



APPENDIX P

SOCIAL IMPACT ASSESSMENT AND STAKEHOLDER ENGAGEMENT PROGRAM



**Mt Arthur Coal Consolidation Project
SIA and Stakeholder Engagement Program**

Report

Prepared for

**Mt Arthur Coal Pty Ltd
BHP Billiton**

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Executive Summary

Coakes Consulting has been engaged by Mt Arthur Coal to assess and evaluate the potential socio-economic impacts associated with the current application for planning approval for its open cut operations and the mining of additional areas within Mt Arthur Coal's current Mining Leases (ML) (the Project).

This report presents the findings of the socio-economic assessment, and includes:

- An overview of the objectives and methodology utilised in undertaking the socio-economic assessment program;
- A socio-economic context of the Muswellbrook community and surrounding townships within which the Project is located;
- A detailed analysis of the issues and outcomes of the consultation undertaken with landholders in proximity to the Project location;
- Potential strategies to further focus the company's social involvement and investment activities; and
- A recommended program for on-going monitoring and evaluation of the company's social and environmental performance throughout the life of the Project.

Program Participants

Stakeholder engagement has included:

- **Personal interviews** (January 2009 to present) – The aims of the personal interviews were to deliver Project information and identify potential Project impacts (both positive and negative), and to obtain the views and perceptions of stakeholders in and around the Project Area and the broader community;
- **Service Provider Surveys** (March 2009) - in the Muswellbrook, Singleton, and Scone Townships to identify current capacities of key service sectors in accommodating a potential workforce influx associated with the Project; and
- **Community Information Sessions** – two community information sessions outlining key findings of the impact assessment for further feedback and community comment (May 2009).

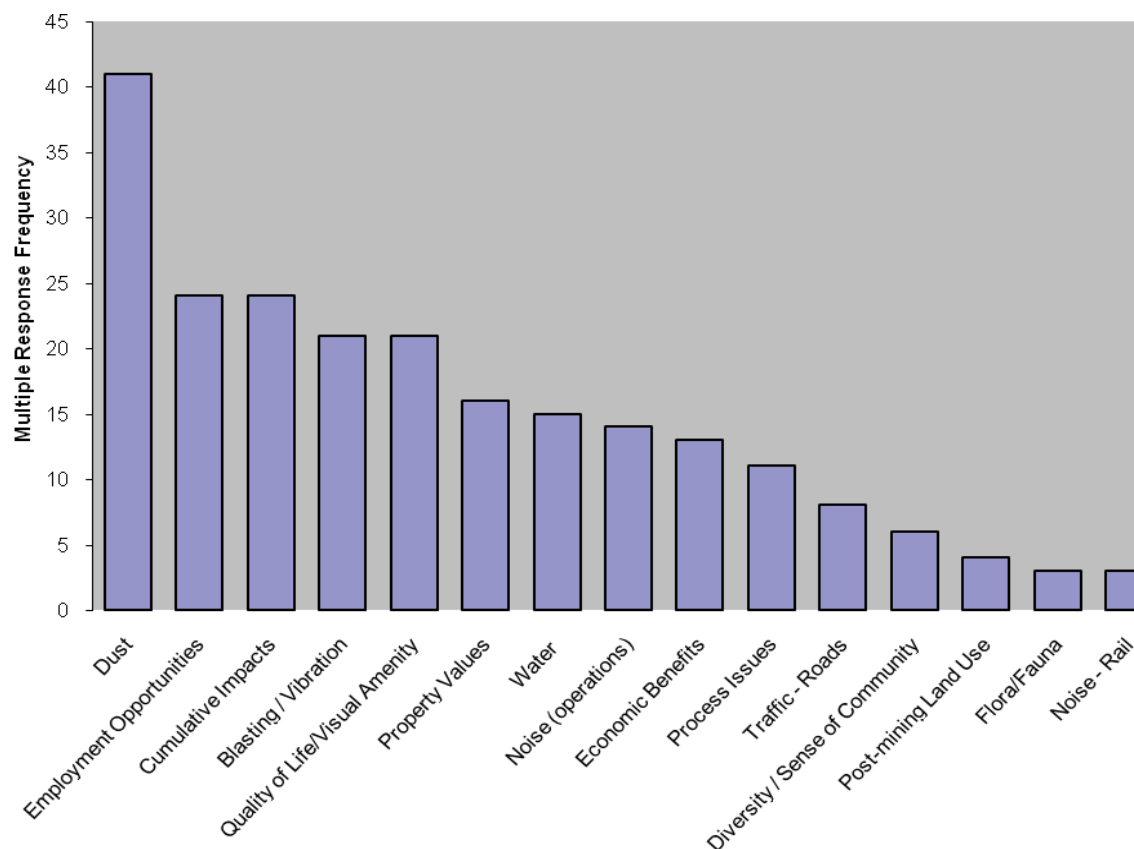
In total, 99 nearby residents / landholders and 72 service providers were consulted.

Social Assessment Methods

The full range of methods and mechanisms were used to collect, communicate and disseminate information about the proposal. These included, but were not limited to, secondary data review, analysis of social indicators, personal interviews with landholders / near neighbours and service providers, delivery of three project information sheets, two community information days, media releases, Interconnectivity Analysis (assessment of the interconnectedness of issues/impacts associated with the Project) and population impact modelling.

Current Community Attitudes towards the Project

Landholder consultation was undertaken during January and February 2009, and the following figure illustrates the key issues that were identified during the engagement process. The five most frequently raised issues were dust, employment opportunities, cumulative impacts, blasting / vibration and quality of life / visual amenity. It should be noted, however, that all issues raised were considered important to those consulted.



Resident/Landowner issues themes associated with the Project identified through engagement (as at 27 Feb 2009)

Workforce Impacts - Population Change Projections

Construction Phase

The construction phase workforce is estimated to peak at 240 workers at any one time. The construction workforce is expected to be at its peak during the years 2013 and 2014.

Previous work carried out by Coakes Consulting has found that in rural or remote locations, given the specialized nature of construction, an approximate benchmark of 20% of a construction workforce tends to be recruited locally. Therefore, this current assessment assumes that 80% of the construction workforce (192) will be sourced from outside the local area, with a further 48 construction personnel sourced locally, and the construction workers will not be accompanied by their families.

To assess potential strains on temporary accommodation, a survey of temporary accommodation availability and capacity was undertaken with 31 accommodation providers in Muswellbrook, Singleton and Scone. Outcomes of the temporary accommodation service provider survey revealed that an approximate *minimum* of 283 rooms in the area is estimated to be available at any one time to accommodate the potential peak influx of 192 construction workers related to the Project.

Operational Phase

There are approximately 1,000 full-time equivalent personnel currently employed across the Mt Arthur Coal's operations as employees and contractors. As part of the already approved Mt Arthur Underground, current operations and the Project, Mt Arthur Coal anticipates a workforce of up to 2,600 at peak production. This represents an increase of 1,610 personnel in addition to the current workforce. Of this 1610, 720 personnel are directly attributable to this Project.

Since 2002, Mt Arthur Coal has had a local recruitment policy that aims to maximise employment in the local area. The company provided data on the last 220 positions recruited which shows that 80% of new employees were recruited from the local area and only 20% of employees were recruited from outside the local area. The majority of those recruited from outside the local area were professional or specialist roles that could not be filled from the local workforce.

Given that Mt Arthur Coal intends to continue their local recruitment policy, it is probable that 80% of the new operational workforce will be recruited locally and only 20% recruited from outside the region. Therefore, the current assessment has shown both a 'Low Impact Case' of 80:20 scenario in addition to the 'High Impact Case' of 20:80 scenario typically seen with companies that do not have a local recruitment policy. Both scenarios are presented.

- **Scenario A – Project-specific workforce influx:**
 - Low Impact Case: Assumes influx of 144 new personnel into the local area (20% of 720 proposed new personnel additions into the current workforce); and
 - High Impact Case: Assumes influx of 576 new personnel into the local area (80% of 720 proposed new personnel additions).
- **Scenario B – Peak workforce influx resulting from Mt Arthur Coal's overall growth activities across its operations combined:**
 - Low Impact Case: Assumes influx of 322 new personnel into the local area (20% of 1,610 proposed new personnel additions to the current workforce); and
 - High Impact Case: Assumes influx of 1,288 new personnel into the local area (80% of 1,610 proposed new personnel additions).

While the High Impact Case scenario for Scenario B might seem substantial, these figures reflect anticipated *peak* workforce additions associated with overall growth activities across Mt Arthur Coal's combined underground and open cut operations. Therefore, this peak workforce influx is unlikely to enter the region concurrently, but rather over a period of time in line with a gradual operational ramp-up.

Unlike the construction workforce, it is assumed that operational employees will be accompanied by their families given the long-term nature of the Project's operational phase. The following tables present the predicted family impact according to the likely preferred residential locations of Mt Arthur Coal's new personnel. As illustrated, significant population impacts are likely to be experienced in Muswellbrook, with the Project-specific workforce influx (Scenario A) likely to result in a potential minimum influx of 186 new community members into Muswellbrook (with a High Impact Case scenario influx of 746 new residents); while the influx associated with Mt Arthur Coal's overall growth activities influx is likely to result in a minimum addition of 417 new community members into the town (with a High Impact Case scenario influx of 1,666).

Predicted Family Population Impact by Town - Scenario A (Project Specific Workforce Influx)

Town	Scenario A –Project-Specific Workforce Influx			
	Scenario A –Low Impact Case (20% workforce influx)	Scenario A – Family Level Impact	Scenario A – High Impact Case (80% workforce influx)	Scenario A – Family Level Impact
Muswellbrook	53	186	213	746
Singleton	39	136	156	546
Scone	16	55	63	220
Aberdeen	10	35	40	140
Other towns	26	91	104	364
Total	144	503	576	2,016

Source: Coakes Consulting (May 2009)

Predicted Family Population Impact by Town - Scenario B (Workforce influx from Mt Arthur Coal's overall growth activities across operations)

Town	Scenario B– Workforce influx from Mt Arthur Coal's overall growth activities across operations			
	Scenario B –Low Impact Case (20% workforce influx)	Scenario B – Family Level Impact	Scenario B – High Impact Case(80% workforce influx)	Scenario B – Family Level Impact
Muswellbrook	119	417	476	1,666
Singleton	87	304	348	1,218
Scone	35	124	142	497
Aberdeen	23	79	90	315
Other towns (across the region)	58	203	232	812
Total	322	1,127	1,288	4,508

Source: Coakes Consulting (May 2009)

Information relating to service capacity and facility thresholds were obtained through the local service provider surveys undertaken across the key towns of Muswellbrook, Singleton and Scone localities (March-April 2009). This information was analysed in conjunction with the current Mt Arthur Coal workforce projections to provide a baseline understanding of current service capacity in accommodating the projected population increase within the local area. Key outcomes of this analysis have revealed the following:

- Further pressure is likely to be placed on health services in the area.
- Local schools / education institutions will have the capacity to handle an increase in local population.

- Most of the childcare services surveyed are currently running either at, or very close to, capacity and any further population growth is likely to add strains to existing childcare services.
- Given current initiatives in further housing development in the local area, there is likely to be sufficient accommodation to house Mt Arthur Coal's projected number of new production personnel.

Cumulative Impact Assessment

At the time of developing this report, Xstrata Mangoola commenced its Early Works Program, which involved preparing the site and surrounding infrastructure for its project construction stages. To date, no construction or mining activities have commenced, although it is likely that on-site construction will start towards the end of 2009 upon completion of the Early Works Program.

Information provided by Xstrata suggests that the peak construction workforce of 350 is likely to occur in the year 2011, with operations commencing shortly after. Given that construction for the Project is not expected to commence until 2012, it is unlikely that there would be any cumulative construction workforce impacts imposed on the local area, particularly on key service sectors such as the temporary accommodation service providers. However, from the year 2019, both Mt Arthur Coal and Xstrata's peak production phases are likely to coincide.

The following table estimates the number of total new residents associated with both the Mt Arthur Coal and Mangoola Projects, during the period in which peak operations for both these Projects are expected to coincide.

Estimations of Mt Arthur Coal and Mangoola's Peak Operational Workforces to enter the Muswellbrook LGA

	Mt Arthur Coal Operations	Mangoola Operations	Total Mt Arthur Coal and Mangoola Peak Operations Coinciding
Low Impact Case: Workforce entering the <u>region</u> (20% of peak workforce influx)	322	60	382
High Impact Case: Workforce entering the <u>region</u> (80% of peak workforce influx)	1,288	240	1,528
Low Impact Case: Workforce entering <u>Muswellbrook</u> (37% of total workforce entering the region)	119	22	141
High Impact Case: Workforce entering <u>Muswellbrook</u> (37% of total workforce entering the region)	476	89	565

Source: Coakes Consulting (April 2009)

The following table shows the predicted cumulative family impact for the Muswellbrook LGA.

Predicted Cumulative Family Population Impact in Muswellbrook

	Mt Arthur Coal Operations	Mangoola Operations	Total Mt Arthur Coal and Mangoola Peak Operations Coinciding
Projected Family Distribution (Low Impact Case)	417	77	494
Projected Family Distribution (High Impact Case)	1,666	311	1,977

Source: Coakes Consulting (April 2009)

The potential cumulative impacts of the Mt Arthur Coal and Mangoola Projects on the Muswellbrook LGA include:

- Potential strains on health services in the Muswellbrook LGA if increases in resources, in line with the predicted increase in residents, are not provided;
- Potential constraints on existing and long-term residential land availability, unless effective planning processes are in place to assist the Shire in progressively phasing in new residential land applications in accordance with company plans associated with the influx of new production personnel;
- There is likely to be sufficient capacity in existing primary education services to accommodate the High Impact Case addition of 281 primary school-aged children;

- There is likely to be sufficient capacity to accommodate a High Impact Case influx of an additional 180 secondary school aged students into the Muswellbrook LGA; and
- Majority of existing childcare services across the Muswellbrook LGA, are running at, or close to, capacity and are therefore unlikely to be able to accommodate an additional 183 young children (0 – 4 years) in the Shire.

Strategies for Impact Management and Monitoring

Mitigation strategies are processes, programs or plans designed to address the perceived issues and impacts stakeholders have raised during the assessment program. The key mitigation strategies recommended include:

- Participate in committees that aim to address cumulative impacts of mining in Muswellbrook;
- Formalise engagement with local education institutions and monitor the effectiveness of the local recruitment program;
- Undertake a strategic review of Mt Arthur Coal's community investment program and align investment to company business drivers and areas of greatest community need;
- Give consideration to working in collaboration with industry and Government on relevant road safety initiatives;
- Formalise a program of regular engagement with people who reside in the Zone of Affection and produce a community information fact sheet on what it means to reside in a Zone of Affection;
- Seek input from local community members for the annual updating of the Mt Arthur Coals' community relations plan.

1.0 Introduction

Hunter Valley Energy Coal Pty Limited (HVEC), a wholly owned subsidiary of BHP Billiton, operates the Mt Arthur Coal Mine Complex (Mt Arthur Coal). Mt Arthur Coal includes the combined operations of the Mt Arthur North Mine (MAN), the Bayswater No. 2 Mine, Bayswater No. 3 Mine, South Pit Extension and the Mt Arthur Underground Project (MAU). Mt Arthur Coal is located south west of Muswellbrook, off Thomas Mitchell Drive in the Muswellbrook Shire Council (MSC) Local Government Area (LGA) in the Upper Hunter Valley of NSW.

HVEC is applying for a new Project Approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to gain a single, contemporary planning approval for its open cut operations and the mining of additional areas within Mt Arthur Coal's current Mining Leases (ML) (the Project).

Coakes Consulting Pty Ltd has been engaged by Mt Arthur Coal to undertake the social assessment and community engagement program associated with the Project. This report examines the socio-economic issues associated with the Project and summarises the key outputs of the program undertaken to date.

2.0 Project Description

The current Mt Arthur Coal Complex consists of the following approved mining areas:

- Bayswater No. 2 open cut pit (extraction completed);
- Bayswater No. 3 open cut pit (operated since 1995);
- Mt Arthur North (MAN) open cut pit (operated since 2001);
- South Pit Extension open cut pit (approved in 2008 – extends the MAN South Pit 2.5 km south);
- Exploration Adit (commenced operations in 2007); and
- Mt Arthur Underground Project (MAU) (approved in December 2008).

