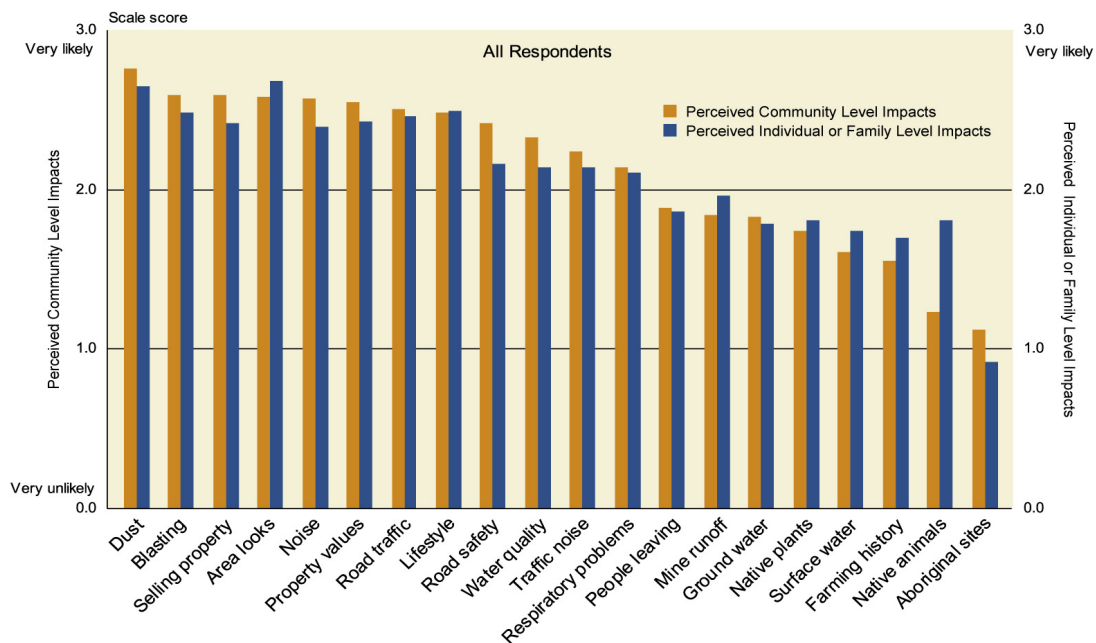
The interview initially focused on identifying the issues relating to the project and their perceived importance to the community (qualitative assessment). Following a general discussion of issues, landholders were asked to indicate how likely they thought changes from the proposed project would directly affect themselves, their family and their property (Perceived Individual or Family Level Impacts) or how the community generally may be directly affected by each of the perceived potential changes from the proposed project (Community Level Impacts) (quantitative assessment).

To assist in explanation, information obtained from the short survey has been supplemented with community responses provided during the personal interview process. Perceptions of individual/family and community level impacts have been distinguished where relevant.

Figure 4.1 provides a graphic representation of the types of issues that were raised by landholders in the Wybong area relating to the project. The issues analysis illustrates that there was very little difference in the impacts perceived to affect the individual or family and those perceived as impacting the broader community.

Issues such as dust, blasting, visual amenity, lifestyle impacts, including potential for relocation and issues relating to property value featured prominently across the analysis. Furthermore across both individual/family and community level impacts the perceived likelihood of occurrence was also very high. That is, many of the landholders interviewed considered there to be a high likelihood that impacts of the project would affect themselves, their family and their community.

Resident/Landholder perceptions of impact from the proposed Anvil Hill Mine Project



Source: Coakes Consulting (2005)

Figure 4.1: Resident/Landholder perceptions of impact from the proposed Anvil Hill Project (Quantitative Survey Results)

The following sections summarise the issue themes presented in Figure 4.1 in more detail.

Dust

Dust was a key issue raised by participants, with comments relating to the impact that dust in the area may have on health and current respiratory problems. For example:

"if they are creating all the dust there is no way I can stay here"
"I've got nothing against mines but, fair dinkum, they ruin the air quality"
"I think coal dust doesn't do you a lot of good".

There were also concerns surrounding the impact of dust on other industry sectors, such as the farming and horses. Comments included

"we can't have the horses breathing dust"

Cumulative dust impacts were also identified due to the strong presence of mining in the region and other projects within the locality. This perception contributed to concern that there would be difficulty in determining the dust background levels in relation to the current proposal. For example:

"It'll (the mine) contribute to an already dusty area"
"the whole of Muswellbrook's in dust now, let alone when the mine goes ahead."

Some participants commented on the frequent dust storms in the area. For example:

"I regularly drive through a dust storm near an existing open cut mine and everyone complains and nothing is done about it"

Blasting

The perceived impact of blasting was also raised as a key impact, with a general negative sentiment expressed among residents interviewed. In particular, concerns regarding emitted odours and the impact of blasting on surrounding man-made structures, such as houses and dams were frequently raised. For example,

"It will be a problem if the dams crack up when they start blasting"

"I would say that it would crack my house"

"it will impact because we anticipate road closure disruptions".

Lifestyle Changes

The perceived impact on lifestyle and the potential for lifestyle change was a key issue, as illustrated by the following quotes:

"we won't be able to sit outside and enjoy our property"

"don't want to come home from working in a mine to sit out on the veranda at night to watch it working".

Within this issue theme, three issue sub-categories can be distinguished.

i) Sense of Community: It was evident that a strong sense of community exists in the Wybong area and concerns were raised as to how this would be affected by the proposed development. For example:

"How are my kids going to adapt to being in town?"

"it's a split up of the whole family community. These people have known nothing but farming. It's a close knit community out here",

"I haven't moved in 37 years"

"this mine will take a lot of people from the community"

"we're going to lose neighbours who look out for us"

"we'll lose a lot of our friends"

ii) Uncertainty: A further lifestyle issue related to uncertainty. Some residents expressed agitation, confusion and fatigue over not knowing for years how the proposal would affect the community and themselves personally. Some residents referred to having to defer farm/property maintenance and investment decisions as a result. As residents outlined:

"it annoys me the that they have the power to stuff up your life for so long"

"the sooner we get an answer the happier people will be and they can settle down"

"your life's in limbo the whole time"

"are we going to be in the area of affectation? ... six years in limbo"

"we don't want to move and if it doesn't go ahead and we've sold, we've uprooted ourselves for nothing"

"it's really unsettling".

Some residents also felt that the proposal would significantly alter their personal life plans. Relevant comments included:

- "we'll have to shift — you can't live next door to a coal mine. My family's been here for 50 years"*
- "my whole retirement plan has been put through the shredder"*
- "we moved here to get away from the mines — if we knew mines were coming we wouldn't have come here"*
- "we don't want our kids growing up next to a mine".*

iii) Potential Relocation: Other residents were concerned about the personal costs of potential relocation and the ability to replicate lifestyle in the area elsewhere. For example:

- "purchase of property doesn't take into account the cost of relocation",*
- "there's nowhere else in the area you can afford to buy"*
- "there's a supply shortage and Sydney people have pushed prices to artificial levels"*
- "I don't know if I'll be able to find another place to suit what I am doing"*
- "where do we go to live? ... How can we afford land near town?"*
- "the children don't want to leave the land".*

Visual Aesthetics

The potential visual impacts associated with the proposed mine development were raised by several participants. Residents spoke of the natural beauty of the region and the almost 'iconic' nature of Anvil Hill. People commented:

- "To us, it's (Anvil Hill) comparable to Ayers Rock"*
- "anything that destroys the natural habitat is not good"*
- "it spoils it, wrecks it, ruins it".*

Noise

There were also concerns raised regarding the impact of noise. Specific issues related to the possibility of increased noise at night. For example:

- "it's very quiet here at night — there's no background noise — we'll hear 'em every time they reverse".*

Some residents remarked how noise carried in the area due to temperature inversions and the unique geography of the area. As several residents remarked:

- "impact will be high because it is a valley"*
- "prevailing wind will mean it will carry across the property"*
- "in this quiet valley you can hear everything ... they are going to have a lot of trouble with noise"*

In addition, traffic noise was also perceived as a problem *"particularly at night, from rail and shift workers' cars"*. There was also concern expressed over the cumulative impact of noise from multiple sources and whether this would distort the background level.

Property Value and Acquisition

The perceived impact on property value and a residents' ability to sell their property was a critical issue for those interviewed. There was a perceived concern that it would be difficult to sell properties in the future with a mine in the area:

"if the mine doesn't buy me out who else is going to?"

"I don't want to sell but I don't want to stay and find out later that it's devalued and dust affected".

Specifically, it was perceived that properties on the outskirts would be likely to have a reduced property value and thus would be difficult to sell. Comments included:

"it depends on whether you are in the mine area or not"

"depends on where you are — sitting on the fringe is not good ... if the mine doesn't buy you — no one else will" and "if you get left on the edge then you would be most affected".

There was also a sense of powerlessness and belief that the company held 'all the cards' in relation to the potential for property acquisition. Comments included:

"there's only one buyer around here"

"the only one who wants to buy is the mine"

"If it goes ahead and they don't buy me out you'd have trouble selling to anyone else"

"A property up the road was about to sell but the buyer pulled out when they heard about the mine".

Increased Road Traffic and Road Safety

There were specific concerns raised by those interviewed regarding the increase of construction traffic, and subsequent increase in noise. The issue of potential local road changes was also raised by some residents. Additional road traffic, associated with a mine workforce, was perceived as a pervasive community issue and was seen to have a further impact on road safety. It was suggested that roads in the area were not able to support traffic increases, and there were concerns outlined over the already high rate of accidents in the region.

Water Quality

In relation to water quality, the potential contamination of rain water tanks from dust was raised by a number of residents. Comments included:

"we're comfortable with our water now, but we've become worried about the effects on it",

"we have dust now in our water tanks"

"the well gets discoloured, sometimes orange."

Other residents were more concerned about general water quality issues in the area and the cumulative impact of mining on local river systems. For example:

"look at the river, it is absolutely lifeless once you get to where the mines are, go further up the valley and see the fresh green streams"

Impacts of Fauna and Flora

Several issues were raised regarding the potential impact on flora and fauna and associated impacts on properties. For example, residents frequently commented on the impacts of kangaroos on their property. There was the perception that the approval of the mine would result in an increase in the kangaroo population on private properties. For example:

"the place is over run by them all ready" (kangaroos)"
"the mines don't look after them (kangaroos) and Parks and Wildlife don't control the numbers — they go onto neighbouring properties and eat the crops. The people using fauna as a reason to stop the mines don't have land"

Some residents raised concerns over the impact that the proposed mine may have on other native flora and fauna such as:

"there are big bird and marsupial populations on our properties"
"they will be walking an environmental tightrope"

In addition, there were concerns over the spreading of 'tiger pear', in the area, and there was a perception that this issue would not be addressed by the company.

Cultural Heritage

There was mixed sentiment among those interviewed regarding the possible impacts on Aboriginal artefacts in the area. There was a tendency for residents to be unaware of the existence of artefacts in the area, however some concern was expressed regarding the possible threat of disturbance due to proposed mining activities.

Community Engagement and Information Provision

It was evident in speaking with residents that several community groups have an active interest in the proposed mine development. These groups have expressed a desire for comprehensive and meaningful information to be communicated on the proposal. Additionally, at a local landholder level, there was interest in obtaining specific information in relation to potential impacts on private properties. As one resident commented:

"That's the main thing - to be kept in touch and not be left in the dark".

Many landholders were appreciative of the opportunity to have their individual issues heard and recorded. However, there was also a general sense of weariness among many residents due to the history of the project in the community. Given the presence of other mining projects, there was a sense that the project was 'a done deal', and that the development would go ahead despite community concerns.

4.2.2 Issues by Geographic Location

To determine whether issues differed among landholders, depending upon whether they were located within or outside the proposed project area, further analysis was undertaken. The survey responses were analysed according to the two parameters of:

- Community Interest: the issue is perceived by landholders to be of interest to the broader community rather than being specific to individuals or families;
- Self-Interest: the issue is relevant to individuals or families rather than to the broader community.