Mt Arthur Coal currently has approval to produce up to 28 Million tonnes per annum (Mtpa) of run-of-mine (ROM) coal from the combined complex of which 8 Mtpa is from underground mining methods.

Mt Arthur Coal's open cut mine currently operates under four different development consents with over 790 consent conditions. Given this complexity, the Project proposes to combine these development consents into a single, contemporary planning approval for its open cut operations, as well as gain approval to access further coal reserves located within the current mining lease boundary as part of Mt Arthur Coal's long term growth plans.

Approval for the Project will provide Mt Arthur Coal with the flexibility to respond to changing external market conditions and technical mining constraints into the future. Specifically, the Project comprises the following:

- Consolidation of all of Mt Arthur Coal's open cut mining related planning approvals into one contemporary Project Approval;
- Extending the mine footprint to uncover additional coal reserves within the current MLs;
- Increasing the Mt Arthur Coal complex approved production by 8 Mtpa up to 36 Mtpa ROM coal. This will be achieved by;
 - Increasing open cut coal production by up to 8 Mtpa; and
 - Having the flexibility to increase either open cut or underground production by an additional 4 Mtpa if the maximum production from either underground or open cut methods is not being met.
- Relocating a section of Edderton Road in approximately 2019;

- Upgrading the existing Coal Handling Preparation Plant (CHPP) to wash up to 36 Mtpa of ROM coal, and allow the inclusion of an ultra-fine coal circuit to re-process fines, which will facilitate increased resource recovery and reduce water demand;
- Increasing the approved rail haulage capacity (in line with the increased ROM coal production) from 19 Mtpa to 27 Mtpa, with the construction of a second rail load out facility and associated conveyor system;
- Modifications to existing infrastructure (such as workshop and bath house), construction of additional ROM coal hoppers and the extension of ROM and product coal stockpiles; and
- A total workforce of approximately 2,600 at peak production, which represents an increase of approximately 1,610 from current staffing levels and an estimated additional 720 positions directly attributable to the Project.

No changes to the mining method or hours of operation are proposed, although a gradual increase in the mobile equipment fleet will be required. Refer to Appendix 1.

3.0 Social Impact Assessment and Community Engagement Methodology

3.1 Overview

Mt Arthur Coal has always had a strong commitment to undertaking best practice social assessment and stakeholder engagement, as part of the original MAN development approval and subsequent extension programs. These programs have involved extensive engagement with local landholders and key stakeholders in the Muswellbrook area.

On approval of the original MAN Project, the company committed to the employment of a dedicated resource to undertake community relations activities. Given the approach adopted as part of the original assessment program, and subsequent commitment by the company in maintaining ongoing community relations, the past 10 years has seen effective relationships developed with local landholders and community members in the local area, particularly within the Muswellbrook locality.

The social assessment and community engagement program for the Project builds on the social assessment program undertaken previously for the MAU Project. The engagement program has been structured as a continuation of the dialogue with stakeholders which was originally established during the MAN Project and further enhanced by the Mt Arthur Coal community / environmental team as the operation has continued.

Specifically, the social assessment and engagement program has the following objectives:

- To assess the direct and indirect effect of the Project on communities within the area, particularly those communities within the Shire of Muswellbrook, and beyond as required;
- To assess the compatibility of the Project with community values and existing land uses;
- To identify the primary and higher order social impacts associated with the Project;
- To assess the impacts of the Project on services, facilities and infrastructure provision in the locality;

- To initiate and maintain open communication / engagement with key stakeholders and the community on all aspects of the Project;
- To identify and document stakeholder / community issues and concerns in relation to the Project; and
- To proactively respond to and work with key stakeholders, the community and other interested parties to develop appropriate solutions and strategies to minimise negative impacts and enhance the positive impacts associated with the Project.

3.2 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).

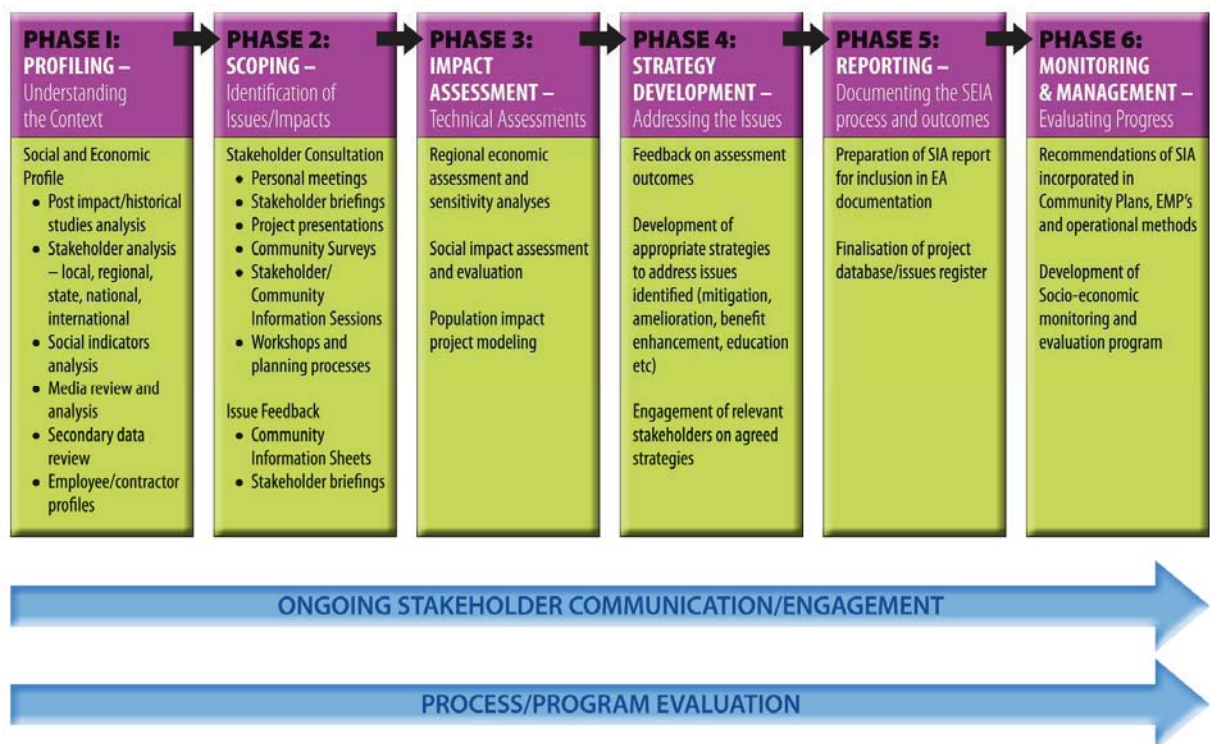
Vanclay (2003), building on Armour's categorisation, has identified social impacts as changes to one or more of the following:

- **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 for the Project has a number of phases, as illustrated in Figure 3.1 below:

- **Profiling** to better understand the community and obtain baseline information;
- **Scoping** to identify stakeholder issues / impacts associated with the Project;
- **Assessment** of potential issues / impacts, and prediction of the likely socio-economic effects associated with the Project;
- **Strategy Development**, that is, working with the community to develop appropriate strategies to address the issues raised;
- **Reporting** and documenting outcomes of the social impact assessment; and
- **Monitoring and Management** of the issues through the life of the Project.



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Figure 3.1: Phased approach to Social Impact Assessment

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 managed effectively to produce the minimum degree of social disruption to those affected; while maximising/enhancing the positive impacts that may be experienced due to the presence of the Project.

Monitoring is also a key component of the social impact assessment process and a program should be developed and integrated with the company's current engagement activities, to identify deviations from the proposed action, and to document any unanticipated positive or negative impacts that may arise in the implementation / operational phase of the Project.

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.

As part of the Project assessment and community engagement program, residents living in close proximity to Mt Arthur Coal's operations were consulted. The full range of methods and mechanisms used to collect, communicate and disseminate information about the Project are summarised in the table below. Examples of mechanisms included personal interviews, letterbox drops of information regarding the proposed Project and community information sessions.

Table 3.1: The Social Impact Assessment Phases, Task & Description

	Objective	Mechanism	Description
Phase 1	To better understand the community and obtain baseline information	Secondary Data Review Social Indicators Analysis	Development of a profile of the social context in which the Project is based.
Phase 2	To obtain an appreciation of community issues and concerns in relation to the Project and more broadly within the locality. To identify possible strategies/solutions for addressing the issues raised to inform Project design and planning and Phase 4 Strategy Development.	<i>Project Update Feb 09 "Outline of the proposal"</i> Personal interviews with Landowners within and immediately adjacent to the Project Area Telephone interviews with service providers e.g. accommodation, education and health. <i>Project Update May 09 "Issues Feedback"</i> Project Media Releases - to inform the wider Muswellbrook community	Consultation with landholders / near neighbours to the Project. Consultation with service providers to inform population impact modelling and identify impacts on service provision
Phase 3	To assess which issues are most significant to the community and / or particular groups	Issue Assessment and Evaluation	Internal assessment of issues, impact evaluation and prediction : <i>Interconnectivity Analysis</i> – assessment of the interconnectedness of issues/impacts associated with the Project <i>Population Impact Modelling</i> - prediction of population change across key service sectors.
Phase 4	To develop appropriate strategies to address the issues raised To ensure that the community is informed of assessment outcomes and has the opportunity for further feedback	Impact Strategy Development Two Community Information Sessions Personal interviews with Landowners within and immediately adjacent to the Project Area Community Feedback, including <i>Project Update 3 – "Assessment Outcomes and Strategies"</i>	Involvement of relevant stakeholders in strategy development. Feedback and validation of social and environmental assessment outcomes through appropriate mechanisms.

	Objective	Mechanism	Description
Phase 5	To ensure that the social assessment program and outcomes are documented for consideration in the planning process	Final Reporting	Development of SIA report for inclusion in the Environmental Assessment document.
Phase 6	To determine whether our predictions were correct through monitoring social impacts of the Project over time	Monitoring and Management Ongoing community feedback of monitoring data via Mt Arthur Coal's <i>Community Matters</i> publication	Incorporation of relevant indicators as part of existing social monitoring and provision of recommendations for ongoing engagement and investment planning.

Source: Coakes Consulting (2009)©

Where possible, data / information have been collected using a range of methods and techniques. This approach, referred to as 'triangulation' is used to account for some of the problems inherent in the use of single methods, and to address issues associated with data reliability and validity. It also assists in facilitating involvement of different individuals and groups.

As identified in Figure 3.1, stakeholder engagement has taken place at key stages of the Social Impact Assessment Program (Phases 2 and 4). This has included:

- **Personal interviews** (January 2009 to present) – The aims of personal interviews were to deliver Project information and identify potential Project impacts (both positive and negative), as well as to obtain the views and perceptions of stakeholders in and around the Project Area and the broader community
- **Service Provider Surveys** (March 2009) - in the Muswellbrook, Singleton, and Scone Townships to identify current capacities of key service sectors in accommodating a potential workforce influx associated with the Project; and
- **Community Information Sessions** – two community information sessions outlining key findings of the impact assessment for further feedback and community comment (May 2009).

Approximately 100 near neighbours were offered a personal interview as a part of the engagement program. Meetings with some neighbours were held on more than one occasion. The following table outlines the number of nearby residents / landholders who were engaged with as part of the current Program, and the method of that engagement:

Table 3.2: Nearby Residents Consulted

Area / Locality	Personal Interview	Letterbox Drops of Project Information Sheets	Total Informed/ Consulted
Denman Rd West	15	7	22
Roxburgh	14	7	21
South Muswellbrook	5	8	13
Racecourse	7	16	23
Antiene	5	10	15
Golden H'way	2	1	3
Sheppard Ave	0	2	2
TOTAL	48	51	99

Source: Coakes Consulting (2009)

In addition, key service sector providers that took part in the SIA included:

Table 3.3: Key Service Provision Sectors Consulted

Service Sector	Muswellbrook	Singleton	Scone	Total Surveyed
Temporary Accommodation	15	7	9	31
Primary Schools	9	5	2	16
High Schools	2	1	1	4
Health / Specialist	2	3	2	7
Childcare	5	5	4	14
TOTAL	33	21	18	72

Source: Coakes Consulting (2009)

3.3 Economic Impact Assessment

The economic impact assessment for the Project has been undertaken by Gillespie Economics and can be found in Appendix O of the Environmental Assessment for the Project.

4.0 Social Profile

The social profile provides an overview of the social context in which the Project is based. This profiling phase is a valuable and important component of the social assessment process as it provides key insight into important attributes of the area and its communities and assists in identifying key stakeholders who might have an interest in the Project. The profile is also useful in identifying relevant community issues that may be further explored during the scoping phase of the social assessment program.

Building on the profile initially developed for the MAU social assessment program, the social profile presents a socio-economic and demographic snapshot of the Muswellbrook LGA, including way of life, community issues and needs. The socio-economic and contextual changes that have taken place in the area following development of the initial MAN mine Project and since the MAU assessment program are also highlighted. Locality profiles for the Singleton and Scone townships are also discussed, as these areas have been noted as key residential localities for the Mt Arthur Coal workforce.

4.1 Geographic Location and Governance

4.1.1 Local Governance

Muswellbrook Local Government Area

The Mt Arthur Coal Complex is located within the Local Government Area (LGA) of Muswellbrook, which is located in the Upper Hunter Valley of NSW. Muswellbrook covers an area of approximately 3400 square kilometres and has an estimated population of approximately 15,000 people. The Project location is presented in Figure 4.1.

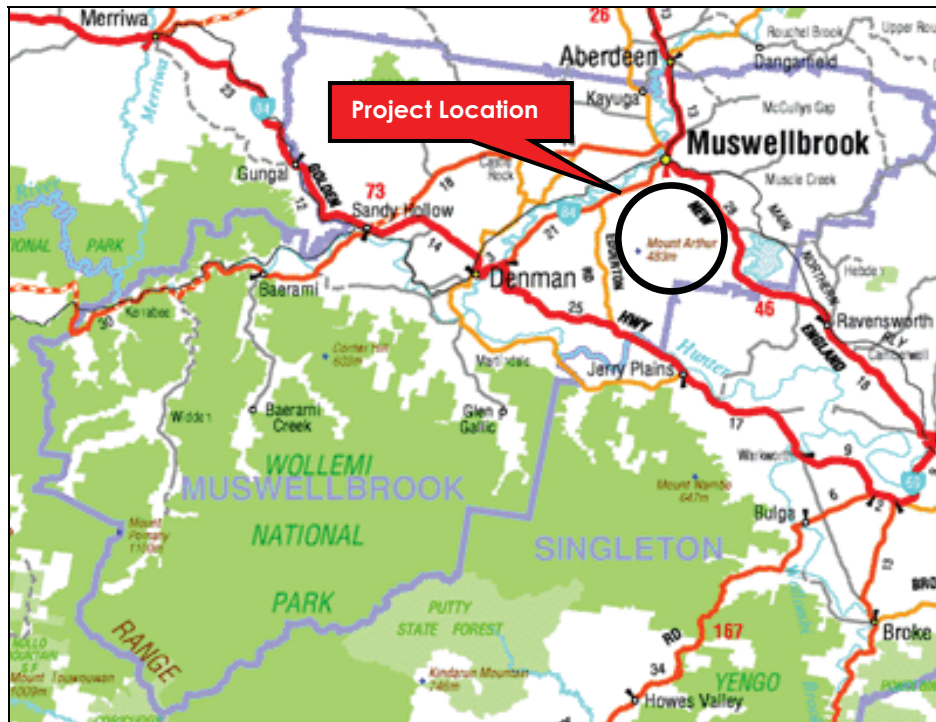


Figure 4.1: Local Government Boundaries of Muswellbrook

Source: NSW Department of Local Government

The main residential and commercial centre of the Shire is the Muswellbrook Township. Denman and Sandy Hollow are the two other significant areas of settlement among a number of small outlying rural communities. Other localities¹ in the Muswellbrook Shire include those presented in Table 4.1.