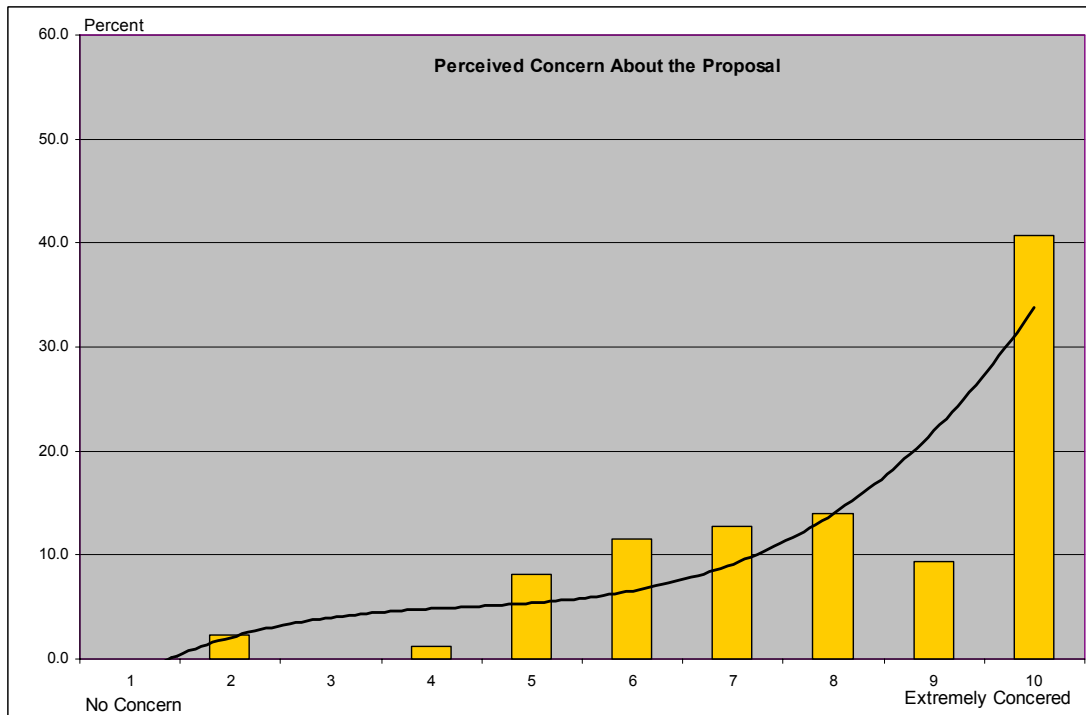
Table 4.2 outlines the issues that were considered important by landholders falling both within and outside of the project area. The issues identified and outlined in the table are those that were perceived by landholders as of both 'high community' and 'high individual' interest; and thus are considered salient for assessment as part of the project proposal.

Table 4.2: Salient community and individual level issues as perceived by landholders within and outside of the project area

Issues identified by landholders within the Project Area	Additional Issues identified by landholders outside of the Project Area
How the area looks	<i>Reduced property values</i>
Dust from the mine	<i>Reduced road safety</i>
Changes in lifestyle	<i>Changes in water quality</i>
Noise from the mine	<i>Increase in respiratory conditions</i>
Blasting at the mine	
Increase in road traffic	
Difficulty selling property	

As the table illustrates the issues that were of main concern to the residents/landholders within the project area included lifestyle changes, reduced property values as well as concerns around the direct impacts of the mine such as dust, noise, increased traffic and visual and aesthetic impacts. Additional issues perceived by landholders to be of 'high community' and 'high individual' interest outside of the project area, included reduced property values, reduced road safety, changes in water quality and health issues associated with dust. The issues that were considered of less importance at an individual and community level, related to water issues (run-off, groundwater, surface water), native plants and animals, farming history and aboriginal heritage.

As, Figure 4.2 indicates, when landholders were asked to indicate their level of concern in relation to the project, high levels of concern were noted, with almost 50% of those interviewed expressing extreme concern in relation to the project.



Source Coakes Consulting 2006

Figure 4.2: Perceived Level of Concern about the Project

The following responses illustrate this sentiment:

"it (mining) buggers everything up"

"they take one of the few areas around Muswellbrook not affected by mining and turns it upside down"

"the mining has been good for the town, but it's ruined the place"

"We're not opposed to the mine — but we don't want to live next to it".

4.3 Wider Community Views

To obtain the views of the wider community, a number of mechanisms were used to provide information on the project and to assess community attitudes towards the proposal. These methods included:

- Community Group Presentations
- Muswellbrook Shire Survey

Issues identified through these mechanisms are summarised in the sub-sections below.

4.3.1 Community Groups

As part of the assessment process, a number of presentations on the project were provided to key community groups within the area. These groups included:

- Denman Rotary
- Muswellbrook Lions
- Muswellbrook Rotary
- Wybong Public Hall Committee
- Wybong Water users
- Muswellbrook and Denman Chamber of Commerce

The issues identified in the group presentation forums were often related to the specific focus of the group being consulted.

For example, feedback and questions from groups involved in economic and local business development were more likely to centre around economic aspects of the proposal, whereas groups concerned with the use of natural resources, such as landcare, Wybong Water Users, were more concerned with environmental issues and potential impacts of the project on the surrounding physical environment. Other environmental issues raised during the presentations included traffic impacts, visual impacts, impacts of dust and noise and general amenity.

In addition, several groups raised the issue of the potential cumulative impacts that could arise if several proposed projects were implemented within the same area within a similar time frame.

4.3.2 Shire (LGA) Community

The attitudes of the general Muswellbrook Shire (LGA) community towards the project were assessed through a telephone survey of 400 randomly selected households. The survey included questions that identified:

- knowledge and awareness of the proposal;
- beliefs about the potential benefits and disadvantages of the proposal;
- the level of community support for the proposal; and,
- questions relating to the social and demographic characteristics of respondents.

This section of the report summarises the findings of the community survey.

In relation to survey demographics, 60% of respondents were female and 40% male. In comparison to the 2001 census of the population for the Muswellbrook Shire area, the survey sample had disproportionately more females represented than males.

The majority of survey respondents (78%) were residents of Muswellbrook, with an additional 8% being from Denman. Of these respondents, 12% currently worked in the coal industry, with a further 9% having worked in the coal industry in the past. In contrast, 73% of survey respondents lived in a household where no other household member currently worked in the coal industry.

A significant percentage of the sample (47%) had heard of the Anvil Hill Project, with the highest level of awareness being in the Denman area (67%), which is the closest township to the proposed mine project. In comparison, the level of awareness amongst respondents from the town of Muswellbrook was significantly lower (43%).

Although there was some level of awareness of the proposal in the general community, specific knowledge of the proposal was limited, with few people aware of the proposed

location of the mine, the type of coal operation being proposed and how the coal was being used.

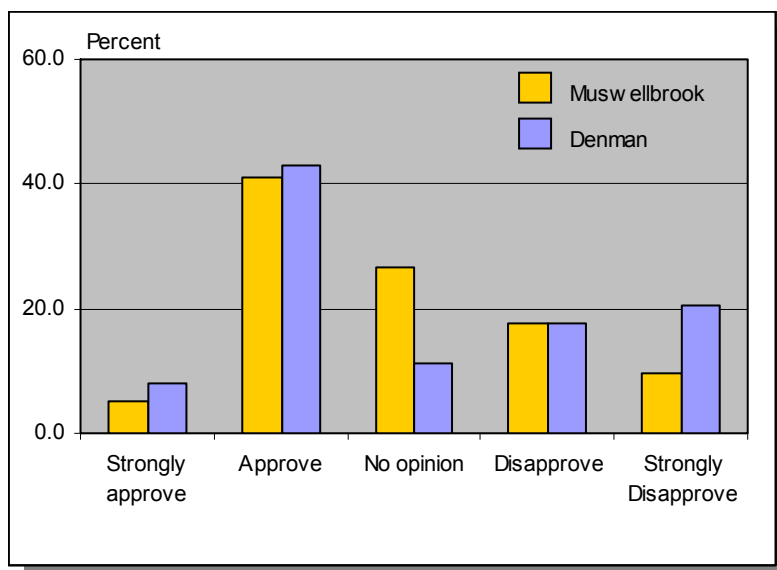
For instance across all respondents:

- Sixty nine percent had no knowledge of where the proposed project was to be exactly located
- Twenty-one percent of the population indicated they did not know anything about the type of coal operation that was being proposed, with knowledge amongst this group limited to the belief that the mine was to be an open cut coal mine.
- When respondents were asked if they believed the coal was to be used domestically within Australia or for export to overseas countries, 79% of respondents indicated they did not know how the coal was to be used.

While there was limited knowledge of the specific proposal amongst residents of the Shire, 57% of respondents indicated that they had average or below average knowledge of coal operations and mining generally.

After being presented with information that described the characteristics and location of the proposed coal mine, all respondents were asked if they approved of the proposal. In response to this question 46% of all respondents indicated that they either 'strongly approved' or 'approved' of the mine proposal. Twenty-four percent of respondents expressed 'no opinion either way' and a further 29% either 'disapproved' or 'strongly disapproved' of the proposal.

Figure 4.3 shows the level of approval of the project amongst residents in the Muswellbrook and the Denman area. Although the distribution of percentages is similar, residents within the Denman area are less likely than Muswellbrook residents to hold an ambivalent attitude towards the proposal and are more likely to express approval or disapproval of the project. In other words, the attitudes of residents in the Denman area have a tendency to be more polarised than the attitudes of Muswellbrook residents.



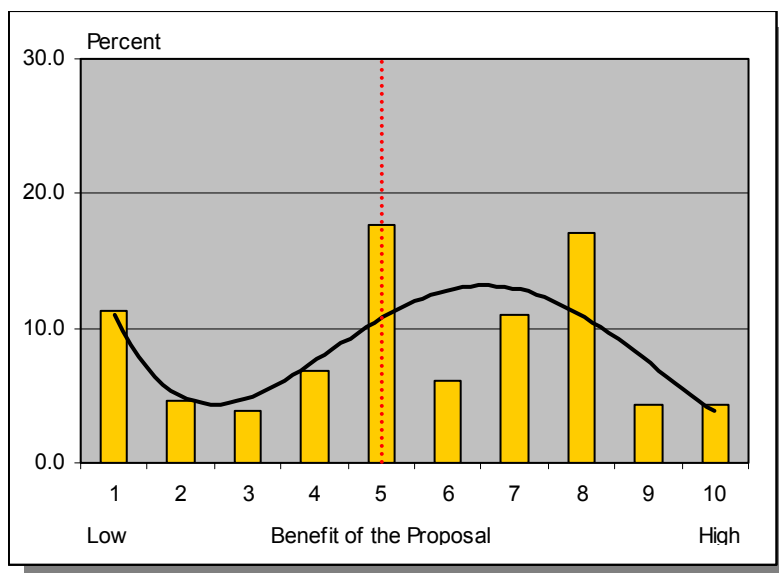
Source Coakes Consulting 2006

Figure 4.3: Level of approval of the project by residential location

All respondents were asked to identify what they considered to be the potential benefits of the proposal, if any. The three most frequently reported benefits included employment (75%), support for the local economy, including small businesses (43%) and the opportunity to develop further community infrastructure and services in the area (16%).

Benefits associated with providing employment, support for the local economy and the provision of community infrastructure and services were also the primary issues which were found to underpin support and approval of the project. Even amongst those who disapproved of the project, 49% believed that the proposal would provide employment benefits for the area.

Respondents were asked to score the benefits of the proposal to the community using a 10-point scale with 1 indicating no community benefit and 10 indicating very high community benefit. The median score obtained across respondents, was 5.0 indicating that 50% of the sample scored a relatively low community benefit (5 or less) and 50% scored a relatively high community benefit (6 or more). Figure 4.4 shows the distribution of scores on the 10-point benefit scale. This finding illustrates a polarity in perception across Shire respondents in relation to the benefit of the project to the community.