Table 4.1: Localities within the Shire of Muswellbrook

Alcheringa	Antiene	Arrowfield	Baerami
Baerami Creek	Baerami South	Bengalla	Bureen
Castle Rock	Coxs Gap	Dalswinton	Dangar
Dartmouth	Denman	Dunbars Creek	Edderton
Edinglassie	Esdai	Giants Creek	Glen Gallic
Grass Tree	Hollydeen	Horseshoe	Horton Park
Jerrys Plains	Kayuga	Kerrabee	Koolbury
Liddell	Mangoola	Manobalai	Markertown
Martindale	McCullys Gap	Mount Dangar	Mount Rest
Muscle Creek	Muswellbrook North	Muswellbrook South	Myambat
Oakleigh Stud	Old Yarrowa	Pickering	Piercefield
Richmond Grove	Rosemount	Roxburgh	Sandy Hollow
The Horseshoe	Widden	Widden Valley	Wybong
Yarrowa			

¹ A locality is defined by the ABS as a population cluster of between 200 and 999 people.

The Muswellbrook Shire Council is responsible for local service provision within the Muswellbrook LGA, 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.

Singleton Local Government Area

Singleton is the main township located within the Singleton Local Government Area (LGA) in the centre of the Hunter Valley region, 200 kilometres north west of Sydney and 80 kilometres inland from Newcastle. The Singleton LGA has a population of approximately 22,000 people and is 4893 square kilometres in size. The Singleton LGA falls within the Hunter Councils Region. The Hunter Councils is an incorporated body comprising 12 member Councils within the Hunter Region. These LGAs are listed in the Table below.

Table 4.2: Local Government Areas in the Hunter Councils Region

Cessnock	Dungog	Gloucester	Great Lakes
Lake Macquarie	Maitland	Muswellbrook	Newcastle
Port Stephens	Singleton	Upper Hunter	Greater Taree

Source: www.huntercouncils.com.au (information retrieved August 2009)

The Singleton LGA is bounded by the Upper Hunter Shire in the north, Dungog Shire and Maitland City in the east, Cessnock and Hawkesbury Cities in the south, Rylstone Shire in the south west and Muswellbrook Shire in the west.



Figure 4.2: Local Government Boundaries of Singleton

Source: NSW Department of Local Government

Localities in the Shire of Singleton are presented in Table 4.3.

Table 4.3: Localities within the Shire of Singleton

Appletree Clearing	Appletree Flat	Archerfield Estate	Baxter Junction
Belford	Big Ridge	Bowmans Creek	Box Tree Clearing
Branxton	Bridgman	Broke	Bulga
Camberwell	Carrowbrook	Caswell	Clydesdale
Combo	Comleroi	Dalwood	Darlington
Dawsons Hill	Dellhurst	Dights Crossing	Doyles Creek
Dunolly	Dural	Dyrring	Elderslie
Falbrook	Fern Gully	Fern Hill	Fordwich
Garland Valley	Glendon	Glendon Brook	Glennies Creek
Glenridding	Goorangoola	Gouldsville	Gowrie
Greenland	Gum Tree Hole	Hambledon Hill	Hebden
Howes Valley	Howick	Huntermview	Ingar
Jerrys Plains	King Junction	Kings Cross	Lambs Creek
Lambs Valley	Leconfield	Lemington	Liddell
Loders Creek	Long Point	Lower Belford	Lucernia
Maison Dieu	Mcdougalls Hill	Middle Falbrook	Milbrodale
Minimbah	Mirannie	Mitchells Flat	Mount Olive
Mount Pleasant	Mount Royal	Mount Thorley	Nundah
Obanvale	Owendale	Paynes Crossing	Pokolbin
Putty	Radfordslea	Raspberry Clear	Ravensworth
Redbournberry	Redmanvale	Reedy Creek	Rixs Creek
Rothbury	Roughit	Scotts Flat	Sedgefield
Singleton	Singleton Heights	Singleton Military Camp	Singleton South
St Clair	Stanhope	Three Ways	Wambo
Wambo South	Warkworth	Wattle Ponds	Westbrook
Whittingham	Wollemi	Wylies	

N.B. The suburbs of Jerrys Plains and Liddell are across both the shires of Muswellbrook and Singleton.

Upper Hunter Local Government Area

The town of Scone is located approximately 23 kilometres north of Muswellbrook, 13 kilometres north of Aberdeen, and 280 kilometres north of Sydney. The Scone locality covers an area of 4027 square kilometres and has a population of approximately 9,700 people spread over the two major urban centres of Scone and Aberdeen.

In 2004, the Scone Shire Council was integrated with the former Murrurundi and Merriwa Shire Councils to form the Upper Hunter Shire Council. The Upper Hunter Shire now spans 8,060 square kilometres with a population of almost 14,000 and is bounded by Liverpool Plains Shire and the Tamworth Regional Council area in the north; Gloucester and Dungog Shires in the east; the Singleton Council area and

Muswellbrook Shire in the south; and the Mid-Western Regional Council area in the west.

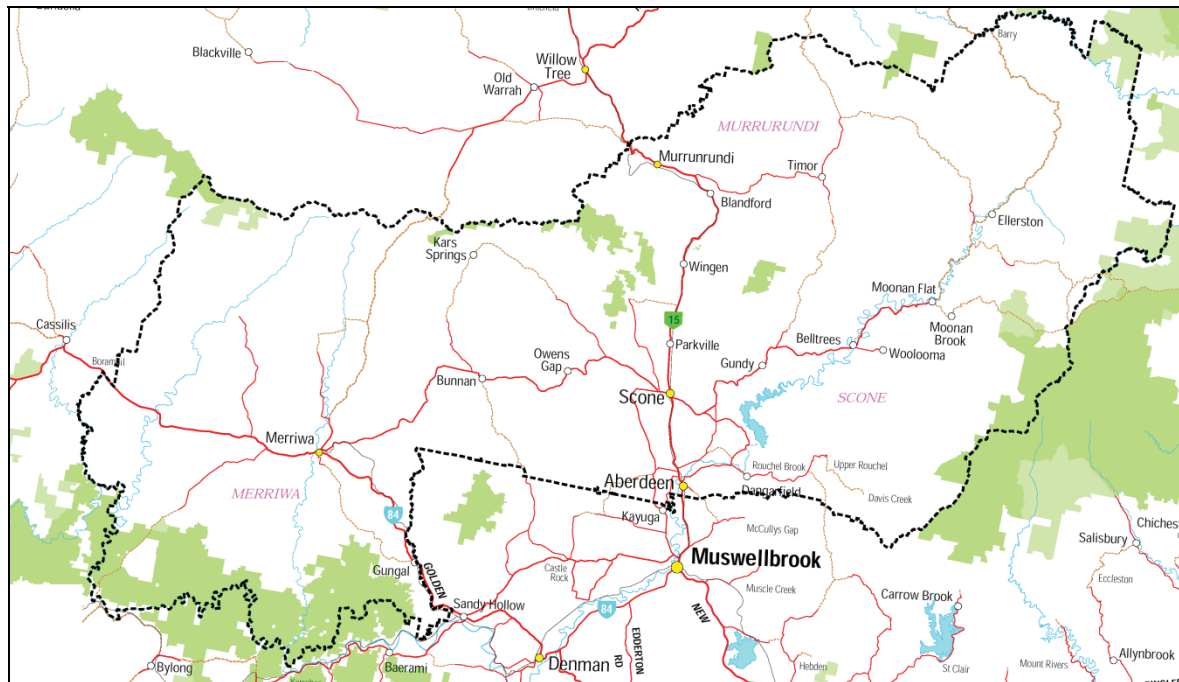


Figure 4.3: Upper Hunter Shire LGA Boundary

Source: Department of Lands

Localities in the Upper Hunter Shire are presented in Table 4.4.

Table 4.4: Localities within the Upper Hunter Shire

Aberdeen	Belltrees	Blairmore	Blandford
Bow	Brawboy	Brushy Hill	Bunnan
Cassilis	Clifflands	Crawney	Cuan
Dangarfield	Dartbrook	Dartbrook Upper	Dry Creek
Ellerston	Glenbawn	Glenbawn Dam	Glenrock
Green Creek	Gunndibri	Gundy	Hunter Springs
Kars Springs	Kingdom Ponds	Lake Glenbawn	Merriwa
Middlebrook	Moobi	Moonan Brook	Moonan Flat
Murrumbidgee	Murulla	Murulla North	Niangala
Omadale	Omadale Brook	Owens Gap	Pages Creek
Pages River	Parkville	Red Bank	Ridgeland
Rossgole	Rouchel	Rouchel Brook	Sandy Creek
Satur	Scone	Scotts Creek	Segenhoe
Sparks Creek	St Aubins	Stewarts Brook	Stirling Vale
Thompsons Creek	Thornthwaite	Timor	Tinagroo
Togar	Tomalla	Tooloogan	Turanville
Turill	Upper Rouchel	Waverley	Waverly
Wingen	Woolooma	Yarramoo	

4.1.2 State Governance

The Muswellbrook LGA, Singleton LGA and Upper Hunter LGA lie within the Upper Hunter State Electorate which is 30,287 kilometres square and comprises the local governments of: Dungog, Gloucester, Muswellbrook and Upper Hunter, and parts of Cessnock, Great Lakes, Liverpool Plains, Mid-Western Regional and Singleton.

The Member for the Upper Hunter State Electoral district is George Souris of the National Party who has held the seat since 1988. Figure 4.4 outlines the State electorate boundaries.

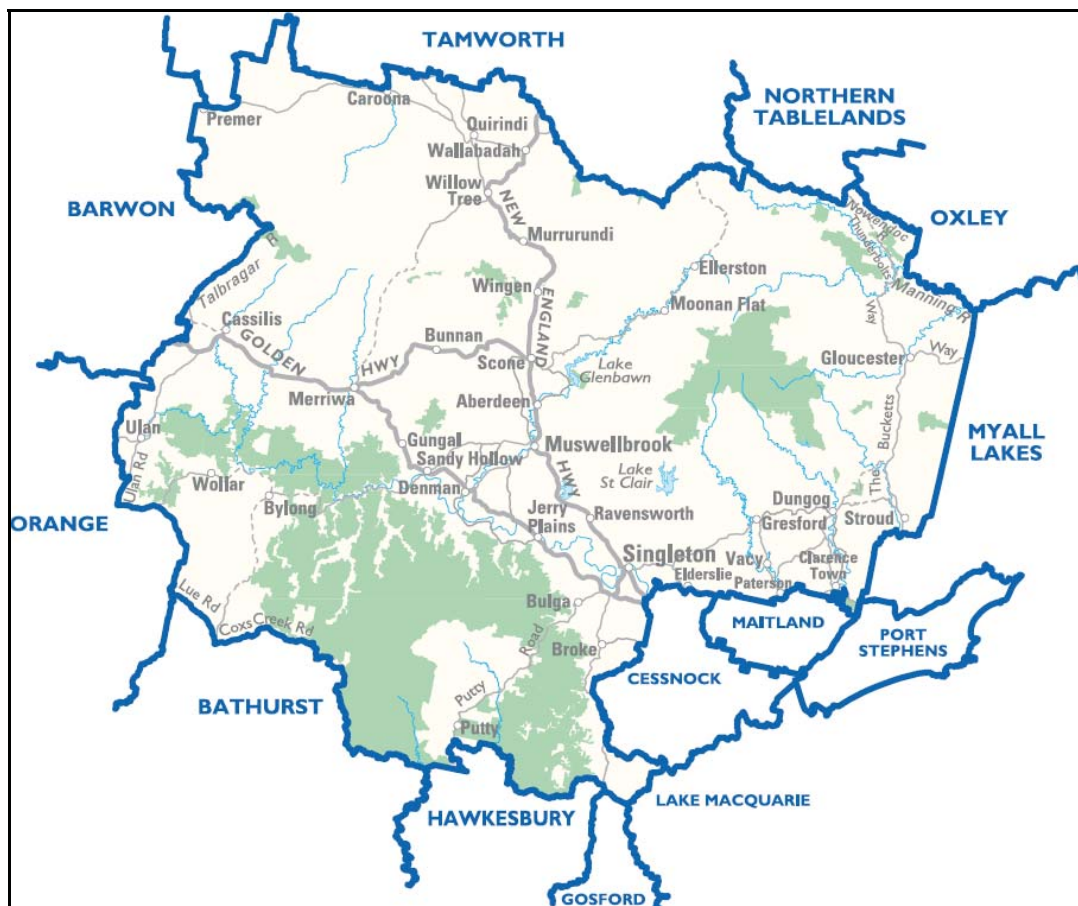


Figure 4.4: Upper Hunter State Electoral District

Source: http://www.elections.nsw.gov.au/data/assets/pdf_file/33414/Upper_Hunter.pdf

4.1.3 Federal Governance

All of the Shires of Muswellbrook, Singleton and the Upper Hunter are located in the Federal electorate of Hunter which is 10,593 square kilometres in size and is also comprised of the main towns of Cessnock, Maitland, and Kurri Kurri.

The Hunter has been represented by Joel Fitzgibbon of the Australian Labor Party since 1996. The electorate's economic base is diverse and comprises agriculture, viticulture, horse studs and heavy industry, such as coal mining, aluminium smelting and electricity generation. Figure 4.5 outlines the Federal electorate boundaries.



4.2 Local Industry Activities

4.2.1 Coal Mining

Australia is the world's largest exporter of coal, with mines in the Hunter Region the largest exporters of coal in the State. As shown in the following map, the Hunter region is one of five major coalfields within the Sydney-Gunnedah Basin, extending from the south of Wollongong to the north of Newcastle, and north westerly through Narrabri into Queensland.

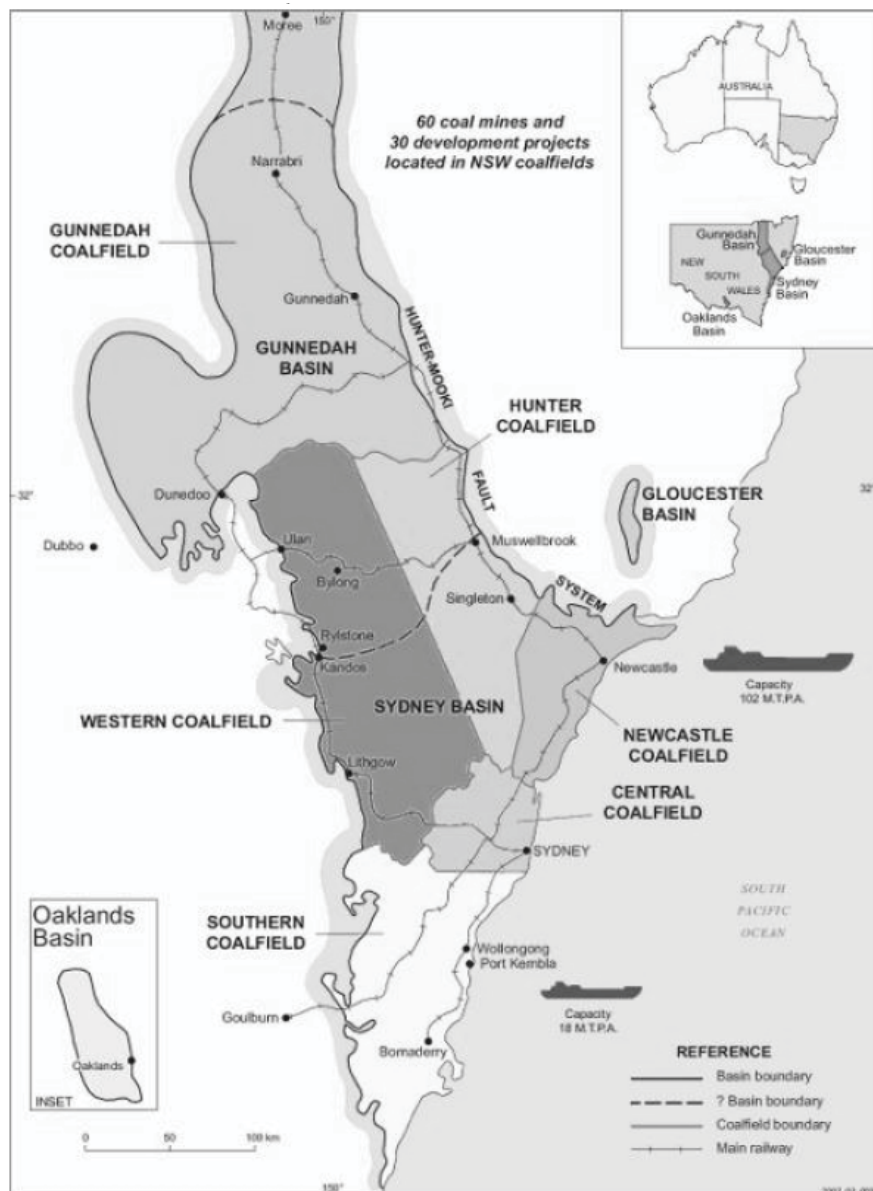


Figure 4.6: Location of Coal Reserves in NSW

Source: NSW Department of Primary Industries, *Coal Industry Profile*, 2008

During 2006 - 07, a total of 76.3 million tonnes were exported from the Hunter, Gunnedah and Newcastle coalfields, representing a total 78% of all saleable coal production from the State.