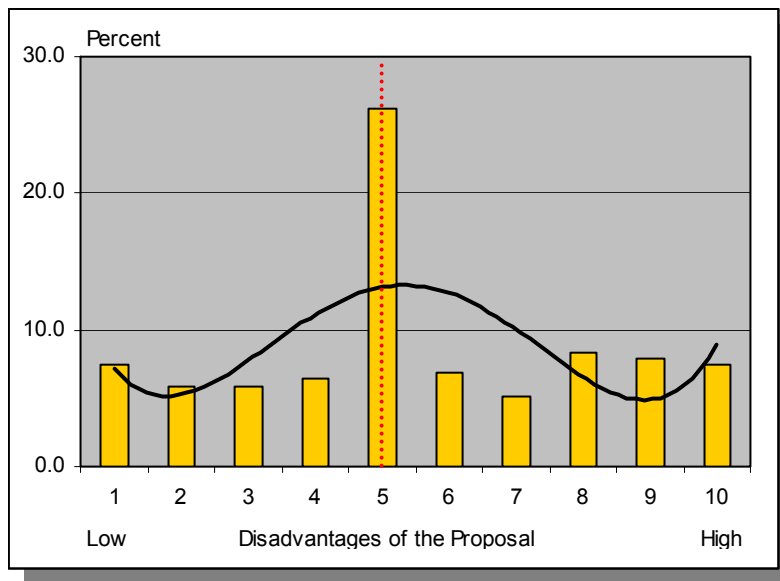


Line indicates normal distribution
Coakes Consulting 2006

Figure 4.4: Benefits of the Proposal to the Community in the Region

When asked to identify the disadvantages of the proposal, the most significant disadvantages identified related to a perceived 'increase in dust from the mine' (59%), 'an increase in noise from the mine' (31%) and 'an increase in respiratory conditions' (31%). These three issues were also found to be the primary reasons why the majority of respondents disapproved of the project.

Respondents were also asked to score the disadvantages of the proposal to the community using a 10-point scale, with 1 indicating no community disadvantage to 10 indicating very high community disadvantage. The median score was 5.0 indicating that 50% of the sample scored relatively few disadvantages (5 or less) and 50% scored relatively high disadvantages (6 or more). Figure 4.5 shows the distribution of scores on the 10-point community disadvantage scale. Once again perceptions of disadvantage appear to be relatively polarised across the sample.



Line indicates normal distribution

Source Coakes Consulting 2006

Figure 4.5: Disadvantages of the Proposal to the Community in the Region

The questionnaire included several items relating to consultation and the provision of information about the proposal. Respondents indicated the most preferred methods for providing information about the proposal to be through letter box drops and the local newspaper. In line with this feedback, these methods have been utilised in the feedback of information to the wider community.

Eighteen percent of all respondents indicated an interest in being provided with additional information about the proposal. The type of information respondents requested covered a significant range of issues. The two most common issues focussed on information about the commencement of construction and/or mining and whether local or external contractors would be employed in the construction and operation of the mine.

In conclusion, respondents in the wider community had some knowledge of the proposal, with those residing in Denman (the township closest to the proposed development) having the most knowledge (67%) of the proposal. The survey also indicated that 50% of the community identified advantages and disadvantages associated with the proposal. The proposed benefits mentioned by the community were largely economic, whereas the perceived disadvantages focused on assumed health and aesthetic impacts. In general, 46% either approved or strongly approved of the project, with 29% disapproving or strongly disapproving of the project; a further 24% were unsure of held no opinion.

5 Mining in the Community - Economic Contribution (Phase 3)

The economic assessment of the proposed Anvil Hill Project has been conducted by Gillespie Economics (2006) and this analysis forms the basis of this section. This information is a necessary component of the socio-economic assessment to enable comprehensive prediction of the economic impacts of the proposal on the community (local, regional and state).

In relation to the Anvil Hill Project, the economic impacts of the project are likely to occur in two distinct phases, those of construction and operation. The revenue, expenditure and employment associated with these phases will stimulate economic activity for the local and regional economy, as well as for the broader NSW economy.

Regional economic impact assessment is primarily concerned with the effect of a project on an economy in terms of specific indicators, such as:

- **Gross regional output**, the gross value of business turnover;
- **Value-added**, the difference between the gross value of business turnover and the costs of the inputs of raw materials, components and services bought in to produce the gross regional output;
- **Income**, the wages paid to employees including imputed wages for self employed and business owners; and
- **Employment** is the number of people employed (including full-time and part-time).

The economic analysis uses regional input-output analysis to arrive at the likely economic impacts of the project during construction and operation. This involves two steps, first, the construction of an appropriate input-output table to identify the economic structure of the region and multipliers for each sector of the economy; and second, identification of the initial impact of the construction and operation of the project in a form compatible with the input-output equations to enable the estimation of the input-output multipliers and flow-on effects. These multipliers indicate the total impact on the economy of changes in demand for the output of one industry. Conventional gross regional output multipliers include a number of components such as:

- *Initial Effect*, the initial output stimulus, usually a \$1 change in output from a particular industry;
- *First round effects* - the amount of output from all intermediate sectors of the economy required to produce the initial \$1 change in output from the particular industry.

Further details of the methodology can be found in the full report. The regional impacts of the construction and operational phases are estimated for the indicators of output, value-added, income and employment and are outlined in the proceeding sub-sections.

5.1 Construction Phase

It is estimated that the monthly construction workforce will employ from 10 to 200 people over a period of approximately one year. On average over this time period a workforce of in the order of 100 is predicted. It is assumed that this workforce will have the same pattern of expenditure as a normal workforce within the region. It is further assumed that the new construction sector will have the same input output coefficients and hence regional linkages as the existing other construction sector in the region.

It is estimated that the construction phase economic impacts will be felt within three sectors of the economy, namely:

- The construction sector including mine site preparation and the construction of plant and facilities;
- Other property services sector involved in leasing of industrial machinery, plant or equipment;
- The agriculture, mining and construction machinery manufacturing sector involved in the manufacture of construction, earthmoving and mining machinery.

Because of the specialist nature of the required capital equipment, it is assumed that purchases and leasing will largely occur outside the region.

Given the assumptions stated earlier, in the order of \$14M of capital costs would need to be spent on other construction within the region to result in a direct workforce of 100 people. The direct and indirect regional economic impacts of this level of expenditure in the Muswellbrook, Scone and Singleton region during the construction phase of the Project is provided below

Table 5.1 shows the total regional impacts of the construction phase and includes the flow-on effects associated with firms buying goods and services from each other (production-induced effects) and the flow-on effects that are associated with employing people who subsequently buy goods and services as households (consumption-induced effects). The table uses Type 11A ratio multipliers to show the flow on effects within the sector. Type 11 A multipliers are conceptualised as follows:

$$\text{Type 11A Ratio Multiplier} = \frac{\text{Initial} + \text{Production Induced} + \text{Consumption Induced Effects}}{\text{Initial Effects}}$$

Table 5.1: Regional Economic Impacts of the Construction Phase of the Project on the Regional Economy

	Direct Effect	Production Induced	Consumpt. Induced	Total Flow-on	TOTAL EFFECT
OUTPUT (\$'000)	13,837	4,757	2,622	7,379	21,216
Type 11A Ratio	1.00	0.34	0.19	0.53	1.53
INCOME (\$'000)	4,481	846	708	1,554	6,035
Type 11A Ratio	1.00	0.19	0.16	0.35	1.35
VALUE ADDED (\$'000)	6,973	1,843	1,238	3,081	10,054
Type 11A Ratio	1.00	0.26	0.18	0.44	1.44
EMPL. (No.)	100	21	23	44	143
Type 11A Ratio	1.00	0.21	0.23	0.44	1.44

Source Gillespie Economics 2006

Based on the economic assessment, it is estimated that construction of the Project will contribute in the order of:

- \$19M to \$21M in annual direct and indirect regional output or business turnover;
- \$9M to \$10M in annual direct and indirect regional value added;
- \$5M to \$6M in annual direct and indirect household income; and
- 121 to 143 direct and indirect jobs.

The construction phase flow-on impacts are likely to affect a number of sectors, mainly wholesale and retail trade, accommodation, cafes, restaurants, road transport, scientific research and fabricated metal products.

Table 5.2: Distribution of Average Direct and Flow-on Employment by Industry Sector of the Construction Phase for the Regional Economy

Sector	Average Direct Effects	Production Induced	Adjusted Consumption-induced	Total
Primary	0	0	1	1
Mining	0	0	0	0
Manufacturing	0	5	1	6
Utilities	0	0	0	1
Wholesale/Retail	0	4	10	14
Mechanical and other repairs	0	2	1	2
Accommodation, cafes, restaurants	0	1	3	3
Building/Construction	100	0	0	100
Transport	0	3	1	3
Services	0	6	7	13
Total	100	21	23	143

Note: Totals may have minor discrepancies due to rounding.

Source Gillespie Economics 2006

5.2 Operational Impacts

The operational impacts of the project were analysed by estimating the average annual revenue of the new project; the average annual operating costs; and, the estimated wages for mine employees and direct mining contractor employment.

Adjusted estimates of regional economic impacts of the operation phase of the Project, on the regional economy and the NSW economy in terms of output, value added, income and employment (in 2006 dollars) are shown in Tables 5.3 and 5.4.

Table 5.3: Annual Regional Economic Impacts of the Operation Phase of the Project on the Regional Economy

	Direct Effect	Production Induced	Consump. Induced	Total Flow-on	TOTAL EFFECT
OUTPUT (\$'000)	181,928	30,406	12,213	42,619	224,547
Type 11A Ratio	1.00	0.17	0.07	0.23	1.23
INCOME (\$'000)	19,236	5,582	3,298	8,881	28,117
Type 11A Ratio	1.00	0.29	0.17	0.46	1.46
VALUE ADDED (\$'000)	103,293	11,977	5,766	17,742	121,035
Type 11A Ratio	1.00	0.12	0.06	0.17	1.17
EMPL. (No.)	208	135	107	241	449
Type 11A Ratio	1.00	0.65	0.51	1.16	2.16

Source Gillespie Economics 2006

It is estimated that the operation of the Project will make the following contribution to the regional economy:

- between \$212M and \$224M in annual direct and indirect regional output or business turnover;
- between \$115M and \$121M in annual direct and indirect regional value added;
- between \$25M and \$28M in annual household income; and
- between 343 and 449 direct and indirect jobs.

For the NSW economy, the operation of the Project is estimated to contribute:

- between \$275M and \$324M in annual direct and indirect regional output or business turnover;
- between \$133M and \$158M in annual direct and indirect regional value added;
- between \$33M and \$43M in annual household income; and
- between 531 and 809 direct and indirect jobs.

As far as the project multipliers are concerned, the Type 11A ratio multipliers for the operational phase of the mining proposal range from 1.14 for value-added up to 1.90 for employment. While for the larger NSW region they range from 1.29 for value added up to 2.55 for employment.

Table 5.4 indicates the estimated effect of the operational phase for both the regional economy and the NSW economy.

Table 5.4: Operational Impacts of the Project for the Regional Economy and NSW Economy (2004 Dollars)

	Region (\$000)	NSW (\$000)
TOTAL INTERMEDIATE	\$23,384	\$43,394
Wages and Salaries	\$19,234	\$19,234
Other Value Added	\$84,047	\$84,047
Imports	\$55,262	\$55,427
OUTPUT	\$181,928	202,102
Employment	208	208

The flow-on impacts from the operational phase of the Project are likely to benefit a number of different sectors of the regional economy, mainly:

- retail trade sector;
- wholesale trade sector;
- rail and road transport sectors;
- accommodation, cafes and restaurants;;
- agricultural and mining machinery manufacturing sector;
- electricity supply sector;
- other property services sector;
- community services;

However, other sectors that may also benefit include the communication sector, banking sector, petroleum sector, legal, accounting, marketing and business management services and ownership of dwellings sector.