As shown in the Figure below, in 2006 - 07, an estimated 69 million tonnes of coal were exported from the Gunnedah and Hunter coalfields. Of this, 56 million tonnes were thermal (or steaming coal); and 13 million tonnes were metallurgical (or coking) coal.

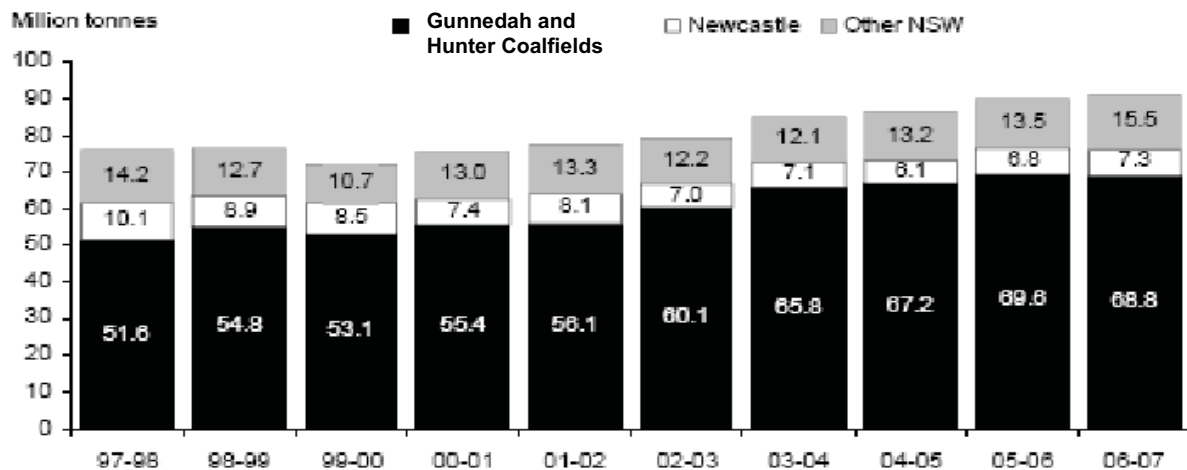


Figure 4.7: Coal Exports from NSW Districts (1997 - 98 – 2006 - 07)

Source: NSW Department of Primary Industries, *Coal Industry Profile*, 2008

Coal exports from NSW were exported to 26 countries in 2006 - 07, with Japan dominating the demand for both thermal (56%) and coking (53%) exports (Hunter Valley Research Foundation, 2008 - 2009). Overall, the export price for all types of coal has risen over the last decade. In 2006 - 07, the free on board (FOB) price of hard coking coal peaked at \$A120/tonne; \$A80/tonne for other metallurgical coal; and around \$A60/tonne for thermal coal.

According to the Hunter Valley Research Foundation (2008 - 2009), the Hunter Coalfield accounts for approximately 41% (5,101 million tonnes) of recoverable coal reserves across NSW. Recent data from the NSW Department of Primary Industries (*Coal Industry Profile*, 2008) reports that in 2006 - 2007, there were 34 mines operating in the Hunter region coal fields - 18 of these were open cut and 16 were underground. Given most of the coal is at a shallow depth, 75% of coal production from the area was from the open cut operations. The largest open cut mines in the Hunter coalfield were the Hunter Valley Operations, Mount Arthur Operations and Mount Thorley Warkworth. Beltana No. 1 was the largest underground producer.

Workforce data from the 2006 ABS Census reports that of the 8,449 people employed in the mining sector in the Hunter region, an overwhelming 81.8% of these worked in the coal mining industry (Hunter Valley Research Foundation 2008 - 09). Specifically, in 2006, the coal mining industry ranked as a top employer in the Cessnock LGA (employing 6.6% of the Shire's total workforce, or a total of 1,188 persons); Muswellbrook LGA (13.8%, 1,102 persons), as well as Singleton (16.5%, 1,704 persons).

Underground mining is typically more costly and labour intensive relative to open cut mining, with saleable coal output per employee from underground mines in the Hunter coalfield coming in at 6.48 tonnes during 2006 - 07. In contrast, saleable coal output per employee from open cut mines totalled 12,740 tonnes during the same period. The following table summarises the value of saleable coal in the Hunter coalfields during the period 2006 - 07.

Table 4.5: Open cut and Underground Coal Production, Hunter Coalfields (2006 - 07)

Mine	Raw (Mt)	Saleable (Mt)
Open Cut mines		
Ashton	2.2	1.3
Bengalla	6.9	5.5
Bulga	8.5	5.6
Camberwell (Integra)	3.5	2.0
Cumnock South	1.4	1.0
Drayton	4.5	4.3
Hunter Valley Operations	14.1	10.6
Liddell	4.5	3.2
Mount Arthur Operations	13.0	11.0
Mount Owen	8.9	5.9
Mount Thorley Warkworth	13.5	9.5
Muswellbrook	1.2	0.9
Narama	4.0	4.0
Rix's Creek	1.9	1.1
Wambo	5.6	4.0
Total Open Cut	93.7	69.9
Longwall underground mines		
Ashton	2.6	2.6
Beltana No. 1	7.2	4.9
Dartbrook	1.0	0.9
Glennies Creek (Integra)	2.6	1.3
Newpac No. 1	1.7	1.2
United	3.1	2.3
Total Longwall	18.2	13.2
Non-longwall underground mines		
Wambo	0.3	0.2
Total non-longwall	0.3	0.2
Total underground	18.5	13.4

Source: NSW Department of Primary Industries, *Coal Industry Profile, 2008*

In recent years the prosperity of the coal industry has continued to grow, as a result of rising coal prices, supply disruptions in other key coal producing nations, as well as an overall increase in demand for coal. Specifically in Muswellbrook, in addition to the Mt Arthur Coal Complex, there are also several other approved coal mine developments which operate within and around the Muswellbrook LGA; some also in close proximity and within viewing distance from the township. These coal developments are included in Table 4.6.

Table 4.6: Other Approved Coal Mine Developments within Muswellbrook LGA

Coal Mine Development	Description
Muswellbrook Coal Company Ltd	- Approved production of up to 1.5 Mtpa of coal - Coal is supplied to export and domestic markets - Open cut mining with operations scheduled for completion around 2013 - Site also has approval for the Sandy Creek Underground Mine
Drayton Mine	- Approved production of 8 Mtpa ROM coal - Coal is supplied to export and domestic markets - Approved mine life to 2017 - Estimated reserves of 45 million tonnes
Liddell Coal	- Located midway between Singleton and Muswellbrook - Approved production of 8 Mtpa ROM coal - Coal is supplied to the export and domestic markets
Bengalla Mine	- Approved production of 10.7 Mtpa ROM coal. Approved mine life until 2017. - Coal is supplied to export and domestic markets
Mt Pleasant Project	- Located adjacent to the Bengalla Mine and approximately 3 km west of Muswellbrook - Development consent was granted in 1999, allowing an open cut operation of up to 10.5 Mtpa of ROM coal - Development consent permits operations until 2020 - Not currently developed
Coal Mine Development	Description
Dartbrook Project	Currently ceased coal production and under 'Care and Maintenance' due to geological difficulties
Mangoola Coal Project (formerly Anvil Hill Project)	- Located near Wybong, approximately 20 km west of Muswellbrook and 10 km north of Denman - Received approval in 2007 to construct and operate an open cut coal mine - Approved to extract and process up to 10.5 Mtpa of coal from the undeveloped coal reserve for a period of 21 years from granting of a mining lease - Construction has recently commenced

Source: Muswellbrook Shire Council (information retrieved April 2009)

The proximity of good quality coal has also ensured that the power generation industry is strong in the Hunter Valley, with Liddell and Bayswater coal-fired power stations generating 40% of the electricity for New South Wales (Macquarie Generation website at <https://www.macgen.com.au>). In addition to generated workforce and employment opportunities in the local area, MSC reported that a substantial proportion of local businesses in the Shire (27% of 88 businesses surveyed) relied predominantly on supporting the coal mining or power generation industries (Muswellbrook Shire Skills Audit, as cited in the ACARP study, 2007).

A survey of mine employees across four operations in the Muswellbrook area, undertaken by Coakes Consulting in 1999 for the MAN mine development proposal, also outlined the extent of benefits for local businesses in the region as a result of workforce household expenditure. Outcomes of the survey indicated that approximately \$13.9 million of annual employee expenditure had the potential to be spent in the Muswellbrook Shire (Muswellbrook and Denman townships), with an additional \$3.4 million in the Upper Hunter Shire (Scone and Aberdeen townships). More recent data from the workforce survey undertaken as part of the MAU social and economic assessment program has revealed that mining employees were likely to make an estimated annual contribution of \$20 million per annum to the broader Hunter Region and NSW.

4.2.2 Agriculture and Viticulture

In addition to coal mining, the Hunter region also has a strong agricultural industry with Scone, Singleton and Muswellbrook supported by dairy and beef farming activities, as well as horse breeding, olive and grape production. In Muswellbrook, approximately 6.1% of the total Shire land area (20,690 hectares) has been classified as prime agricultural land (Muswellbrook Shire Council website, information retrieved 2009).

As an incentive for encouraging further growth in the upper Hunter region's agricultural base, *Crops for Hunter* was developed as a key local government initiative. The initiative has support from the region's coal industry, and is promoting local agricultural diversification through provision of support to local farming businesses in adopting new methods of production / resource and land management.

The Hunter Valley also has a thriving viticulture industry, with Muswellbrook Shire home to several renowned wineries with cellar doors including Two Rivers, Arrowfield Estate, and James Estate. Recent workforce data from the Hunter Valley Research Foundation (2008 - 2009) suggests that the Hunter region's grape and wine production sector generated up to 1,240 direct employment activities, with a further 480 employed full-time in associated activities on grape and wine production properties.

In total, the value of wages and salaries paid by the sector in the Region was estimated to be close to \$73 million, \$48 million of which was directly associated with grape and wine production.

4.2.3 Tourism

The Hunter region's growing tourism industry is fuelled in part by its expansive viticulture industry. In the four years leading up to end-2008, visitors to the Hunter region comprised an annual average of 59% tourists who had travelled to the area for holiday / pleasure purposes (Tourism NSW, 2009).

Approximately 32% of visitors to the Muswellbrook Shire were visiting the area specifically for holiday / leisure purposes (four-year annual average leading up to mid-2007). Most of these visitors tended to reside in hotels / motel accommodation for an average of 1 – 2 nights (Tourism NSW).

Similar trends were also observed in Singleton, where tourists comprised an approximate 38% of the total number of visitors to the town annually. Several temporary accommodation providers, however, have noted a substantial decline in tourist numbers in recent months. Most attributed this declining trend to the current economic climate.

4.3 Socio-Economic Characteristics

This section discusses the statistical profile of the region based on ABS Census data. Comparisons between the current 2006 Census data and earlier 2001 and 1996 data are also reported to identify any key changes in Muswellbrook's socio-economic trends since the earlier MAN mine development project. To provide a comparative baseline, Muswellbrook LGA's socio-economic and demographic trends are compared with that of the Hunter Statistical Division, which includes the LGAs of Upper Hunter, Muswellbrook, Singleton, Cessnock, Maitland, Dungog, Gloucester, Great Lakes, Newcastle, Lake Macquarie, and Port Stephens.

Given workforce trends over time, it has been noted that Mt Arthur Coal employees tend to settle in the townships of Muswellbrook, Singleton and Scone. Therefore, a comparative analysis of ABS data for these residential localities is provided.

4.3.1 Muswellbrook LGA

Population Numbers

In 2006, the Muswellbrook LGA had an estimated resident population of 15,236 with 725 people or 4.8% identifying as Indigenous. Around 1,842 people or 12.1% of the Muswellbrook LGA population in 2006 were born outside of Australia, compared to 31% of the NSW State population.

The Muswellbrook LGA population experienced a significant increase between the Census periods of 2001 – 2006, following a marked decrease between the 1996 – 2001 Census period. This recent increase in Muswellbrook's population may in part be due to an influx of new mining development approvals in the region. For instance, it was during the 2001 – 2006 period that MAN commenced construction and subsequent operational activities.

Medium growth population projections, undertaken by the Hunter Valley Research Foundation (2008 – 2009), have forecasted that the Muswellbrook population will continue to undergo an annual growth rate of 0.81% during the period 2006 – 2026. The following figure demonstrates this trend.

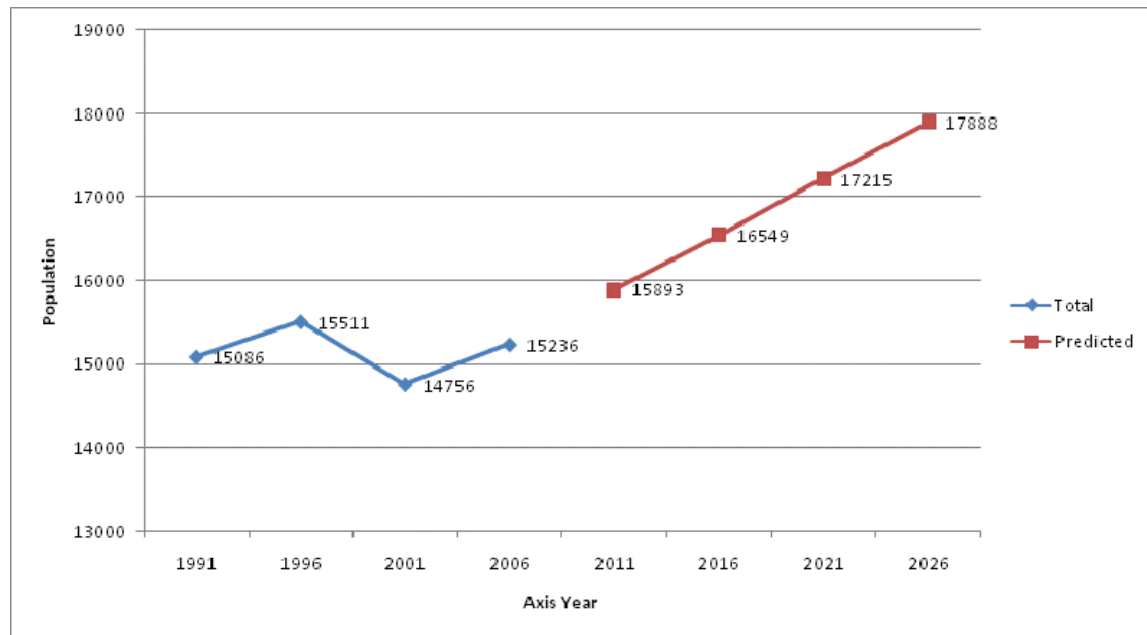


Figure 4.8: Total Population of Muswellbrook LGA Excluding Overseas Visitors: time series 1996; 1999; 2001 and 2006

Source: ABS Census (1996 - 2006) and Hunter Valley Research Foundation (2008-2009)

Age Structure

The median age in the Muswellbrook LGA in 2006 was 34 years, younger than the median age for both New South Wales (37 years) and the Hunter Statistical Division (39 years). Key features of the Muswellbrook LGA compared with the Hunter Statistical Division are provided in Table 4.7 below.

Table 4.7: Selected Characteristics of the Muswellbrook LGA and Hunter Statistical Division

Selected Characteristics	Muswellbrook LGA	Hunter Statistical Division
Total persons excluding overseas visitors	15,236	589,239
Median age	34	39
Median individual income (\$/weekly)	453	394
Median household income (\$/weekly)	1,060	888
Median family income (\$/weekly)	1,213	1,090
Median rent (\$/weekly)	150	180
Median housing loan repayment (\$/monthly)	1,300	1,300
Average household size	2.6	2.5

Source: ABS Census (2006)

The 2006 Census data indicates the Muswellbrook LGA also had a relatively young population compared to the broader Hunter Statistical Division.

Figure 4.9 demonstrates the age structure of Muswellbrook LGA and the Hunter Statistical Division.

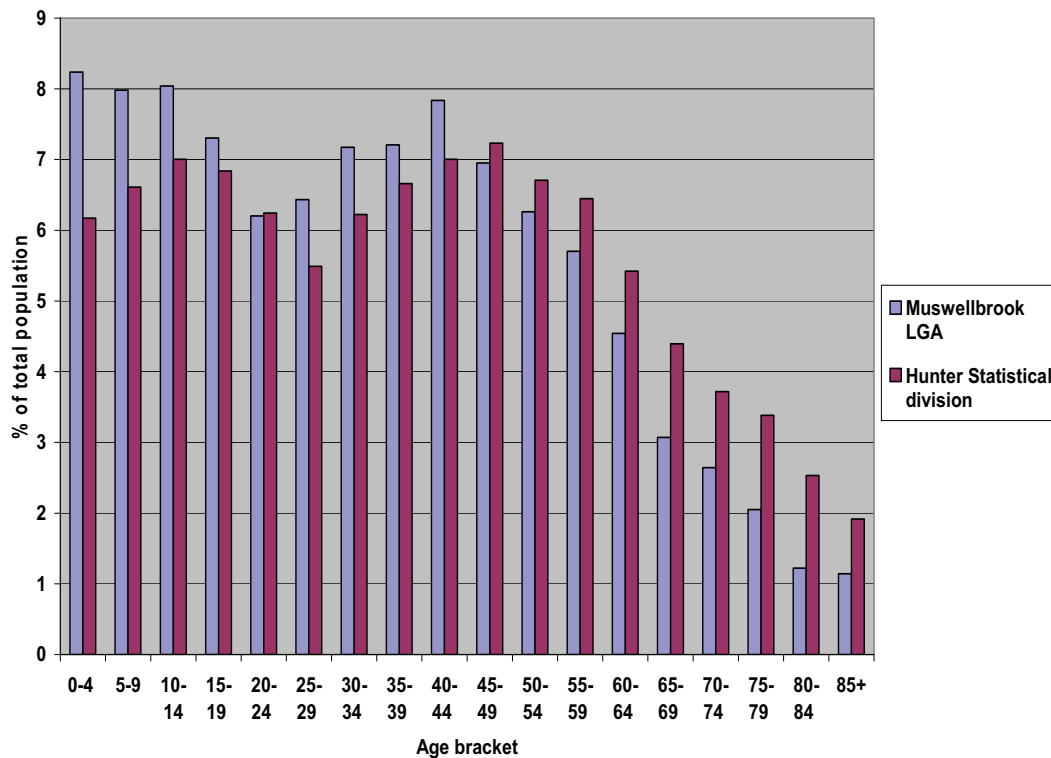


Figure 4.9: Age Structure of Population 2006: Muswellbrook LGA and Hunter Statistical Division
Source: ABS Census (2006)

A review of the age structure of the population in the Muswellbrook LGA indicated large numbers of people in both young and more mature family age grouping (0 - 19 years and 25 - 49 years), and a lower proportion of people of retiree age, than in the broader Hunter Statistical Division. The 2006 Census data also indicates that 24.3% of the Muswellbrook LGA population was under the age of 15 years (classified as being of dependent age) compared to only 19.8% in the Hunter Statistical Division.

Despite the Muswellbrook LGA demonstrating a relatively young population compared to the Hunter Statistical Division, the Census data indicates that the population has been ageing from 1996 to 2006. Figure 4.10 demonstrates this trend.

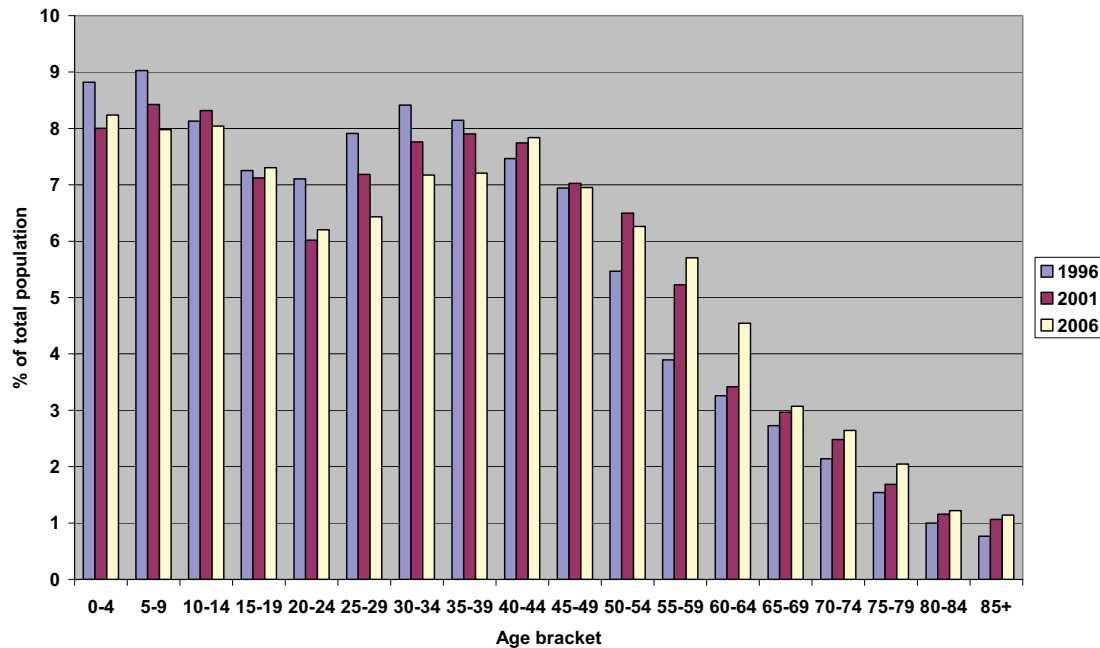


Figure 4.10: Muswellbrook LGA Population Age Structure: 1996; 2001 and 2006

Source: ABS Census (1996 - 2006)

According to the ABS Census data, the Muswellbrook LGA experienced a decline of 200 people (-5.9%) aged between 25 and 39 years of age living in the area from 2001 to 2006. During this same period the number of people aged over 55 years increased by 448 (16.9%). Figure 4.11 demonstrates the percentage change for each age group from 2001 to 2006.

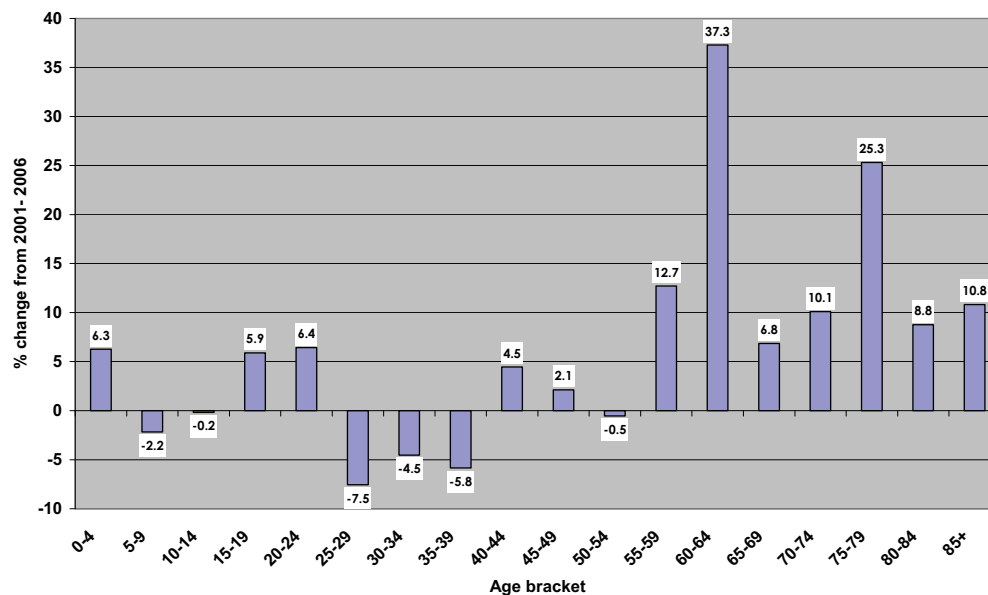


Figure 4.11: Percentage Change in Muswellbrook LGA Population Age Structure (2001- 2006)

Source: ABS Census (2006)

The Muswellbrook LGA Indigenous population on the other hand has grown by 219 people or 69.8% from the 2001 to 2006 Census. The proportion of people identifying themselves as Indigenous in the Muswellbrook LGA increased from 3.4% of the total population in 2001 to 4.8% in 2006. The most dramatic growth in the indigenous population during the 2001 to 2006 period was evident in those aged over 35 - 39 years and 55-59 years. In addition to the possibility of more people moving into the area, this growth in Indigenous population may also be attributable to greater cultural acceptance, or that the 2006 Census collated Census data from a greater proportion of Muswellbrook residents who identified themselves as Indigenous relative to the 2001 Census. Figure 4.12 represents the percentage change in the Muswellbrook LGA Indigenous population age structure from 1996 to 2006.

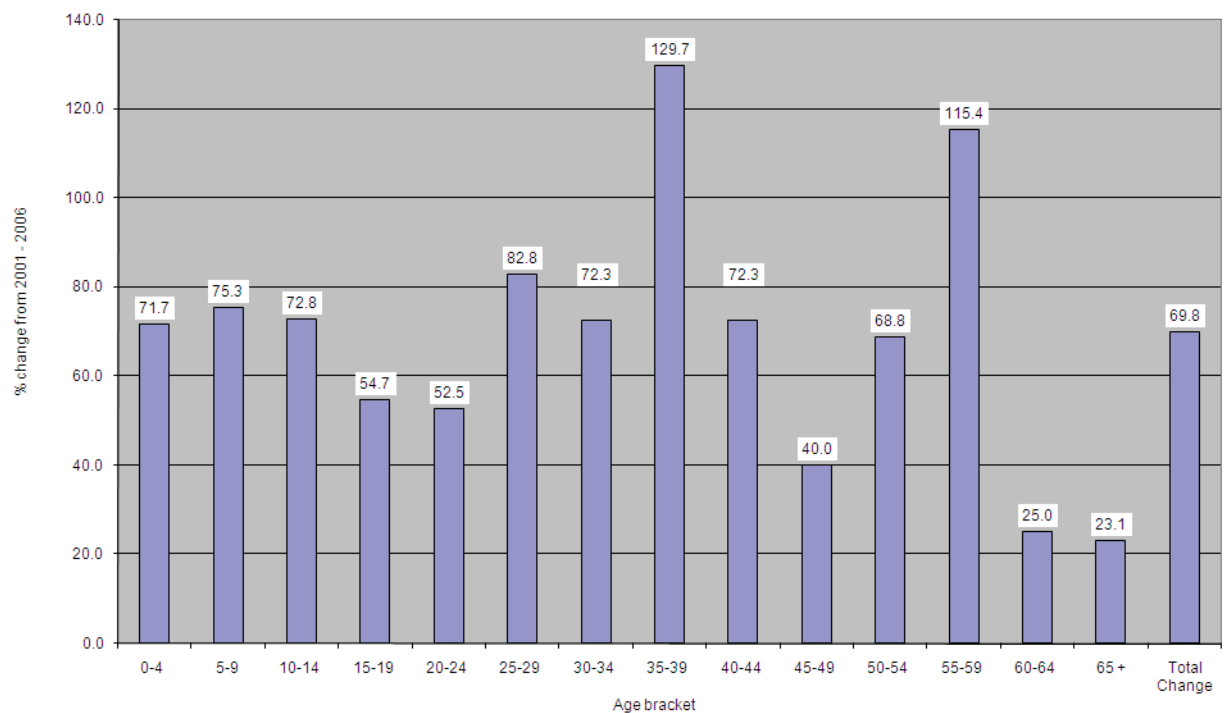


Figure 4.12: Percentage change in Muswellbrook LGA Indigenous Population Age Structure (2001- 2006)

Source: ABS Census (2006)

Family Sizes

The family structure of a community can provide an indication of settlement patterns, housing markets and demand for services and facilities. The 2006 Census data indicates that the Muswellbrook LGA demonstrates relatively high proportions (35.0%) of families comprised of couples with dependent children (children under 15 years of age) compared to the broader Hunter Statistical Division (28.9%). However, the most prevalent family type in both the Muswellbrook LGA and the Hunter Statistical Division in 2006 was couple families without children (36%). Figure 4.13 details the family structures of the Muswellbrook LGA and Hunter Statistical Division populations from 2001 to 2006.

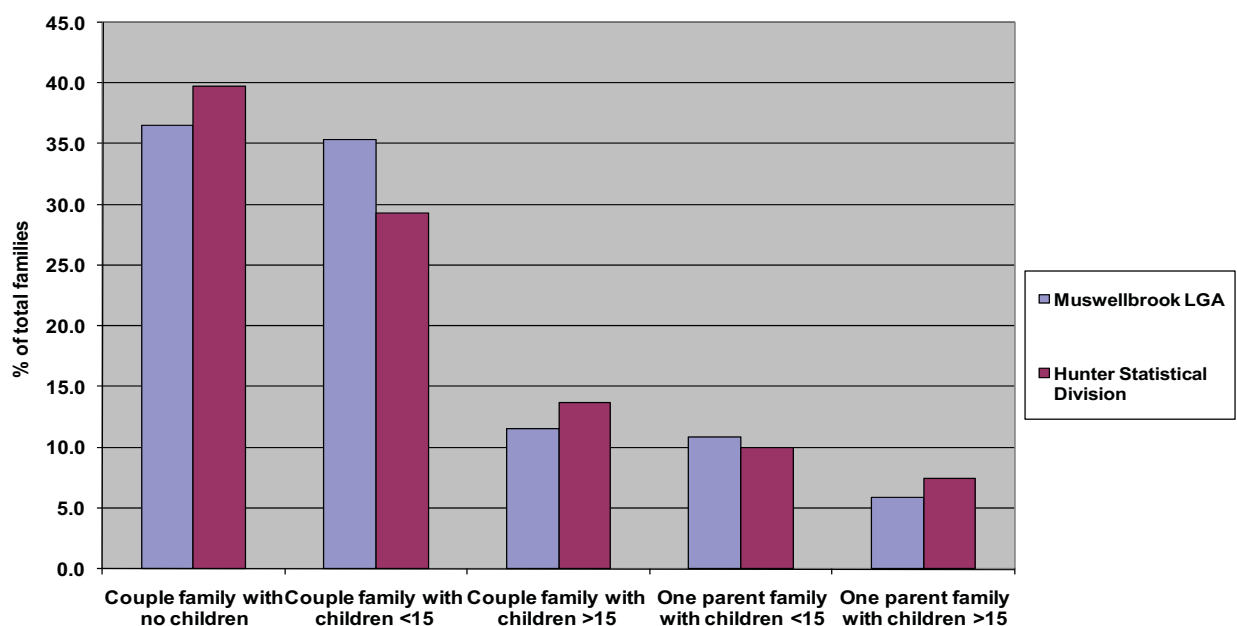


Figure 4.13: Family Composition 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

Changes in family structure may give indication to changes in the residential role and function of a community. According to the Census data, the total number of families in the Muswellbrook LGA increased by 4% from 3,813 families in 2001 to 3,964 families in 2006. Interestingly, the largest increase in family type in the Muswellbrook LGA over this period was observed in one parent families with non-dependent children (older than 15 years) which increased by 25.1%. This trend was not as strong in the broader Hunter Statistical Division which experienced an increase of 15.1% in one parent families with non-dependent children over this period. Figure 4.14 below details changes in family structure of the Muswellbrook LGA and Hunter Statistical Division from 2001 to 2006.