Table 5.5: Distribution of Average Direct and Flow-on Employment by Industry Sector for the Regional Economy

Sector	Average Direct Effects	Production Induced	Adjusted Consumption-induced	Total
Primary	208	0	2	211
Mining	0	5	0	5
Manufacturing	0	19	3	23
Utilities	0	4	2	6
Wholesale/Retail	0	25	48	73
Mechanical and other repairs	0	3	4	7
Accommodation,cafes, restaurants	0	6	13	19
Building/Construction	0	1	0	1
Transport	0	21	3	24
Services	0	50	31	81
Total	208	135	107	449

Note: Totals may have minor discrepancies due to rounding.

Source Gillespie Economics 2006

Table 5.5 indicates that direct, production-induced and consumption-induced incremental employment impacts of the Project on the regional economy are likely to have different distributions across sectors. Direct employment impacts would generate demand for mining employment. Production-induced employment impacts would mainly generate demand for employment in the services sectors (predominantly community services, legal, accounting and business management sector, other businesses services, other services, other property services, scientific research and banking), wholesale and retail trade, manufacturing (predominantly agriculture, mining and construction machinery manufacturing, fabricated metal products manufacturing, other chemicals manufacturing, other machinery manufacturing and iron and steel manufacturing) and transport sector (predominantly rail and road transport). Consumption-induced employment flow-on effects would mainly generate demand in the wholesale and retail trade sectors, the services sectors (education, health, community services and personal services) and accommodation, cafes and restaurants sector.

5.3 Conclusion

In summary, the construction phase will mainly stimulate the construction sector and the wholesale and retail trade, accommodation, cafes, restaurants, road transport, scientific research and fabricated metal products sectors. The operational phase, on the other hand, will directly generate demand for mining employment in the regional economy.

The employment impacts induced by production will mainly occur in the services sectors, wholesale and retail trade, manufacturing and transport sector (predominantly rail and road transport). Employment impacts induced by consumption flow-ons would mainly occur in the wholesale and retail trade sectors, the services sectors and accommodation, cafes and restaurants.

6 Mining in the Community - Population Impact Projections (Phase 3)

One of the key social impact areas associated with large scale development projects involves the impact of the project's workforce (construction and operation) on the population in the region. This section of the report considers the projected population impacts associated with the Anvil Hill project and also assesses this impact in light of other development activities that may influence population change in the region (Cumulative impact).

In order to assess population changes associated with the project, the social assessment program involved a detailed review of service provision within the Muswellbrook Shire. This information has been used as a baseline from which population impacts can be predicted. However, as such information is provided as a 'snapshot' at a particular time, such information may be subject to fluctuation and change, and should thus be interpreted cautiously.

6.1 Construction Phase

As outlined in Section 5, it is estimated that the construction workforce for the project will have a peak construction workforce of 200 at any one time.

Due to the specialised nature of construction, it is assumed that only 20% (40) of these employees will be sourced from within and around the Muswellbrook LGA and that 80% (160) will be sourced from outside the region. It is further assumed that, due to the temporary nature of construction, these workers will not be accompanied by their families and will stay in temporary accommodation for this construction period.

Given that the major population impact relating to the construction workforce will be on temporary accommodation. A review of temporary accommodation in the Muswellbrook Shire was included in the service provision assessment undertaken for the project. This review included the temporary accommodation currently available (as of March 2006) in the Muswellbrook LGA in Hotels, Motels and Caravan Parks. In addition, the Shire also has many bed and breakfast facilities and in March 2006, the Muswellbrook Tourist Information Centre estimated that a total of 600 beds are currently available in the Shire.

The review indicated that many of these establishments have relatively high occupancy rates, with a weighted average occupancy rate across the LGA of 73%. Given this figure, it is assumed that only 162 of these 600 beds would be available at any one time.

However, interviews with service providers have indicated that there are a number of temporary accommodation operators who plan to extend their operations in the next five years. The most significant of these is the planned expansion of the Pinnaroo Caravan Park, with an approved expansion of up to 90, 3-bed demountables. Together with the 5-year expansion plans of the other operators interviewed, this would further increase the temporary accommodation capacity of the Muswellbrook LGA by 480 beds.

Provided these operators are able to have a proportion of this additional temporary accommodation available prior to the commencement of the project's construction phase, the 480 beds, together with the currently available 162 beds, and any available

rental accommodation, should provide sufficient accommodation within the Shire to accommodate the construction workforce associated with the Anvil Hill Project.

6.2 Operational Phase

6.2.1 Workforce Projections

The operational workforce associated with the Anvil Hill Project is estimated at approximately 240 workers. When assessing the population impacts of a potential project, it is preferable to use the maximum workforce scenario in order to provide a true indication of the full impact of the project on the broader LGA population. The operational employee population stays at around 240/235 for 15 years of the project, and consequently for the purpose of this analysis an operational workforce figure of 240 has been used to project population impacts relating to the project. There will be a ramp up to these numbers in the first few years and a decline in the last couple of years

In order to assess population impacts, it is necessary to have an understanding of the nature of the mine employee workforce and an indication of where the mine employee population may reside. In 1999, Coakes Consulting conducted a Mine Industry and Employee Survey which involved the participation of a number of mining operations and their employees within the Muswellbrook area. Since no further assessment of this kind has been undertaken since 1999, this report provides the most current information on mine employee characteristics, residential and expenditure patterns. As a result, this work has been used to assist in predicting impacts associated with the influx of a project workforce to the area.

The survey indicated that mine employees working in the Muswellbrook area reside in a number of townships across the region. Using this residential distribution, it can be assumed that any new employees to the area have the potential to reside in similar townships across the region.

Based on previous experience in similar social impact assessments of development projects both nationally and internationally, the assumption is adopted that 20% of jobs associated with the Anvil Hill project will be locally sourced and 80% sourced from within the State. Given this assumption, it is then predicted that 20% of the 240 operational employees (48) will be drawn from the local area with 80% (192) relocating to the Muswellbrook LGA and surrounding areas for employment.

In line with this assumption, Table 6.1 shows the predicted residential location of individuals who may relocate to the area. Given the residential patterns outlined in the Mine Industry and Employee Survey (Coakes Consulting, 1999), the majority (135 or 56.4%) of these workers may choose to live in the Muswellbrook LGA in the towns/urban centres of Muswellbrook and Denman, with others residing in the Scone and Singleton Shires and other towns across the region.

Table 6.1: Town of Residence estimations for Anvil Hill

Town	Residential Distribution (%)	Project Employees
Muswellbrook	47.8	92
Denman	8.6	17
Scone	11.6	22
Aberdeen	6.2	12
Singleton	13.7	26
Other towns (across the region)	12.1	23
Total	100	192

Source: Residential distribution figures have been obtained from the Mining Industry and Employee Survey (Coakes Consulting, 1999)

From Table 6.1 it can be seen that of the 80% of total project employees predicted to move to the region, approximately 92 may choose to reside in Muswellbrook and 17 in Denman, equating to 109 new employees moving into the Muswellbrook LGA. This forms the basis for predicted project related population and community service impacts shown in following sections.

In addition to the 109 employees predicted to move to the Muswellbrook LGA, 20% of the total workforce, approximately 48 employees, are predicted to be sourced from existing local residents within the LGA. Whilst there will be no direct impacts to local services associated with these 48 employees, it is noted that in total, 157 project operational employees are predicted to reside in the Muswellbrook LGA.

The following section discusses the family level impacts associated with the influx of the operational workforce for the project.

6.2.2 Family Level Impacts across the Region

In relocating to the area, it is assumed that operational employees will be accompanied by their families. The Mine Industry and Employee survey (Coakes Consulting, 1999) reports an average family size of 3.5 and thus it is assumed that the new operational employees will have a similar family size.

Table 6.2 shows the predicted family size according to the preferred residential locations outlined in Table 6.1. As the table clearly illustrates, the main population impacts of the project will be experienced in the Muswellbrook LGA, with a potential influx of 381 new community members.

Table 6.2: Predicted Family Size per Town

Town	Employees	Total Family Impact
Muswellbrook	92	322
Singleton	26	91
Scone	22	77
Denman	17	59
Aberdeen	12	42
Other	23	81
Total	192	672

As Table 6.2 indicates, the project-related impacts on the towns of Singleton, Scone and Aberdeen are smaller in comparison to Muswellbrook. The balance of the population (12%) was distributed across a range of small towns in the region and is therefore not included in the further analysis. Table 6.3 uses the predicted residential location of operational employees (as defined in Table 6.1) and distributes the predicted family impact according to the 2001 ABS age distribution in each respective township.

As Table 6.3 illustrates a relatively small number of employees are likely to reside in the townships of Singleton, Scone and Aberdeen. Consequently, it is therefore assumed that current service levels within Singleton, Scone and Aberdeen will be able to absorb this relatively small increase in population and subsequent demand on services in these localities. For this reason, the following section concentrates on the population impacts within the Shire of Muswellbrook specifically.

Table 6.3: Predicted Population Impacts for Scone, Singleton, Aberdeen, Muswellbrook and Denman

	Scone		Denman		Muswellbrook		Aberdeen		Singleton	
Age ranges	ABS %	People	ABS %	People	ABS %	People	ABS %	People	ABS %	People
0-4	9	7	9	5	9	29	8	3	10	9
5-12	14	11	16	9.5	16	52	14	6	16	14
13-17	9.71	7	7.53	4.5	8.84	28	10.89	4	8.5	8
18-24	9.21	7	9.72	6	9.12	29	11	5	9.08	8
25-39	22.95	18	22.35	13	24.68	79	22	9	26.21	24
40-49	17.35	13	16.6	10	16.36	53	16	7	16.68	15
50-64	17.74	14	18.62	11	16	52	18	8	14.25	13
TOTAL	100	77	100	59	100	322	100	42	100	91

6.2.3 Project Related Population Impacts in Muswellbrook Shire

To project the likely family level impacts within the Muswellbrook LGA, it is assumed that 109 employees (operational workforce) and their families (total of 381 new community members) move to the LGA of Muswellbrook. It is further assumed that these families would have a similar age structure to the ABS 2001 census for Muswellbrook urban centre and that they would have the same average 3.5 persons family size as the 1999 mine employee profile (Mining Industry and Employee Survey, 1999).

A further assumption is that all of the employees and their family members would be of usual working age i.e. under the age of 65 years. Table 6.4 shows the likely age distribution of these families across the centres of Denman and Muswellbrook.

Table 6.4: Predicted Age Distribution of Operational Families in Muswellbrook

Age ranges	2001 Census Age Frequency %	Projected Family Distribution
0-4	9	34
5-12	16	61
13-17	8.84	34
18-24	9.12	35
25-39	24.68	94
40-49	16.36	62
50-64	16	61
TOTAL	100	381

Source: ABS Community Profiles 2001

6.2.4 Project Related Impacts on Services in Muswellbrook Shire

The social impact assessment for the proposed Anvil Hill project has included a detailed assessment of the services in the Muswellbrook LGA. In assessing the likely population impacts associated with the Anvil Hill project across different age categories within the Shire, the impact of additional families will probably impact the following key sectors:

- Education
- Health
- Youth Services
- Housing/Accommodation

6.2.4.1 Education

Within the LGA, a number of public and independent primary schools exist, with one high school and one TAFE. In addition, educational institutions include a Maths Study Centre, a literacy and numeracy service, the Upper Hunter Conservatorium of Music, the Upper Hunter Community Training Incorporated and the Muswellbrook Preschool.

In relation to primary school education, the age distribution in Table 6.4 shows a projected increase of 61 children aged between 5 and 12 years. Table 6.5 indicates that given an additional capacity for 360 children across all primary schools in the area, existing primary schools would have the ability to absorb the predicted number of children associated with the influx of family members associated with the project workforce.