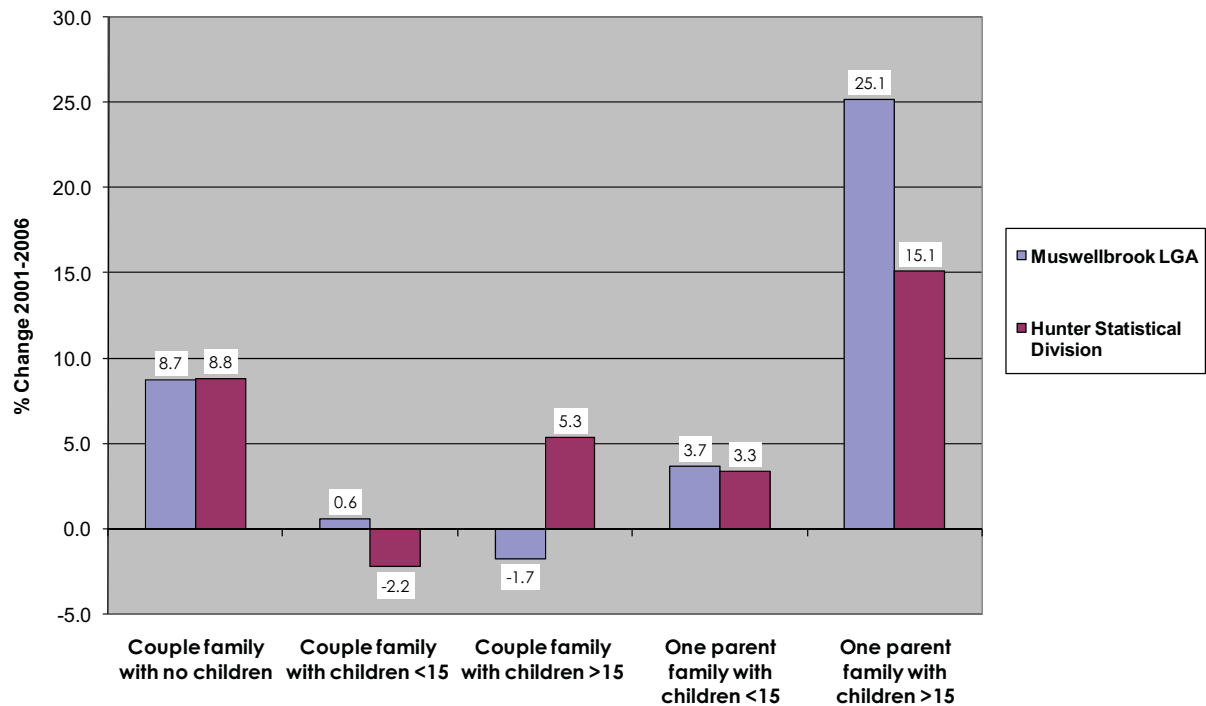


Figure 4.14: Percentage Change in Family Composition 2001 - 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

Education

The types of educational institutions that community members attend can reflect several factors, such as age and family structure, proximity or access to tertiary education. According to the 2006 Census the Muswellbrook LGA population demonstrated a relatively high proportion of people attending primary school (9.9%) and secondary school (7.2%) compared to the broader Hunter Statistical Division - 8.7% and 6.5% respectively; and a relatively low proportion attending university (1.0%) compared to the Hunter Statistical Division (3%). Figure 4.15 details the educational institutions attended by the Muswellbrook LGA and Hunter Statistical Division populations in 2006.

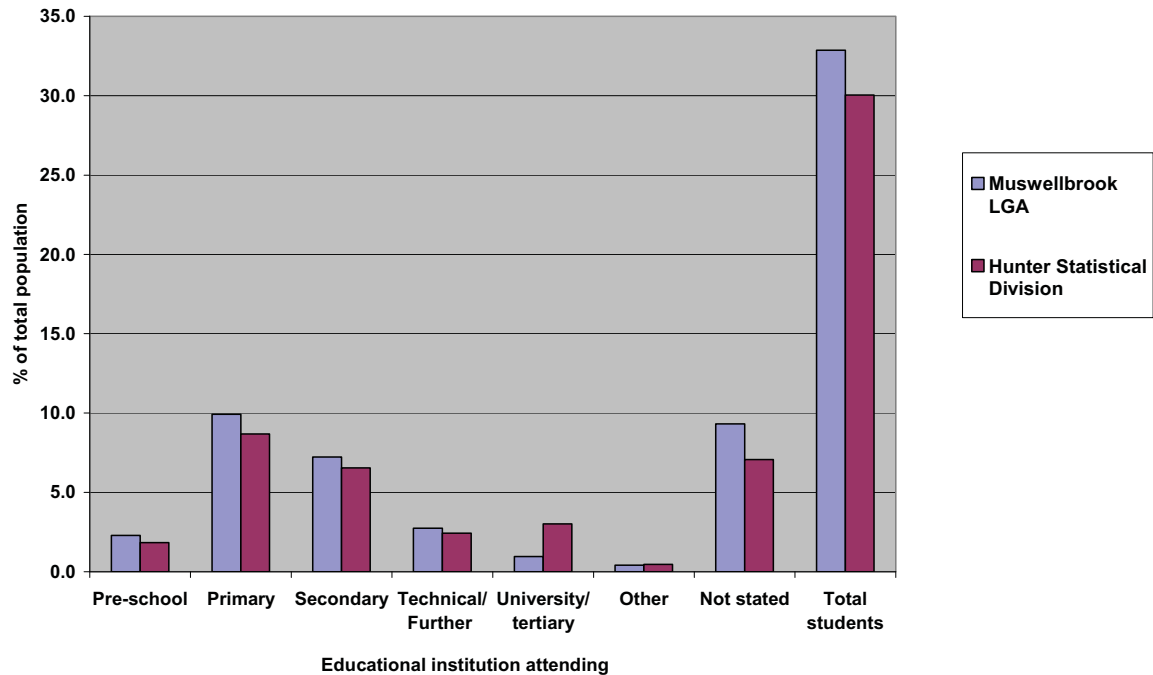


Figure 4.15: Education Institution Attended 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

Changes in educational institutions attended by the population may reflect changes in other community level factors, such as age structure, availability of educational opportunities and cultural attitudes towards educational attainment. Figure 4.16 demonstrates the change in the number of people attending educational institutions in the Muswellbrook LGA.

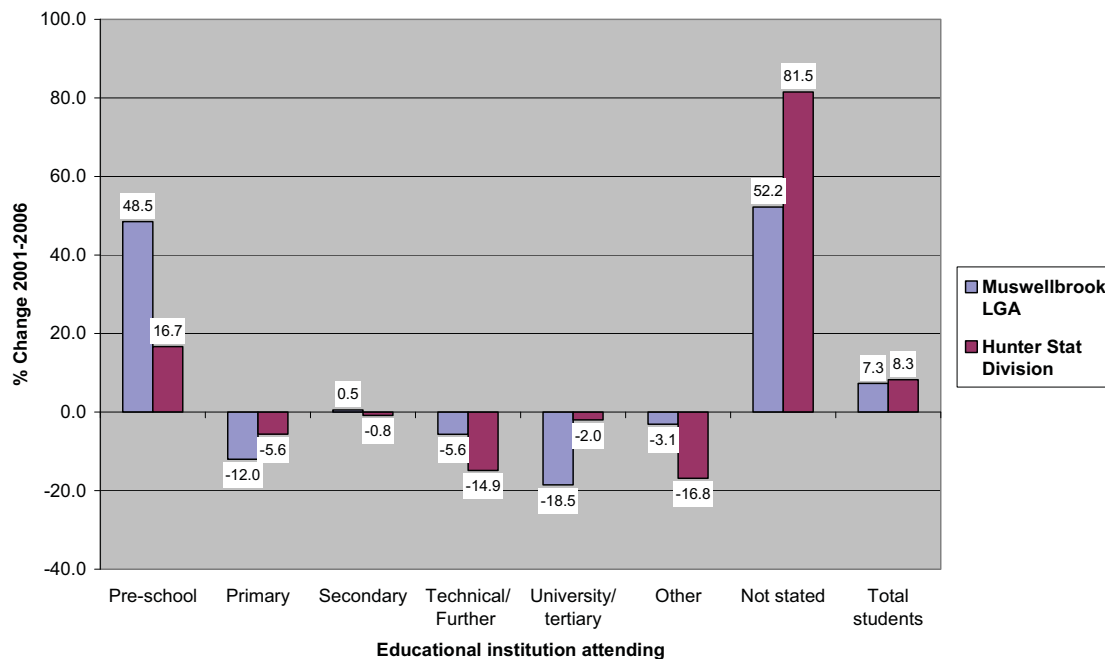


Figure 4.16: Percent Change in Educational Institution Attended 2001 - 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

According to the Census data, the Muswellbrook LGA population has demonstrated an overall increase (7.3%) in the proportion of people attending educational institutions from 2001 to 2006; however declines were observed during this period in the proportion of the total population attending primary schools (206 people or 12%), technical or further education institutions (25 people, 5.6%) and university or tertiary institutions (33 people, 18.5%). The high proportion of students recorded as attending an un-stated educational institution makes it difficult to assess true proportions across various institutions.

Occupations, Industries of Employment and Educational Qualifications

According to the 2006 Census, the dominant employer in the Muswellbrook LGA was the mining sector, employing approximately 13.8% of Muswellbrook's workforce population (1,102 people). Retail trade and Agriculture, forestry and fishing are other major employers, employing 9.7% and 8.9% of Muswellbrook's workforce population, respectively. The figure below demonstrates the percentage of industries of employment for the Muswellbrook LGA workforce from the 1996 – 2006 Census.

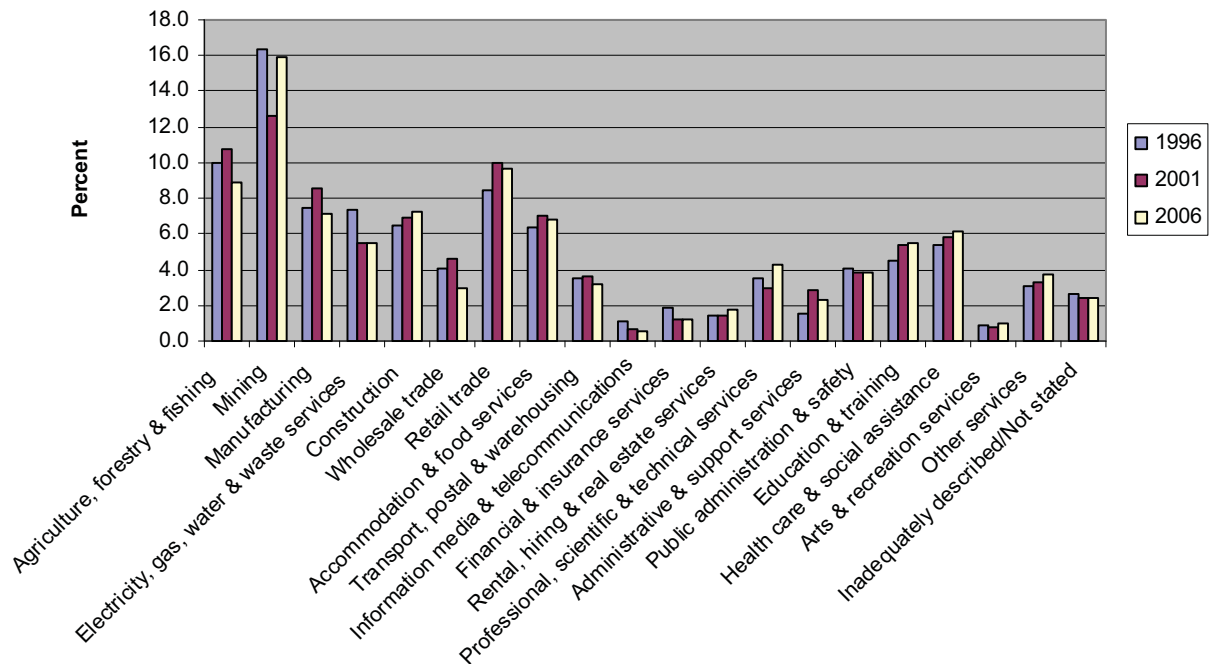


Figure 4.17: Industry of Employment for Muswellbrook LGA Workforce (1996, 2001, 2006)

Source: ABS Census (1996 - 2006)

Employment trends in the mining sector have been varied over the ten-year period from 1996 to 2006. As can be seen in Figure 4.17, there was a sharp decline in the number of persons employed by the mining industry between 1996 and 2001. This decline is likely due to the economic downturn in the region at that time, resulting in the downsizing of some mining operations and structural job changes within the mining sector.

In contrast, 2001 through to 2006 saw a substantial increase in the number of persons employed by the mining sector. This is indicative of resurging industry activities and mining opportunities in the area, as is evident from the number of development and extension proposals that were received and approved during this time.

Figure 4.18 demonstrates that the most significant changes in industry of employment for the Muswellbrook LGA workforce, from 2001 to 2006, were in the areas of Professional, scientific and technical services (62.3% growth), Arts and Recreation Services (44.4% growth), Mining (39.7% growth), as well as Wholesale Trade (27.2% decline). The mining industry demonstrated an overall growth of 3.2% from 1996 to 2006.

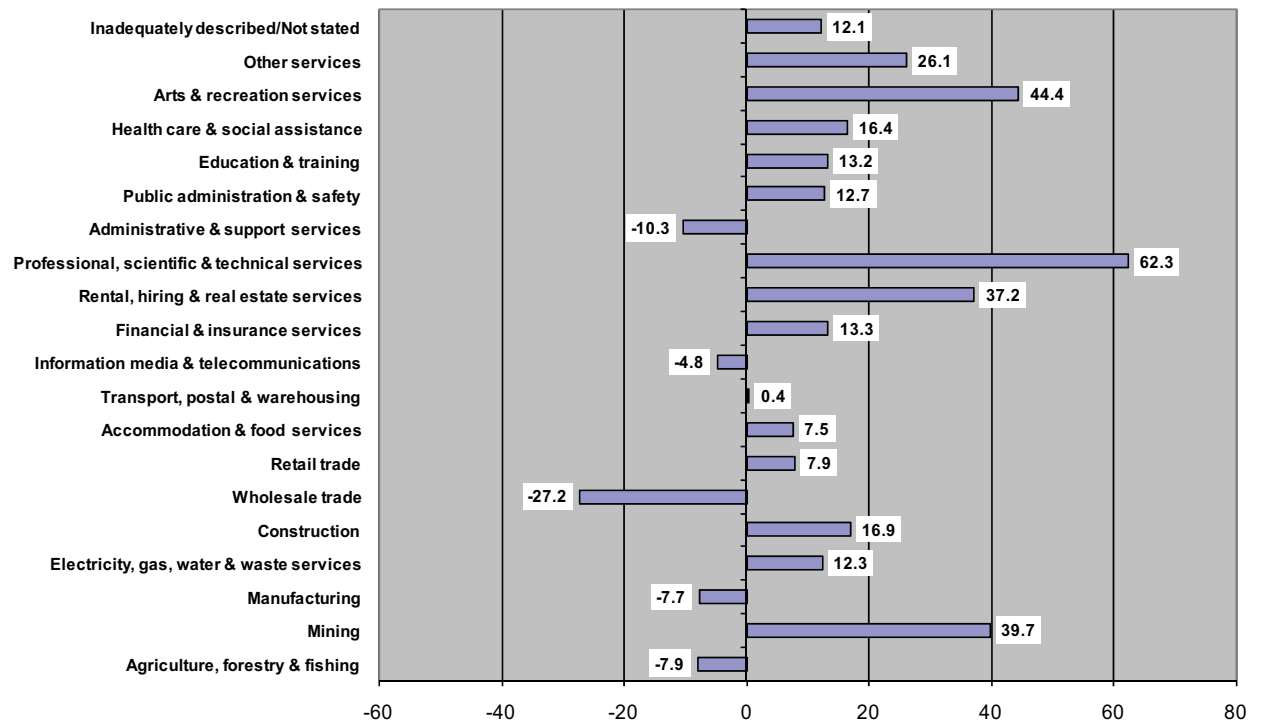


Figure 4.18: Percentage Change in Industry of Employment of Muswellbrook LGA Workforce (2001 to 2006)

Source: ABS Census (2006)

According to the 2006 Census, the Muswellbrook LGA workforce was characterised by occupations of: Technicians and Trades Workers (1473 people, 21.3%), Labourers (1,005 people, 14.5%), and Machinery Operators and Drivers (994 people, 14.3%). These occupations are characteristic of roles and skills within the mining sector, thus reinforcing that the mining industry is a major employer within the Muswellbrook LGA. Figure 4.19 shows changes in the Muswellbrook LGA workforce's occupation from the 1996 to 2006 Census.

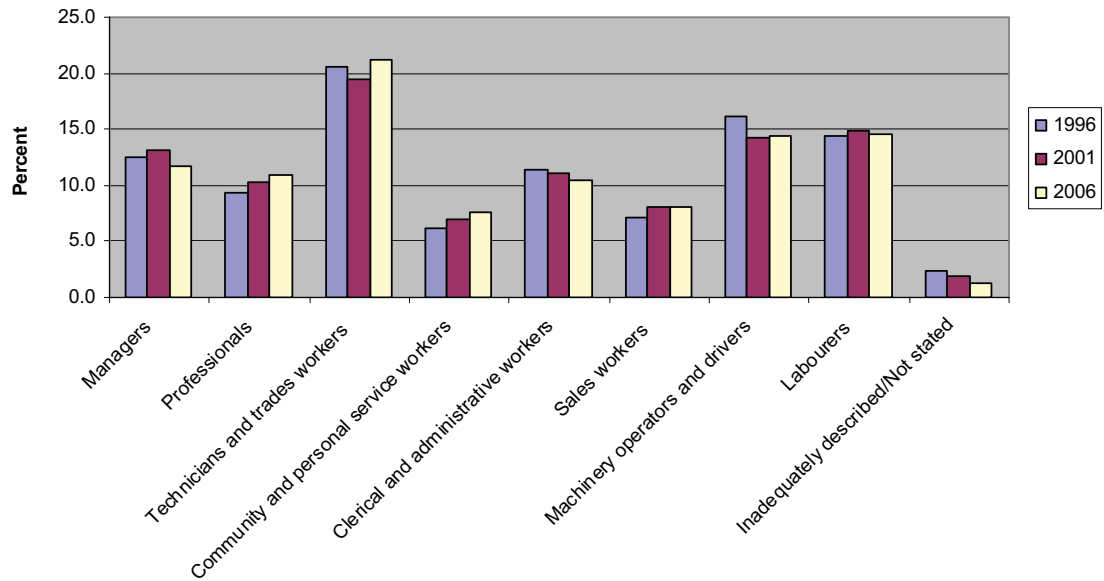


Figure 4.19: Muswellbrook LGA Workforce Occupation (1996, 2001 and 2006)

Source: ABS Census (1996 - 2006)

In 2006, the Muswellbrook LGA demonstrated higher proportions of full-time employment (64.8%) compared to the broader Hunter Statistical Division (58.8%). Figure 4.20 demonstrates the employment status of the Muswellbrook LGA population compared to the broader Hunter Statistical Division.

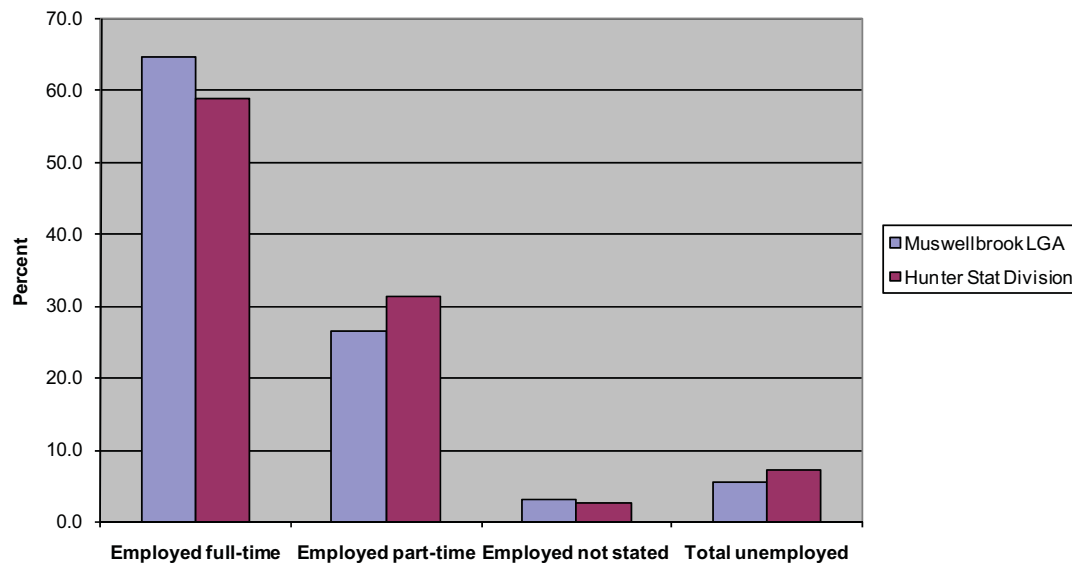


Figure 4.20: Employment Status of Muswellbrook LGA and Hunter Councils Region Population (2006)

Source: ABS Census (2006)

There was very little change in employment status over the ten year period from 1996. Figure 4.21 below demonstrates that just as many Muswellbrook residents were employed full-time in 2006 relative to 1996 and 2001. Interestingly, there is a marked decline in the number of unemployed persons since 2001. This trend could possibly be attributed to specific industry growth in the area. Examples of growing industries that were identified include Professional, scientific and technical services, Arts and recreation, as well as Mining, all of which were noted to be employing a greater proportion of Muswellbrook residents since 2001.

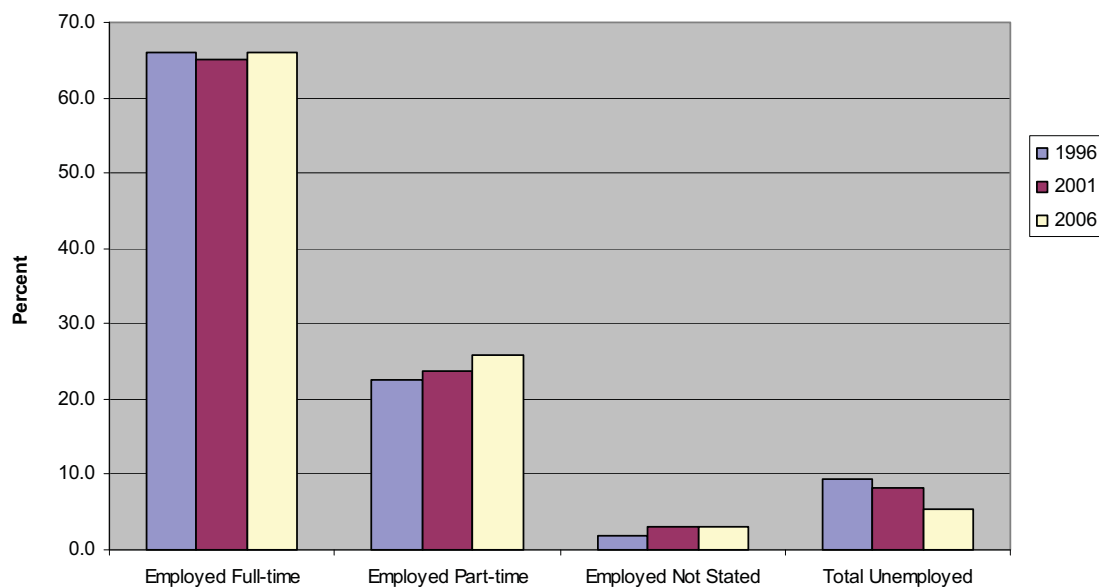


Figure 4.21: Employment Status of Muswellbrook LGA (1996 – 2006)

Source: ABS Census (1996 - 2006)

According to the 2006 Census, the qualifications of the Muswellbrook LGA workforce was predominantly vocational, a trend which has increased steadily stable over time. Figure 4.22 demonstrates the educational qualifications of the Muswellbrook LGA from 1996 to 2006.

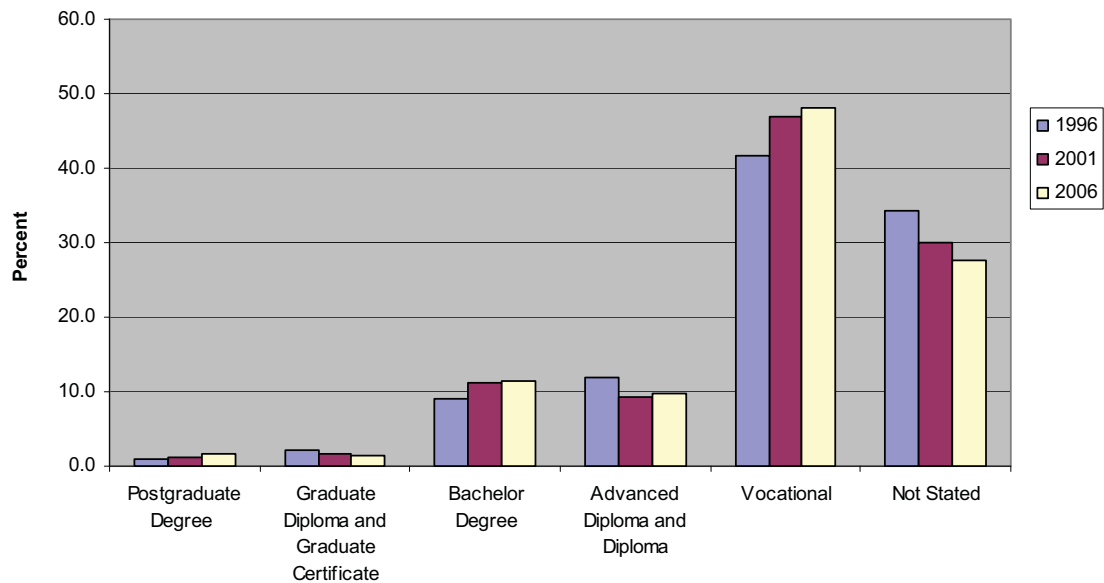


Figure 4.22: Educational Qualifications of Muswellbrook LGA (1996, 2001 and 2006)

Source: ABS Census (1996 - 2006)

Household Income

The 2006 Census data indicates that the Muswellbrook LGA population demonstrated higher household incomes than the broader Hunter Statistical Division. Approximately 21% of persons aged over 15 years in Muswellbrook LGA recorded individual weekly incomes above \$1000, compared to 16% in the broader Hunter Statistical Division. Relatively high incomes within the Muswellbrook LGA population are likely to be attributed to the prevalence of the mining industry in the area for which employees are rewarded for working shiftwork and weekends; however overall the distribution of weekly individual earnings demonstrated similar trends in both Muswellbrook LGA and the Hunter Statistical Division.

The highest proportion of Muswellbrook LGA individuals aged over 15 years (13.1%) reported weekly incomes of \$150-\$249, parallel to the broader Hunter Statistical Division demonstrating the highest proportion (17.5%) in the same bracket. Figure 4.23 compares the income of the Muswellbrook LGA population and the broader Hunter Statistical Division.

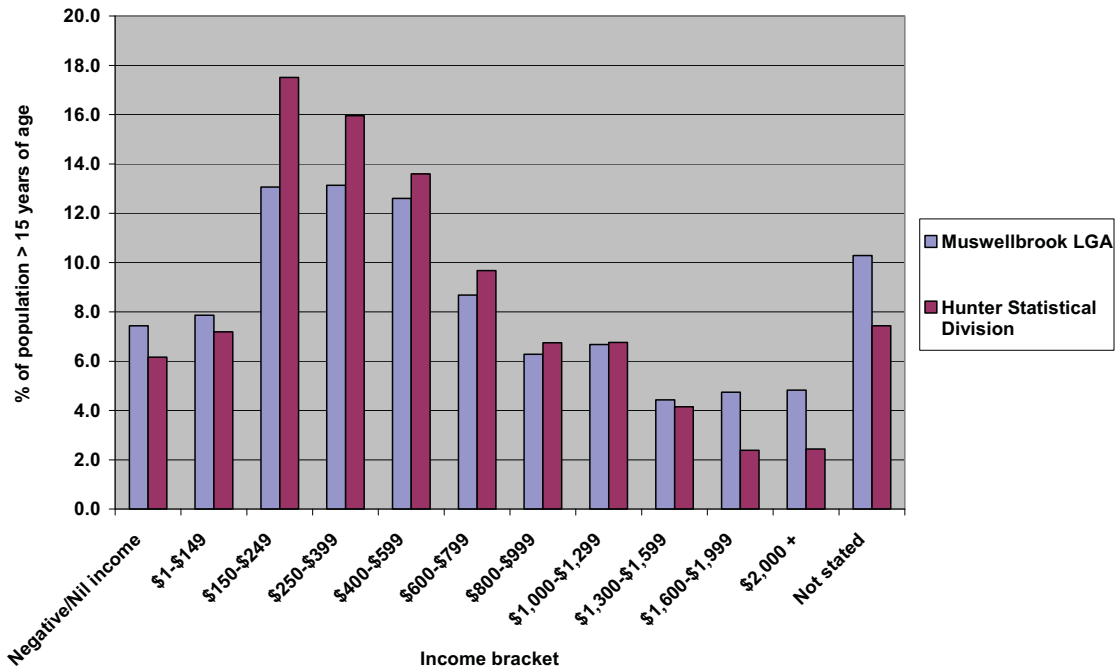


Figure 4.23: Weekly Individual Incomes of Person Aged > 15 years 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

The following tables (Table 4.8 and Table 4.9) demonstrate income changes over time in both the Muswellbrook LGA and the Hunter Statistical Division. Individual weekly income levels appear to have increased by more than 50% in the Muswellbrook LGA, comparable to the 58.2% growth observed for the broader Hunter Statistical Division.

Table 4.8: Weekly Incomes of Person Aged > 15 years 2006: Muswellbrook LGA (1996, 2001, 2006)

Median Weekly Income	1996	2001	2006	% Change Since 1996
Individual Income	\$305	\$369	\$469	53.7
Family Income	\$835	\$967	\$1,213	45.3
Household Income	\$712	\$827	\$1,058	48.6

Source: ABS Census (1996 - 2006)

Table 4.9: Weekly Incomes of Person Aged > 15 years 2006: Hunter Statistical Division (1996, 2001, 2006)

Median Weekly Income	1996	2001	2006	% Change Since 1996
Individual Income	\$249	\$309	\$394	58.2
Family Income	\$676	\$822	\$1,090	61.2
Household Income	\$546	\$690	\$887	62.4

Source: ABS Census (1996 - 2006)

Dwellings

The types of dwelling in a community may give indication to the role and function that the area plays in the housing market. For instance families are more likely to be attracted to areas with greater concentrations of detached or separate dwellings.

The 2006 Census data indicates that the housing stock in both the Muswellbrook LGA and Hunter Statistical Division displayed similar patterns and was characterised by separate or detached dwellings; which is typical of low to medium density housing in rural or regional localities. The Muswellbrook LGA demonstrated higher proportions of persons residing in separate houses (87.1%) compared to the Hunter Statistical Division (83.3%); which may in part explain the younger population and higher proportion of families in Muswellbrook LGA.

Table 4.10 demonstrates the dwelling types in Muswellbrook and the Hunter Statistical Division.

Table 4.10: Dwelling Types 2001 - 2006: Muswellbrook LGA and Hunter Statistical Division

Dwelling type	2001				2006				Change 2001-2006			
	Muswellbrook LGA		Hunter Statistical Division		Muswellbrook LGA		Hunter Statistical Division		Muswellbrook LGA		Hunter Statistical Division	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total dwellings	5,930		241,620		6,208		256,860		278	4.7	15,240	6.3
Unoccupied dwellings	533	9.0	24,310	10.1	565	9.1	27,951	10.9	32	6.0	3,641	15.0
Occupied dwellings:	5,397	91.0	217,310	89.9	5,643	90.9	228,909	89.1	246	4.6	11,599	5.3
Separate house	4,649	86.1	179,828	82.8	4,914	87.1	190,591	83.3	265	5.7	10,763	6.0
Semi-detached	278	5.2	16,060	7.4	172	3.0	16,937	7.4	-106	-38.1	877	5.5
Flat, unit, apartm't	238	4.4	15,319	7.0	419	7.4	17,598	7.7	181	76.1	2,279	14.9
Other	118	2.2	4,478	2.1	126	2.2	3,647	1.6	8	6.8	-831	-18.6
Not stated	114	2.1	1,625	0.7	12	0.2	136	0.1	-102	-89.5	-1,489	-91.6

Source: ABS Census (2001 - 2006)

The Muswellbrook LGA demonstrated higher occupancy rates (90.9% of total dwellings occupied) compared to the Hunter Statistical Division (89.1%). Of particular interest is the apparent increase of 246 occupied dwellings (4.6% growth) in the Muswellbrook LGA over the period from 2001 to 2006. This trend is indicative of the population increase apparent in the Muswellbrook LGA between 2001 and 2006. Indeed, as outlined by the Muswellbrook Shire Council's current strategic plans, some of the Council's current objectives include investing further resources in the development and provision of greater housing infrastructure, so as to accommodate its growing population.