Table 6.5: Primary School Capacity

	2006 Enrolments	Current Capacity	Spare Capacity
Muswellbrook Primary	680	620	-60
Muswellbrook South Primary	408	620	212
St James Private	300	400	100
Dunmore Lang Community School	22	25	3
Denman Primary	190	260	70
St Josephs Private	60	90	30
Martindale	20	25	5
TOTAL	1680	2040	360

Note: Given the proximity of Aberdeen to Wybong, St Josephs Private (located in Aberdeen), has been included in the analysis.

Table 6.4 predicts a project-related increase of 34 people aged between 13 and 17 years. Table 6.6 shows an additional capacity for 320 students across secondary schools in the Muswellbrook LGA.

Table 6.6: Secondary School Capacity

	2006 Enrolments	Current Capacity	Spare Capacity
Muswellbrook High School	800	1100	300
St Josephs Private High School	630	650	20
TOTAL	1430	1750	320

Note: Given the proximity of Aberdeen to Wybong, St Josephs Private (located in Aberdeen), has been included in the analysis.

Table 6.7 outlines that the Muswellbrook TAFE has considerable surplus capacity. The total predicted population aged 18 -24 years associated with the Anvil Hill Project is 35 people, whereas the TAFE has the capacity for an additional 200 student enrolments.

Table 6.7: Tertiary Sector Capacity

	2006 Enrolments	Current Capacity	Spare Capacity
TAFE	1300	1500	200

In conclusion, there is sufficient capacity, within the education sector (primary, secondary, tertiary) in the area, to absorb any changes in population impacts associated with the Anvil Hill Project.

6.2.4.2 Health

Muswellbrook hospital is the largest of the public hospitals located in the Upper Hunter region, and a further hospital is also located at Denman. The Muswellbrook Hospital is supported by a range of community health services and health professionals working within the Shire. In addition, Muswellbrook has a range of aged care services and facilities, including an aged day care and activity service; health and community care nurses and a Home Care Service.

Table 6.8: Health Sector Capacity

Health Facility	2006 Services	2001 Service Population	2001 Beds per capita	Current Capacity	Spare Capacity
Muswellbrook District Hospital	46 Acute beds	14,796 MBrk Shire	4.6 beds: 1000 people	68 beds (-22)	Over capacity
Denman Hospital	6 Acute beds	1406 Denman UC	4.3 beds: 1000 people	6 beds	At capacity

Note: Beds per capita based on hospital planning service guidelines; service population based on ABS 2001 census

In relation to health services, it is evident that population influx across age groups associated with the Anvil Hill Project workforce and their families may potentially place pressure on health services within the area. As the profiling work has outlined, the health sector in the Shire has been identified as an area requiring improvement. As previously outlined, the Hunter region has a shortage of doctors and is cited as having the fifth worst doctor-patient ratio in the State. The Muswellbrook hospital has also approached the Industrial Relations Council regarding understaffing issues.

6.2.4.3 Youth Facilities

Within the Muswellbrook Shire, there are limited youth services. One of the key organisations is the PCYC, which develops programs for young people aged between 13 to 24 years. According to Table 6.4, the projected project-related population increase in this age group is 69 young people. Table 6.9 indicates that, with the projected population increase, this facility would be able to absorb an increase in this age group.

Table 6.9: Youth Service Capacity

Youth Facility	Membership	2001 Service Population (13-24yrs)	Facility Capacity	Spare Capacity
PCYC	1500	2389	2500	1000

6.2.4.3 Housing

To accommodate the predicted population impacts associated with the Anvil Hill project (family size impact of 381 people) across the Muswellbrook Shire, the housing sector must be assessed. The service sector assessment conducted as part of the social impact assessment has identified availability and affordability of residential and rental housing stock to be an issue in the Muswellbrook area. However, there are a number of initiatives under way to remedy this problem and it is anticipated that there will be sufficient housing stock available once the project moves into the operational phase (if approved).

Table 6.10 illustrates the availability of land for residential development and the number of lots pending approval within the LGA.

Table 6.10: Proposed housing developments in the Muswellbrook Shire

Proposed Subdivision	New Lots	Approved lots
Eastbrooks (South Muswellbrook)	1189 New lots	140 (Stages 1-6 approved)
Mitchelles Land (North Muswellbrook)	213 New lots	Pending approval
St Mary's	132 New Lots	25 approved
Calgaroo	30 new lots	30 approved
North Denman (Almond St Rezoning)	47 lots	Pending approval
The Village Zone (North Denman)	500 new lots	Pending approval
TOTAL	2111	195 (as of June 2006)

Source: Shire of Muswellbrook (June 2005).

In conclusion, given the stated assumptions, the impact assessment conducted for the Anvil Hill Project indicates that the Shire of Muswellbrook is likely to be able to absorb the predicted population impacts arising from the construction and operational phases of the project.

6.3 Cumulative Impact Assessment

It is also important to assess the cumulative impacts that may arise from other projects that are currently planned in the Muswellbrook LGA. At this point in time, one additional project has been approved, namely the Mt Pleasant Mine. The cumulative population impacts associated with these two operations for construction and operational phases is outlined in Tables 6.11 and 6.12.

Table 6.11: Cumulative Impacts of Project Construction Phases

Operation	Predicted Construction Workforce	Peak Predicted Construction Workforce	Beds Required (80%) at Peak
Anvil Hill Project (pending approval)	200	200	160
Mt Pleasant (approved)	253	123	98
Total	453	323	258

Note:

Residential distribution figures for Muswellbrook Shire obtained from the Mining Industry and Employee Survey (Coakes Consulting, 1999)

Mt Pleasant workforce projections sourced from the EIS

Source: Source Coakes Consulting (2006)

Given current project assumptions of an influx of 80% of the workforce across both projects, for construction and operations, similar demands will be placed on the temporary accommodation sector. Analysis for the Anvil Hill project has indicated that providing planned expansion and additional temporary accommodation is constructed; there will be sufficient temporary accommodation for the Shire. However, in considering

the cumulative impact of the projects outlined in Table 6.11, and the estimated peak accommodation requirement of 258 beds, it is likely that the temporary workforce associated with both the Anvil Hill and Mt Pleasant mines will be absorbed adequately if additional planned accommodation capacity is developed within the project timeframes.

In relation to cumulative impacts, the impact of the operational phases of the two operations, as shown in Table 6.12, equates to a total of approximately 1130 new community members that may potentially move into the Muswellbrook LGA and thus impact service provision.

Table 6.12: Cumulative Impacts of Project Operational Phases

Operations	Peak Predicted Operational Workforce	Predicted Workforce Influx (Muswellbrook Shire Only)	Associated family level impact
Anvil Hill (pending approval)	240	109	381
Mt Pleasant (approved)	380	214	749
TOTAL	620	323	1130

Notes: Residential distribution figures for Muswellbrook Shire obtained from the Mining Industry and Employee Survey (Coakes Consulting, 1999)

Mt Pleasant workforce projections sourced from Project Application (DoP website, April; 2006)

Source: Coakes Consulting (2006)

In combination, this cumulative impact on services within the Muswellbrook LGA, if not addressed, is likely to play a significant role in the attraction and retention of staff for the Anvil Hill Project and any other projects (mining or non-mining related) that may develop within the area in the next 3 to 5 years.

To ensure accuracy of prediction, the cumulative impact assessment for the Anvil Hill project, will need to be revised in light of additional information regarding project approvals/closures in the area.

7. Impact Management (Phase 4)

As has been highlighted in Section 2 of this report, a development proposal may bring benefits to particular individuals or groups and negative impacts or costs to others. Consequently, if negative impacts are predicted, it is the role of social impact assessment to determine how such impacts may be ameliorated, mitigated or managed to produce the minimum degree of disruption to those affected.

Mitigation strategies are processes, programs or plans designed to address the perceived impacts/issues raised by stakeholders during the assessment process. Such strategies can go some way in ensuring that perceived impacts raised by the community are addressed or offset in an appropriate manner. In some instances, a particular strategy may fully address the concern raised. In other instances, where particular values are held, such strategies may only assist in making a proposal more acceptable to the community, rather than changing the values held by particular stakeholder groups. In contrast, other strategies may serve to enhance the positive impacts associated with a project.

In response to the perceived issues/impacts raised by the community in Section 4 of this report, Centennial has identified a range of mitigation and amelioration strategies that could be employed to address community concerns. Furthermore, the company has committed to a community partnership and contribution program that aims to enhance potential benefits associated with the Anvil Hill Project.

With respect to environmental issues raised in relation to the project, these issues have been subject to specific specialist reports as part of the Environmental Assessment (EA).

7.1 Social Mitigation Measures

The following sections summarise the key findings of the social impact assessment and outlines the key management commitments designed to minimise or enhance the predicted social impacts associated with the proposal.

7.1.1 Property value and acquisition

The impact on property value and a residents' ability to sell their properties was a critical issue for those interviewed.

Key Findings:

- There was a perceived concern that it would be difficult to sell properties in the future with a mine in the area.
- Specifically, it was perceived that properties on the outskirts of the Project Area would be likely to have a reduced property value and thus would be difficult to sell.
- Perceived sense of powerlessness and belief that the company held 'all the cards' in relation to the potential for property acquisition.

Key Management Commitments

In response to the perceived impacts associated with property value and acquisition, the following strategies have been proposed by Centennial.

- An offer to all landholders within the Assessment Lease Area for purchase at market value. This offer has been in place for some years to address the concern of not being able to sell due to a proposed mine in the area.
- An offer to all landholders whose property may be impacted upon beyond relevant noise and dust criteria, at some stage during the process, to purchase their property should project approval be received. This offer includes a contribution towards independent legal advice.
- Residents located just outside of impact areas will be consulted to review impacts and discuss mitigation alternatives.

7.1.2 Sense of Community and Place

It was evident, through consultation with local residents and landholders, that a strong sense of community exists in the Wybong area and concerns were raised as to how this would be affected by the proposed mine development.

Key Findings:

- The potential for disruption to the community through relocation was raised frequently by local landholders and residents.
- Little differentiation found between perceived individual/family and community level impacts associated with the Project.
- Relatively small resident population e.g. 537 persons/158 families (ABS, 2001); high proportion of couples with children (52.5%) and relatively high home ownership (38.4%) or property purchase (24.3%) indicating connectedness to the area.

Key Management Commitments

To address the issue of sense of community and place, the company has committed to document the history of the area and to work with the local Wybong community on important community projects. These include:

- Documentation of the history of the area in consultation with local landholders
- Community contribution to the value of \$500,000 directed towards the Denman and Wybong communities for much-needed sporting and recreation facilities.

7.1.3 Lifestyle Changes through Uncertainty and Relocation

The impact on lifestyle and the potential for lifestyle change was a key issue raised by stakeholders as part of the social assessment program.

Key Findings:

- Residents expressed agitation, confusion and fatigue over not knowing for years how the proposal would affect the community and themselves personally.
- Residents perceived that the proposal would significantly alter their personal life plans.
- Concerns about the personal costs of potential relocation and the ability to replicate lifestyle in the area elsewhere were also raised.
- Should development approval be granted, approximately 80-90 families may need to relocate from the Wybong area. Given that approximately 185 households currently exist in the Wybong area (ABS, 2001), this represents approximately 47% of the current households in this locality (ABS, 2001).

- The potential relocation of families with strong ties to the region can have a severe disruptive effect on the social fabric of the community.

Key Management Commitments

- An offer to all landholders within the Assessment Lease Area for purchase at market value. This offer has been for some years to address the concern of not being able to sell due to a proposed mine in the area.
- An offer to all landholders whose property may be impacted upon beyond relevant noise and dust criteria, at some stage during the process, to purchase their property should project approval be received. This offer includes a contribution towards independent legal advice.
- Commitment by the company to work with residents located just outside of impact areas to review impacts and discuss mitigation alternatives.

7.1.4 Population Impacts on Community Service Provision

One of the key social impact areas associated with large scale development projects involves the impact of the project's workforce (construction and operation) on the population in the region. In order to assess population changes associated with the project, the social assessment program involved a detailed review of service provision within the Muswellbrook Shire. This information has been used as a baseline from which population impacts have been predicted.

Key Findings

- The project is predicted to result in the influx of a peak construction workforce of 200 employees and an additional 109 employees (operational workforce) in the Shire.
- Of the operational workforce, it is predicted that approximately 109 are likely to reside in the Muswellbrook Shire specifically, with other employees distributed throughout the Hunter Valley in other townships e.g. Scone, Singleton
- An influx of 109 new employees equates to a family size impact of approximately 381 new community members across different age group categories.
- Cumulative population impacts associated with the development of additional projects in the Shire e.g. Mt Pleasant Open cut mine development, Mount Arthur Coal Underground Project, could potentially result in a population influx of an additional 1623 community members.
- The education sector appears able to absorb any changes in population in the 5 to 17 year old age group.
- Health services are generally already at capacity, and thus impacts may be experienced in this sector.
- Accommodation of the construction workforce (peak of 200 workers) and the operational workforce (peak of 240 workers) will be supplied in the various accommodation facilities within the Shire, absorbed through the existing rental market and proposed accommodation and housing developments that are planned within the area.
- Timing of new and proposed accommodation/housing developments will be critical; particularly when the cumulative impacts of other project approvals are considered.
- Given that additional developments may occur concurrently in the area, within the scheduled timeframe of the Anvil Hill project, it is clear that services within

the Shire of Muswellbrook may be stretched by the cumulative population impacts associated with these projects.

- Flow on effects from both the construction and operational phases of the project are likely to affect a range of sectors in a very positive way, such sectors include: wholesale and retail trade, accommodation, cafes, restaurants, rail and road transport, agricultural and mining machinery manufacturing sector, fabricated metal products, electricity supply, other property services, community services, and scientific research.
- Development is consistent with the Shire's strategic plan which identifies the need to facilitate economic development and to ensure the establishment of complimentary business ventures within the LGA.
- Further education and training is required to increase the employability of local residents in line with development potential. The region is currently experiencing a skills shortage, and attraction and retention of population is a key issue. Consequently the Shire is also promoting tourism development and through various forums is encouraging industry engagement to facilitate new community opportunities and enhancement initiatives.

Key Management Commitments

Strategies developed to address population impacts and subsequent effects on service provision and to enhance the positive impacts of the proposal at a general community level, are detailed below:

- Development of a strategy, with community input, to provide opportunities for the community to benefit from the mine project.
- Company commitment to contribute 1cent/tonne of saleable product to support community projects.
- Development of an education and training program aimed at addressing multiple methods of increasing local employment, such as sponsorship of TAFE courses, apprenticeships and traineeships.

7.1.5 Community Engagement and Information Provision

Key Findings

Concerns were raised by stakeholders regarding the need to be informed of the proposed mine, the potential impacts and the associated impact management strategies.

Key Management Commitments

- Commitment to an ongoing community consultation and contributions program (see above) should the project be approved, specifically:
 - additional information relating to the commencement of construction and/or mining and involvement of local/external contractors
 - ongoing provision of project information using information sheets and local media.

7.2 Community Enhancement Measures

In addition to addressing the direct and indirect impacts associated with the Anvil Hill Project, Centennial has also developed a strategy to provide opportunities for the community to benefit from the mine project. The strategy has been developed based on an assessment of community need in the local Wybong and broader Muswellbrook community, through consultation with approximately 60 service providers and community groups. The consultation identified priority areas of community need and opportunities for potential community contributions and partnerships across the broad areas listed below.

- Opportunities for employment
- Health of local businesses and the local economy
- Roads
- Public transport
- Health services and facilities
- Recreation services and facilities
- Arts and cultural activities
- Educational and school services and facilities
- Environmental management
- Other community services and facilities

As a response to the priorities and suggestions raised through the community needs assessment, Centennial has committed to contributing 1 cent/tonne of saleable product to support community projects. It is envisaged that if the Anvil Hill project is approved, the evaluation of community projects and distribution of funds will be undertaken with community input, based on principles of partnership, representative ness and mutual benefit.

Table 7.1: Community Enhancement Program

COMMUNITY ENHANCEMENT PROGRAM

Issue of Concern	Detail	Mechanism/Contribution
Community Projects	For ongoing community projects, to be distributed with community input	1 cent/saleable tonne of coal produced
Local Environmental Management	External to the mine site Wybong Uplands Land Management Strategy	\$100,000 pa for 5 years
Education and Training	Sponsorship of TAFE courses, apprenticeships, traineeships	\$200,000 pa for 3 years
Local employment	To work with the local Council to facilitate local employment and residential opportunities within the Muswellbrook Shire	To be confirmed through consultation with key stakeholders
Community Infrastructure	Focus on Denman and Wybong e.g. sporting and recreation facilities	\$500,000

In addition, an upfront contribution to the value of \$500,000 will be directed towards the Denman and Wybong communities in consultation with key stakeholders.

Given community feedback, the areas of environmental management and local employment will be attributed priority to reflect stakeholder issues and expectations and will be addressed respectively through two mechanisms - the Wybong Uplands Land Management Strategy, and the Education, Training and Employment Strategy. These strategies will be further scoped and developed in partnership with community representatives and key stakeholders.

A broad overview of the company's proposed investment in each strategy is provided below.

Wybong Uplands Land Management Strategy

The proposed strategy will target land management in the Wybong area, beyond the disturbance area for the Anvil Hill Project. An annual contribution of \$100,000 over five years will be allocated to programs such as salinity management, riparian zone repair, demonstration farming, education, etc.

Education, Training and Employment Strategy

With an annual contribution estimated at \$200,000 over three years, a program will be developed aimed at addressing multiple methods of increasing local employment, such as sponsorship of TAFE courses, apprenticeships and traineeships. The program will also focus on increasing opportunities for education and training amongst Indigenous members of the community.

Centennial has also committed to working closely with the Muswellbrook Shire Council to develop strategies that will serve to maximise local employment and encourage residential opportunities within the LGA.

8 Monitoring

A key aspect of any social impact statement is the identification of specific mechanisms and indicators that can be implemented to monitor any potential impacts associated with the development over time. Given the company's commitment to ongoing community consultation, the development and identification of an appropriate social and community monitoring program could be undertaken as part of the company's ongoing community involvement program.

Given the level of concern among stakeholders in relation to the company's mining proposal, impact monitoring and provision of ongoing information to the community will be critical. Such a program, would need to identify any deviations from the impacts predicted and would document any unanticipated impacts that may arise in relation to the project.

The following table outlines some of the variables that would need to be assessed in the development of a comprehensive community management plan for the operation.

Table 9.1 Proposed Social Impact Monitoring Variables

Perceived Impact	Monitoring Variables	Potential Mechanism(s)
Environmental Impacts	Number of complaints Level of community concern relating to environmental impacts Level of satisfaction with the company's environmental management practices	<ul style="list-style-type: none"> • Anvil Hill Community Call Line, a toll free number that residents can call 24 hours a day, 7 days a week. ▪ CCC forum ▪ Newsletters with feedback mechanisms
Community engagement	Level of satisfaction with information provision and engagement mechanisms	
Community contributions	Level of awareness of Community Enhancement Program (CEP) Recognition of CEP programs Level of satisfaction with CEP programs Level of expenditure on community programs – local and regional by priority community issues Assessment of community wellbeing/quality of life	
Economic impacts	Level of local and regional expenditure from Centennial's employees	<ul style="list-style-type: none"> ▪ Employee/contractor survey to determine employee profiles and expenditure patterns

9 Conclusion

In conclusion, the Anvil Hill project, like many developments of its size, has the potential to impact on the social environment in both a positive and a negative manner.

While a number of social and environmental issues have been raised by local landholders in proximity to the development – both within and outside the project area; the broader LGA community appeared more accepting of the proposal due to the potential economic benefits of the project at a local and regional level.

Of greater concern, from a social impact perspective is the impact of the development on the sense of community of Wybong due to the potential dislocation of households in this area. In an attempt to manage this uncertainty, the company has endeavoured to provide assurance to local landholders through the provision of landowner purchase agreements, during the assessment phase of the project. While this has been viewed by some stakeholders, who are opposed to the project, as co-option of landholders; for many the process has provided greater certainty and provided landholders with the option to relocate should they perceive that the impacts of the project on their lifestyle, are too great.

While the population impacts on services within the LGA, associated with the proposed development, can be adequately managed for the project individually, the cumulative impacts of additional developments in the area may be problematic and place pressure on service sectors within the Shire. This will require further assessment should the proposal be approved and the timing of other projects in the area confirmed.

A development of the scale and size of the Anvil Hill Project brings significant benefits to particular stakeholders and costs to others. In identifying the issues of the local community of Wybong, in which the proposal is based, and the wider Muswellbrook LGA community, an attempt has been made by the company to address the issues raised by the community, through the development of appropriate mitigation and amelioration strategies; and through the development of a Community Enhancement Program, involving land management and education, training and employment strategies.

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Annexure 1 – Socio-economic characteristics

1.1 Population and Dwellings

In 2001, the Muswellbrook Shire had an estimated resident population of 14,796 (0.23% of the State's population) with 5,397 occupied dwellings. This represents a decrease of 766 people since the 1996 Census. As of 2001, Indigenous residents constitute at least 3.4% of the community, with 1.4% of the resident population born in non-English speaking countries.

A breakdown of the resident population for the urban centres nearest to the proposal is detailed in Table 1.1. Muswellbrook Shire has experienced population decreases between 1996-2001 this contrasts with the regional trend of population growth.

Since 1991 the population in the Muswellbrook LGA has been relatively stable with only a fall of 2.1%. Thirty-two percent of the population in 2001 lived in areas outside of the Muswellbrook urban centre.

In 2001, 54% of the population in Muswellbrook indicated they were located at a different address five years ago. This compares to 42% for the NSW State. In contrast the population of Denman is more likely to consist of longer term residents with only 34% at a different address more than five years ago.

Annexure Table 1.1 Population and Dwellings, 1991 - 2001

	1991	Census Years 1996	2001	NSW State (2001)
MUSWELLBROOK LGA				
POPULATION				
Total persons counted	15,111	15,562	14,796	
Persons in private dwellings	14,584	14,922	14,142	
% in private dwellings	96.5	95.9	95.6	97.0
PRIVATE DWELLINGS				
Occupied	4,971	5,346	5,397	
Unoccupied	394	460	534	
Total	5,365	5,806	5,931	
PERSONS PER PRIVATE DWELLING	3.0	2.9	2.7	2.7
Indigenous persons	275	386	503	
Percent of total persons	1.8	2.5	3.4	1.9
Different address 1 year ago ¹	na	na	2,618	
Percent different address 1 year ago	na	na	17.9	17.2
Different address 5 years ago ²	na	5,977	5,402	
Percent different address 5 years ago	na	41.6	40.4	42.1

MUSWELLBROOK URBAN CENTRE

POPULATION				
Total persons counted	10,156	10,541	10,036	
Persons in private dwellings	9,838	10,218	9,766	
% in private dwellings	96.9	96.9	97.3	97.0
PRIVATE DWELLINGS				
Occupied	3,382	3,687	3,740	
Unoccupied	199	270	312	
Total		3,581	3,957	4,052
PERSONS PER PRIVATE DWELLING	3.0	2.9	2.5	2.7
Different address 1 year ago ¹	na	na	1,908	
Percent different address 1 year ago	na	na	19.6	17.2
Different address 5 years ago ²	4,713	4,362	4,881	
Percent different address 5 years ago	51.6	46.6	54.2	42.1

DENMAN URBAN CENTRE

POPULATION				
Total persons counted	1,441	1,509	1,406	
Persons in private dwellings	1,410	1,484	1,371	
% in private dwellings	97.8	98.3	97.5	97.0
PRIVATE DWELLINGS				
Occupied	478	524	512	
Unoccupied	20	19	46	

	Total	498	543	558
PERSONS PER PRIVATE DWELLING	3.0	2.9	2.7	2.7
Different address 1 year ago ¹	na	na	205	
Percent different address 1 year ago	na	na	15.1	17.2
Different address 5 years ago ²	590	471	436	
Percent different address 5 years ago	45.3	35.4	34.4	42.1

Note: 'na' indicates the information is not available

¹ Excludes persons less than 1 year of age

² Excludes persons less than 5 years of age

Source: ABS (1991, 1996, 2001) Prepared by: EBC (2005)

1.2 Housing Tenure

In the Muswellbrook LGA and the urban centres of Muswellbrook and Denman, the percentage of dwellings that were fully owned, being purchased or rented has remained relatively stable since 1991.

In the Muswellbrook urban centre (UC) and relative to NSW state there is a trend towards fewer dwellings being fully owned and a relatively greater percentage of dwellings that are rented.

Annexure Table 1.2 Housing Tenure, 1991 – 2001 (Occupied Private Dwellings)

	1991	Census Years		NSW
		1996	2001	2001
MUSWELLBROOK LGA				
Fully owned	1,641	4,384	1,871	963,231
%	33.0	30.0	35.0	41.1
Being purchased	1,338	4,691	1,406	546,195
%	26.9	32.1	26.3	23.3
Rental	1,607	4,502	1,595	645,319
%	32.3	30.8	29.8	27.5
Other tenure	385	1029	474	188,932
%	7.7	7.0	8.9	8.1
Total occupied dwellings	4,971	14,606	5,346	2,343,677
%	100.0	100.0	100.0	100.0
MUSWELLBROOK UC				
Fully owned	1,052	1,228	1,263	963,231
%	32.4	33.3	33.7	41.1
Being purchased	985	1,041	956	546,195
%	30.3	28.2	25.5	23.3
Rental	1,202	1,204	1,266	645,319
%	37.0	32.6	33.8	27.5
Other tenure	8	215	259	188,932
%	0.2	5.8	6.9	8.1
Total occupied dwellings	3,247	3,688	3,744	2,343,677
%	100.0	100.0	100.0	100.0
Denman UC				

Fully owned	163	203	211	963,231
%	36.1	38.7	40.7	41.1
Being purchased	148	149	145	546,195
%	32.8	28.4	27.9	23.3
Rental	134	120	127	645,319
%	29.7	22.9	24.5	27.5
Other tenure	6	52	36	188,932
%	1.3	9.9	6.9	8.1
Total occupied dwellings	451	524	519	2,343,677
%	100.0	100.0	100.0	100.0

Note: 'Other tenure' includes not stated

Source: ABS (1991, 1996, 2001)

Prepared by: EBC (2005).

1.3 Community Age Structures

In the Muswellbrook LGA and the urban centres of Muswellbrook and Denman the percentage of elderly in the population, as evident in the elderly dependency ratio is significantly lower than that of NSW.

In contrast, in the Muswellbrook LGA and the urban centres of Muswellbrook and Denman the percentage of children in the population, as evident in the child dependency ratio, is significantly higher than that of NSW.

The higher percentage of children in the population is generally found in those age groups, below 12 years of age and with children at pre-school and primary school ages.

Although in 2001 in the Muswellbrook LGA there were more children and fewer elderly people than that found in NSW, the trend since 1991 has been for the number of children in the population to decline and the number of elderly people in the population to increase.

The median age for the Muswellbrook LGA (33 years) was also similar to that for NSW (35 years).

Annexure Table 1.3 Community Age Structures, 1991 - 2001

	Census Years			NSW State
	1991	1996	2001	2001
MUSWELLBROOK LGA				
0-4 Pre-School	1,467	1,368	1,181	422,341
%	9.7	8.8	8.0	6.7
5-12 Primary School	2,101	2,180	2,020	716,350
%	13.9	14.1	13.7	11.4
13-17 High School	1,228	1,185	1,145	439,592
%	8.1	7.6	7.8	7.0
18-24 Young Singles/Couples	1,615	1,523	1,244	580,412
%	10.7	9.8	8.4	9.2
25-39 Young/Middle Families	3,786	3,795	3,371	1,398,042
%	25.1	24.5	22.8	22.2
40-49 Mature Families	2,051	2,235	2,180	920,595
%	13.6	14.4	14.8	14.6
50-64 Pre-Retirement	1,694	1,957	2,234	1,005,361
%	11.2	12.6	15.1	15.9
65+ Elderly	1,148	1,268	1,381	828,475
%	7.6	8.2	9.4	13.1
Total	15,090	15,511	14,756	6,311,168
%	100.0	100.0	100.0	100.0
Age Dependency Ratio	53.4	52.4	52.2	49.6
Elderly Dependency Ratio	11.9	12.9	14.6	29.8
Child Dependency Ratio	41.5	39.4	37.5	19.8

MUSWELLBROOK URBAN CENTRE

0-4 Pre-School	100	979	854	422,341
%	1.1	9.3	8.6	6.7
5-12 Primary School	1,419	1,491	1,407	716,350
%	15.5	14.2	14.1	11.4
13-17 High School	838	798	799	439,592
%	9.1	7.6	8.0	7.0
18-24 Young Singles/Couples	1,070	1,011	825	580,412
%	11.7	9.6	8.3	9.2
25-39 Young/Middle Families	2,494	2,566	2,232	1,398,042
%	27.2	24.4	22.4	22.2
40-49 Mature Families	1,320	1,511	1,479	920,595
%	14.4	14.4	14.9	14.6
50-64 Pre-Retirement	1,111	1,227	1,447	1,005,361
%	12.1	11.7	14.5	15.9
65+ Elderly	826	918	903	828,475
%	9.0	8.7	9.1	13.1
Total	9,178	10,501	9,946	6,311,168
%	100.0	100.0	100.0	100.0
Age Dependency Ratio	56.1	54.6	54.7	49.6
Elderly Dependency Ratio	12.8	13.5	15.0	29.8
Child Dependency Ratio	43.3	41.1	39.7	19.8

DENMAN URBAN CENTRE

0-4 Pre-School	68	140	110	422,341
%	6.2	9.3	7.8	6.7
5-12 Primary School	131	198	201	716,350
%	11.9	13.2	14.3	11.4
13-17 High School	71	125	93	439,592
%	6.4	8.3	6.6	7.0
18-24 Young Singles/Couples	61	154	120	580,412
%	5.5	10.3	8.5	9.2
25-39 Young/Middle Families	243	330	276	1,398,042
%	22.1	22.0	19.6	22.2
40-49 Mature Families	118	212	205	920,595
%	10.7	14.2	14.6	14.6
50-64 Pre-Retirement	205	194	230	1,005,361
%	18.6	13.0	16.3	15.9
65+ Elderly	204	145	172	828,475
%	18.5	9.7	12.2	13.1
Total	1,101	1,498	1,407	6,311,168
%	100.0	100.0	100.0	100.0
Age Dependency Ratio	66.8	54.4	58.6	49.6
Elderly Dependency Ratio	30.5	14.9	19.4	29.8
Child Dependency Ratio	36.2	39.5	39.2	19.8

Note:

- The age dependency ratio is the proportion of the population (below 14 years and above 65 years) that is economically dependent for every 100 persons of working age (15-64 years).
- The elderly dependency ratio is the proportion of elderly persons (above 65 years) for every 100 persons of working age (15-64 years).
- The child dependency ratio is the proportion of elderly persons (above 65 years) for every 100 persons of working age (15-64 years).

Source: ABS (1991, 1996, 2001)

Prepared by: EBC (2005).

1.4 Education

Table 1.4 shows that when compared to the NSW State average, the three populations (Muswellbrook LGA, Muswellbrook and Denman urban centres) show a significantly higher percentage of the population only completing up to year 10 or equivalent and significantly fewer people completing till year 12 or equivalent.

Annexure Table 1.4 Highest Level of Schooling Completed (2001 Census: Persons over 15 years)

	Denman UC	Muswellbrook UC	Muswellbrook LGA	NSW State
Year 8 or below	153	763	1,170	429,941
%	14.5	10.3	10.5	8.6
Year 9 or equivalent	152	956	1,369	417,858
%	14.4	12.8	12.3	8.4
Year 10 or equivalent	421	2,761	4,044	1,338,279
%	39.9	37.1	36.4	26.8
Year 11 or equivalent	59	423	590	267,332
%	5.6	5.7	5.3	5.3
Year 12 or equivalent	162	1,601	2,332	1,899,691
%	15.3	21.5	21.0	38.0
Still at school	40	295	423	164,468
%	3.8	4.0	3.8	3.3
Did not go to school	6	33	52	60,824
%	0.6	0.4	0.5	1.2
Not stated	63	608	1,125	419,425
%	6.0	8.2	10.1	8.4
Total	1,056	7,440	11,105	4,997,818
%	100.0	100.0	100.0	100.0

Source: ABS (2001)
Prepared by: EBC (2005).

1.5 Birthplace by Region

Table 1.5 shows that in 2001, 88% of the population within Muswellbrook LGA were Australian born. This is significantly higher than the 70% found within the State of NSW.

Annexure Table 1.5 Birthplace by Region (2001 Census)

	Denman UC	Muswellbrook UC	Muswellbrook LGA	NSW State
Australia	1,263	8,913	12,991	4,450,772
%	90.1	88.8	87.8	69.9
Asia	3	69	110	441,791
%	0.2	0.7	0.7	6.9
North-West Europe	35	248	428	372,025
%	2.5	2.5	2.9	5.8
Southern and Eastern Europe	7	54	85	258,430
%	0.5	0.5	0.6	4.1
Oceania (excluding Australia)	18	94	170	154,177
%	1.3	0.9	1.1	2.4
Africa and Middle East	0	34	47	171,898
%	0.0	0.3	0.3	2.7
Americas	0	23	27	69,950
%	0.0	0.2	0.2	1.1
Other Locations	3	0	3	6,717
%	0.2	0.0	0.0	0.1
Not stated	72	572	896	385,409
%	5.1	5.7	6.1	6.0
Overseas visitors	0	26	40	60,577
%	0.0	0.3	0.3	1.0
Total	1,401	10,033	14,797	6,371,746
%	100.0	100.0	100.0	100.0

Source: ABS (2001)
Prepared by: EBC (2005).

1.6 Family Composition

In the Muswellbrook LGA there has been a significant decrease since 1991 in the number of people in families with children (-19.6%), and an increase in the number of people in families without children (+25.1%) and one parent families (+14.7%).

A similar trend in the composition of families between 1991 and 2001 is also evident in the urban centres of Muswellbrook and Denman.

Annexure Table 1.6 Family Composition (1991-2001 Census: Persons)

	Census Years			NSW State
	1991	1996	2001	2001
MUSWELLBROOK LGA				
Family couples with children	9,077	8,547	7,298	3,052,747
%	71.1	67.9	62.2	60.8
Family couples without children	2,053	2,335	2,568	1,103,878
%	16.1	18.5	21.9	22.0
One parent families	1,397	1,357	1,602	645,639
%	10.9	10.8	13.6	12.9
Other family types	233	351	270	217,416
%	1.8	2.8	2.3	4.3
Total Persons	12,760	12,590	11,738	5,019,680
%	100.0	100.0	100.0	100.0
MUSWELLBROOK UC				
Family couples with children	5,990	5,736	4,890	3,052,747
%	69.1	67.1	60.9	60.8
Family couples without children	1,400	1,587	1,712	1,103,878
%	16.1	18.6	21.3	22.0
One parent families	1,125	1,140	1,339	645,639
%	13.0	13.3	16.7	12.9
Other family types	157	88	89	217,416
%	1.8	1.0	1.1	4.3
Total Persons	8,672	8,551	8,030	5,019,680
%	100.0	100.0	100.0	100.0
DENMAN UC				
Family couples with children	914	841	766	3,052,747
%	73.8	68.9	66.0	60.8
Family couples without children	191	241	256	1,103,878
%	15.4	19.8	22.1	22.0
One parent families	115	122	126	645,639
%	9.3	10.0	10.9	12.9
Other family types	18	16	12	217,416
%	1.5	1.3	1.0	4.3
Total Persons	1,238	1,220	1,160	5,019,680
%	100.0	100.0	100.0	100.0

Note: Excludes lone person households and group households

Source: ABS (1991, 1996, 2001)

Prepared by: EBC (2005).

1.7 Weekly Household Income

The percentage of households with low, middle and high weekly incomes is reasonably similar between urban centres and the Muswellbrook LGA. However, an analysis of median weekly income show that, while incomes levels in Denman are similar to the NSW State median, Muswellbrook and the Muswellbrook LGA median incomes are significantly below that of the State.

Annexure Table 1.7 Weekly Household Income 2001 (Occupied Private Dwellings)

	Denman UC	Muswellbrook UC	Muswellbrook LGA	NSW State
Negative/Nil income	3	14	29	17,248
	0.6	0.4	0.6	0.8
\$1 - \$199	21	204	253	90,065
%	4.2	5.8	5.0	4.0
Low Weekly Incomes	24	218	282	107,313
%	4.8	6.2	5.6	4.8
\$200-\$399	78	615	799	357,083
%	15.7	17.4	15.7	16.0
\$400-\$599	65	399	595	269,226
%	13.1	11.3	11.7	12.1
\$600 - \$799	52	341	518	226,660
%	10.5	9.6	10.2	10.2
\$800 - \$999	51	299	473	192,175
%	10.3	8.4	9.3	8.6
Middle Weekly Incomes	246	1,654	2,385	1,045,144
%	49.6	46.7	47.0	46.8
\$1,000-\$1,499	105	532	814	350,916
%	21.2	15.0	16.0	15.7
\$1,500 or more	73	722	1,015	472,654
%	14.7	20.4	20.0	21.2
High Weekly Incomes	178	1,254	1,829	823,570
%	35.9	35.4	36.0	36.9
Income not stated	48	416	582	256,804
%	9.7	11.7	11.5	11.5
Total	496	3,542	5,078	2,232,831
%	100.0	100.0	100.0	100.0
Median Weekly Income	\$900	\$750	\$750	\$900

Source: ABS (2001)

Prepared by: EBC (2005)

1.8 Industry of Employment (Muswellbrook LGA)

In comparison to NSW, Muswellbrook LGA has significantly high percentages of employed people in agriculture, forestry and fishing (10.7%); mining (12.7%) and electricity, gas and water supply (5.3%).

While there are a relatively high percentage of people employed in mining compared to NSW, direct employment in this sector has declined 22.3% since 1991.

Table 1.8 also shows that the percentage of employment in many of the service sectors in 2001 (communications; finance and insurance; property and business services; education; health and community services; and cultural and recreational services), is below that found in NSW State.

Annexure Table 3.11 Muswellbrook LGA: Industry of Employment (1996-2001: Employed Persons)

	Census Years			NSW State
	1991	1996	2001	2001
Agriculture, Forestry & Fishing	614	652	667	92,358
%	9.3	10.0	10.7	3.4
Mining	1,015	1,068	789	14,823
%	15.3	16.3	12.7	0.5
Manufacturing	505	520	571	316,113
%	7.6	8.0	9.2	11.5
Electricity, Gas & Water Supply	703	473	329	20,389
%	10.6	7.2	5.3	0.7
Construction	299	431	445	189,740
%	4.5	6.6	7.1	6.9
Wholesale Trade	264	266	308	152,790
%	4.0	4.1	4.9	5.6
Retail Trade	706	769	863	390,914
%	10.6	11.8	13.9	14.2
Accom, Cafes & Restaurants	271	285	292	141,927
%	4.1	4.4	4.7	5.2
Transport and Storage	197	221	207	125,752
%	3.0	3.4	3.3	4.6
Communication Services	56	35	38	54,958
%	0.8	0.5	0.6	2.0
Finance and Insurance	138	123	75	131,955
%	2.1	1.9	1.2	4.8
Property and Business Services	314	388	399	334,299
%	4.7	5.9	6.4	12.2
Government Admin & Defence	209	173	159	105,380
%	3.2	2.6	2.6	3.8
Education	285	282	309	187,168
%	4.3	4.3	5.0	6.8
Health and Community Services	327	372	380	258,522
%	4.9	5.7	6.1	9.4
Cultural & Recreational Services	74	111	89	67,595
%	1.1	1.7	1.4	2.5
Personal and Other Services	165	191	159	98,321

%	2.5	2.9	2.6	3.6
Non-classifiable economic units	9	82	27	14,884
%	0.1	1.3	0.4	0.5
Not stated	480	93	122	50,508
%	7.2	1.4	2.0	1.8
Total	6,631	6,535	6,228	2,748,396
%	100.0	100.0	100.0	100.0

Note: The Industry classification underwent a major review between the 1991 and 1996 Census.
1991 Census data in this table should be used as an indicator only.

Source: ABS (1996, 2001)

Prepared by:EBC (2005)

1.9 Industry of Employment (Muswellbrook UC)

In comparison to NSW, the Muswellbrook urban centre has significantly high percentages of employed people in mining (14.2%), construction (8.0%) and retail trade (16.7%). Consistent with the Muswellbrook LGA, employment in the service sectors was generally lower than that found in the State.

Annexure Table 1.9 Muswellbrook UC: Industry of Employment (1991- 2001: Employed Persons)

	Census Years		NSW State
	1996	2001	2001
Agriculture, Forestry & Fishing	71	78	92,358
%	1.6	1.9	3.4
Mining	777	581	14,823
%	17.8	14.2	0.5
Manufacturing	347	315	316,113
%	7.9	7.7	11.5
Electricity, Gas & Water Supply	372	251	20,389
%	8.5	6.1	0.7
Construction	320	330	189,740
%	7.3	8.0	6.9
Wholesale Trade	178	199	152,790
%	4.1	4.9	5.6
Retail Trade	622	687	390,914
%	14.2	16.7	14.2
Accom, Cafes & Restaurants	215	220	141,927
%	4.9	5.4	5.2
Transport and Storage	135	141	125,752
%	3.1	3.4	4.6
Communication Services	21	29	54,958
%	0.5	0.7	2.0
Finance and Insurance	104	61	131,955
%	2.4	1.5	4.8
Property and Business Services	303	306	334,299
%	6.9	7.5	12.2
Government Admin & Defence	85	102	105,380
%	1.9	2.5	3.8
Education	216	225	187,168
%	4.9	5.5	6.8
Health and Community Services	260	281	258,522

%	6.0	6.9	9.4
Cultural & Recreational Services	73	50	67,595
%	1.7	1.2	2.5
Personal and Other Services	160	135	98,321
%	3.7	3.3	3.6
Non-classifiable economic units	54	23	14,884
%	1.2	0.6	0.5
Not stated	55	88	50,508
%	1.3	2.1	1.8
Total	4,368	4,102	2,748,396
%	100.0	100.0	100.0

Note: The Industry classification underwent a major review between the 1991 and 1996 Census are data is not readily available or comparable at the urban centre level.

Source: ABS (1996, 2001)

Prepared by:EBC (2005)

1.10 Industry of Employment (Denman UC)

In comparison to NSW, the Denman urban centre has significantly high percentages of employed people in agriculture, forestry and fishing (11.55); mining (12.0%), manufacturing (18.1%) and electricity, gas and water supply (5.7%). Like the Muswellbrook LGA, employment in the service sectors was generally lower than that found in the NSW State.

Annexure Table 1.10 Denman UC: Industry of Employment (1991 - 2001: Employed Persons)

	Census Years		NSW State
	1996	2001	2001
Agriculture, Forestry & Fishing	62	71	92,358
%	10.4	11.5	3.4
Mining	104	74	14,823
%	17.4	12.0	0.5
Manufacturing	59	112	316,113
%	9.9	18.1	11.5
Electricity, Gas & Water Supply	37	35	20,389
%	6.2	5.7	0.7
Construction	41	44	189,740
%	6.9	7.1	6.9
Wholesale Trade	36	31	152,790
%	6.0	5.0	5.6
Retail Trade	54	52	390,914
%	9.0	8.4	14.2
Accom, Cafes & Restaurants	35	36	141,927
%	5.9	5.8	5.2
Transport and Storage	16	25	125,752
%	2.7	4.0	4.6
Communication Services	3	3	54,958
%	0.5	0.5	2.0
Finance and Insurance	3	3	131,955
%	0.5	0.5	4.8
Property and Business Services	25	17	334,299
%	4.2	2.7	12.2
Government Admin & Defence	25	21	105,380
%	4.2	3.4	3.8
Education	16	27	187,168
%	2.7	4.4	6.8
Health and Community Services	47	41	258,522
%	7.9	6.6	9.4
Cultural & Recreational Services	0	6	67,595
%	0.0	1.0	2.5
Personal and Other Services	13	3	98,321
%	2.2	0.5	3.6
Non-classifiable economic units	12	0	14,884
%	2.0	0.0	0.5
Not stated	9	18	50,508
%	1.5	2.9	1.8
Total	597	619	2,748,396
%	100.0	100.0	100.0

Note: The Industry classification underwent a major review between the 1991 and 1996 Census are data is not readily available or comparable at the urban centre level.

Source: ABS (1996, 2001)

Prepared by: EBC (2005)

1.11 Labour force Characteristics

The percentage of persons employed full-time in each of the three population areas has remained relatively constant since 1991, while the percentage of part-time employment has increased.

With the exception of the Denman urban centre, in 2001 the Muswellbrook LGA and urban centre both had unemployment rates above that found in the State of NSW.

Annexure Table 1.11 Labour Force Characteristics 1991-2001 (Persons aged 15 years and over)

	1991	Census Years 1996	2001	NSW State 2001
MUSWELLBROOK LGA				
Employed				
Full-time	4,711	4,639	4,244	1,805,433
%	71.0	71.0	68.1	65.7
Part-time	1,590	1,765	1,776	858,483
%	24.0	27.0	28.5	31.2
Not stated	330	134	208	84,480
%	5.0	2.0	3.3	3.1
Total	6,631	6,538	6,228	2,748,396
%	100.0	100.0	100.0	100.0
Unemployed	623	663	539	213,196
Total labour force	7,254	7,201	6,767	2,961,592
Not in the labour force	3,430	3,680	3,825	1,799,540
Unemployment rate (%)	8.6	9.2	8.0	7.2
MUSWELLBROOK UC				
Employed				
Full-time	3,035	3,065	2,770	1,805,433
%	69.9	70.1	67.7	65.7
Part-time	1,063	1,222	1,191	858,483
%	24.5	27.9	29.1	31.2
Not stated	244	86	133	84,480
%	5.6	2.0	3.2	3.1
Total	4,342	4,373	4,094	2,748,396
%	100.0	100.0	100.0	100.0
Unemployed	438	494	407	213,196
Total labour force	4,780	4,867	4,501	2,961,592
Not in the labour force	2,403	2,597	2,591	1,799,540
Unemployment rate (%)	9.2	10.1	9.0	7.2
DENMAN UC				
Employed				
Full-time	410	419	414	1,805,433
%	67.1	71.4	66.0	65.7
Part-time	179	162	195	858,483
%	29.3	27.6	31.1	31.2
Not stated	22	6	18	84,480
%	3.6	1.0	2.9	3.1
Total	611	587	627	2,748,396
%	100.0	100.0	100.0	100.0
Unemployed	42	56	33	213,196
Total labour force	653	643	660	2,961,592
Not in the labour force	344	415	373	1,799,540
Unemployment rate (%)	6.4	8.7	5.0	7.2

Source: ABS (1991, 1996, 2001)

Prepared by: EBC (2002)