Figure 4.24 demonstrates the proportion change in dwelling types in the Muswellbrook LGA and Hunter Statistical Division, from 2001 – 2006. There are significant increases apparent in the number of Muswellbrook residents residing in flats, units and apartments in the Muswellbrook LGA (76% growth) compared to the Hunter Statistical Division (14.9%). These residential trends are likely to reflect housing measures for a growing temporary workforce that is typically characteristic of the mining sector.

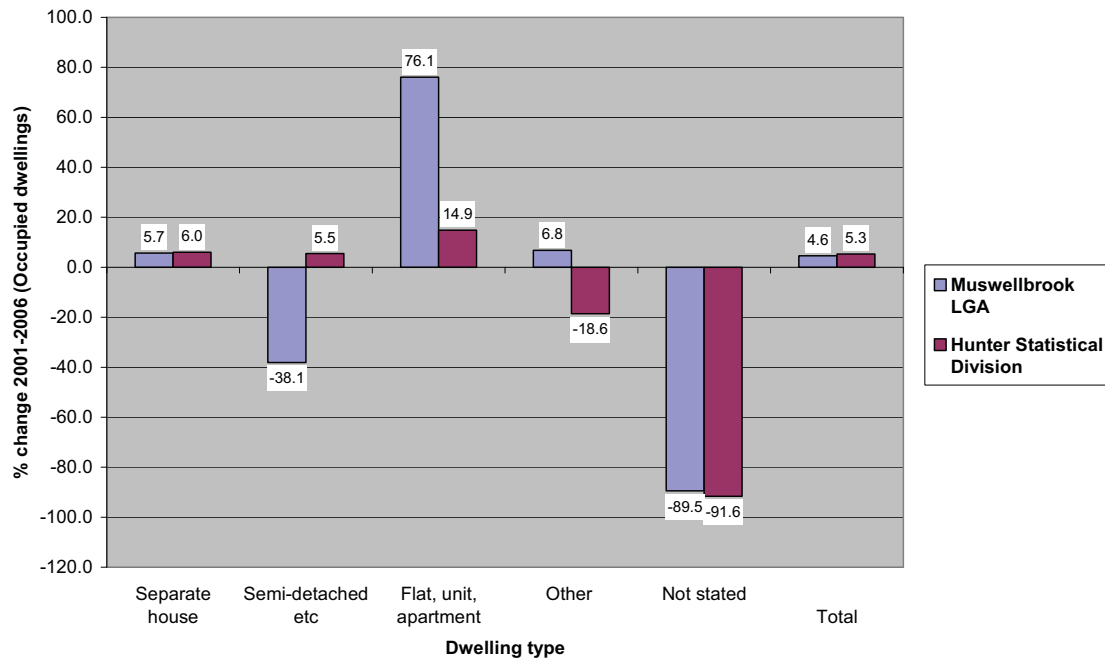


Figure 4.24: Percentage Change in Dwelling Type 2001-2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

Housing tenure Census data can provide some insight into the socio-economic function of an area, as well as trends in housing markets. According to this data, Muswellbrook LGA demonstrated a mix of housing tenure types likely to attract a mix of residents from young couples to retirees.

Table 4.11 details tenure types of dwellings in the Muswellbrook LGA from 2001 to 2006.

Table 4.11: Dwelling Types 2001- 2006: Muswellbrook LGA and Hunter Statistical Division

Tenure type	2001				2006				Change from 2001-2006			
	Muswellbrook LGA		Hunter Statistical Division		Muswellbrook LGA		Hunter Statistical Division		Muswellbrook LGA		Hunter Statistical Division	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Fully owned	1,880	34.8	94,121	43.3	1,648	29.2	83,262	36.4	-232	-12.3	-10,859	-11.5
Being purchased	1,295	24.0	54,892	25.3	1,704	30.2	71,252	31.1	409	31.6	16,360	29.8
Rented: Govt' housing	394	7.3	11,265	5.2	359	6.4	10,781	4.7	-35	-8.9	-484	-4.3
Rented: other	1,251	23.2	42,698	19.6	1,434	25.4	48,386	21.1	183	14.6	5,688	13.3
Other	272	5.0	6,027	2.8	51	0.9	2,143	0.9	-221	-81.3	-3,884	-64.4
Not stated	305	5.7	8,307	3.8	449	8.0	13,085	5.7	144	47.2	4,778	57.5
Total	5,397	100.0	217,310	100.0	5,645	100.0	228,909	100.0	248	4.6	11,599	5.3

Source: ABS Census (2001 - 2006)

According to the 2006 Census, the Muswellbrook LGA demonstrated a lower proportion of fully owned households (29.2%) relative to the broader Hunter region (36.4%). This could be because Muswellbrook's recent population influx was significantly apparent only during the 2001 – 2006 Census periods. Therefore, new Muswellbrook residents are still likely to be in the process of paying off mortgages on their primary place of residence. As can be seen in the following figure, there has been an approximate 31.5% increase in the number of dwellings in the process of being purchased from 2001 – 2006. Also notable is the 8.9% decrease in number of Muswellbrook dwellings rented through State / Territory Government Housing Authorities, relative to the 4.3% decrease across the broader Hunter Statistical Division.

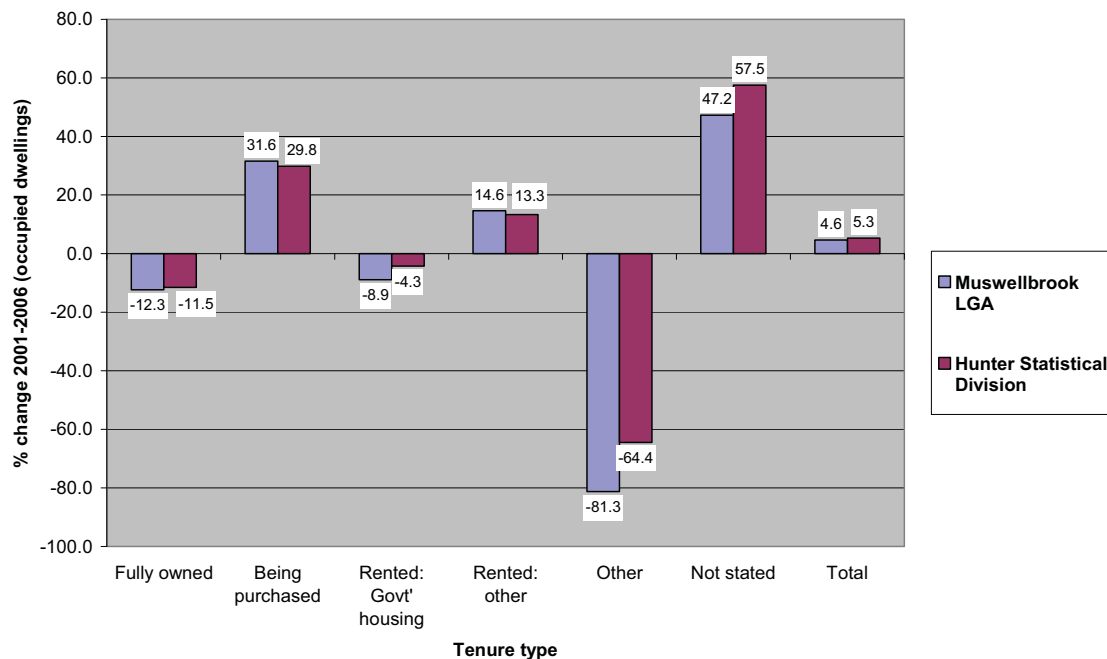


Figure 4.25: Changes in Dwelling Tenure Type 2001 - 2006: Muswellbrook LGA and Hunter Statistical Division

Source: ABS Census (2006)

Muswellbrook LGA Demographic Summary

The Muswellbrook LGA population has grown by 3.3% between the 2001 and 2006 Census periods, likely indicative of general growth across a number of different industry sectors in the region. For instance, in addition to mining, other industry activities in Muswellbrook also include horse farming, as well as fossil fuel electricity generation (Hunter Valley Research Foundation, 2008 - 09).

The population growth in the Muswellbrook LGA has also been complemented by increased employment rates, an increase of 3.2% from 2001 to 2006. In addition, the Muswellbrook LGA population recorded higher income levels relative to that of the Hunter Statistical Division during the 2006 Census, with individual and family income levels increasing by 53.7% and 45.3%, respectively.

The 2006 Census also reports that the Muswellbrook LGA has had substantially high occupancy rates for housing in recent years, with the total amount of occupied dwellings increasing by 4.7% from 2001 to 2006. Muswellbrook Shire Council Strategic plans outline the Council's development initiatives aimed at improving provision of housing infrastructure to not only accommodate its growing population, but to also

serve as a key attraction for a skilled workforce to take up permanent residency in the Muswellbrook region.

4.3.2 Muswellbrook, Scone, Singleton and Denman Suburb Comparisons

Industry workforce trends in the area suggest that workforces tend to reside predominantly within the townships of Muswellbrook, Singleton and Scone. Earlier workforce surveys of Mt Arthur Coal employees, undertaken by Coakes Consulting in 1999, 2003 and 2006 reveal a similar trend. Therefore, a comparison of socio-economic and demographic trends across these key localities of residence is also provided.

This section provides a comparison across localities at a State suburb² level, rather than at a broader LGA or urban centre / locality level. This smaller unit of analysis enables a more targeted and accurate representation of a geographic area's socio-economic and demographic characteristics.

For purposes of the current analysis, the suburbs of Muswellbrook, Denman, Scone and Singleton are compared, with data for Singleton also including the suburbs of Singleton Heights; Darlington-Singleton; Hunterview and Singleton Balance. The location of these suburb boundaries, as delineated by the ABS, is shown in Figure 4.26 to 4.32.

² Census-specific area where collection districts are aggregated to approximate suburbs.



Figure 4.26: Muswellbrook Suburb Area



Figure 4.27: Scone Suburb Area



Figure 4.28: Denman Suburb Area

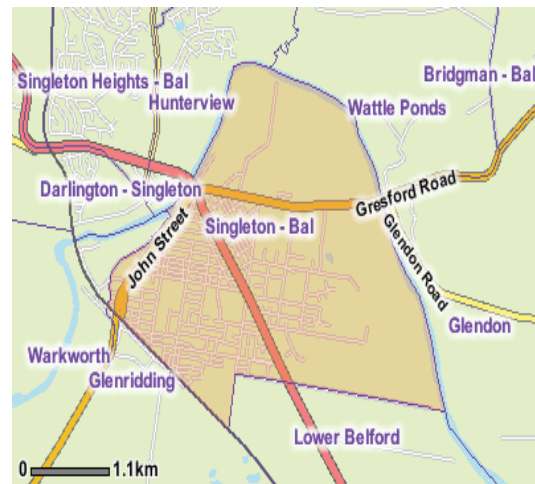


Figure 4.29: Singleton Balance Suburb Area

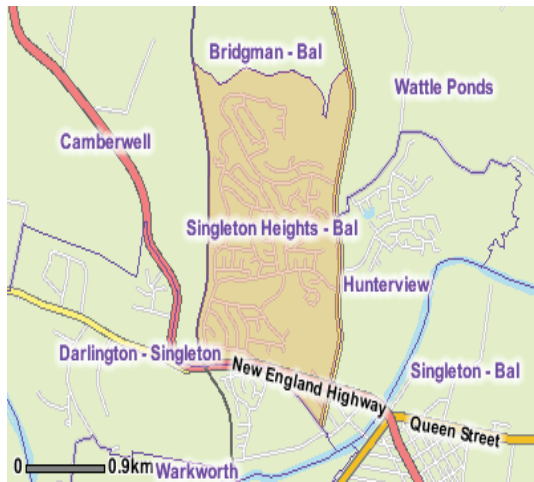


Figure 4.30: Singleton Heights Suburb Area

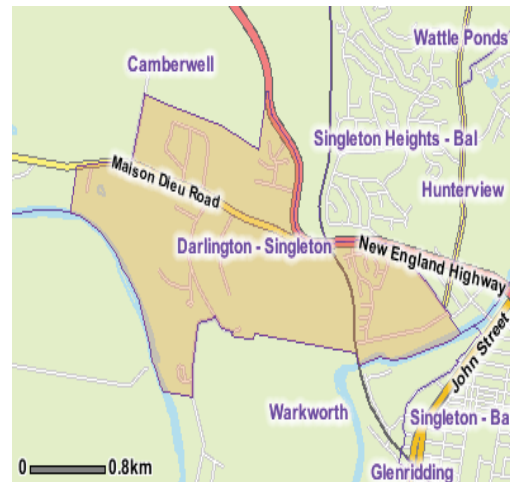


Figure 4.31: Darlington- Singleton Suburb Area

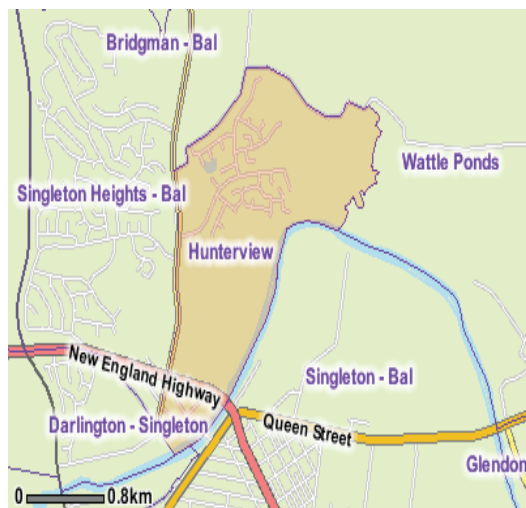


Figure 4.32: Hunterview Suburb Area

Source: ABS 2006 Census available online at
<http://www.abs.gov.au/websitedbs/d3310114.nsf/Home/census>

Population and Age Structure

The 2006 Census indicates that the suburbs of Muswellbrook, Scone, Denman and Singleton demonstrated fairly large differences in total population: Muswellbrook recorded 10,708 people; Singleton 13,493³; Scone 5,081 and Denman 1,953. According to Census data the suburbs also display similarities in terms of demographic patterns. One of the most notable differences between the suburbs was the median ages recorded, with Scone recording the highest median age of 38 years and Muswellbrook the lowest at 33 years.

Table 4.12 details a range of selected demographic characteristics for the suburbs of Scone, Denman, Muswellbrook and Singleton (including Hunterview, Darlington and Singleton Heights).

Table 4.12: Selected Demographic Characteristics 2006: suburbs of Scone, Denman, Muswellbrook and Singleton

Selected Characteristics	Scone Suburb	Denman Suburb	Muswellbrook Suburb	Singleton combined total			
				Singleton Balance	Singleton Heights	Hunterview	Darlington-Singleton
Total persons excluding overseas visitors	5081	1953	10708	5784	4776	2087	846
Median age	38	36	33	37	31	30	34
Median individual income (\$/weekly)	452	469	447	429	497	606	562
Median household income (\$/weekly)	920	1017	1066	1051	1282	1664	1483
Median family income (\$/weekly)	1132	1188	1226	1212	1477	1713	1660
Average household size	2.4	2.5	2.6	2.5	2.8	3.1	2.7

Source: ABS Census (2006)

Figure 4.33 outlines the 2006 age structure of the suburbs within which resident mining employees are likely to reside (Scone, Denman, Muswellbrook and Singleton combined total).

³ Including the suburbs of Singleton Heights, Hunterview, Darlington and Singleton Balance.

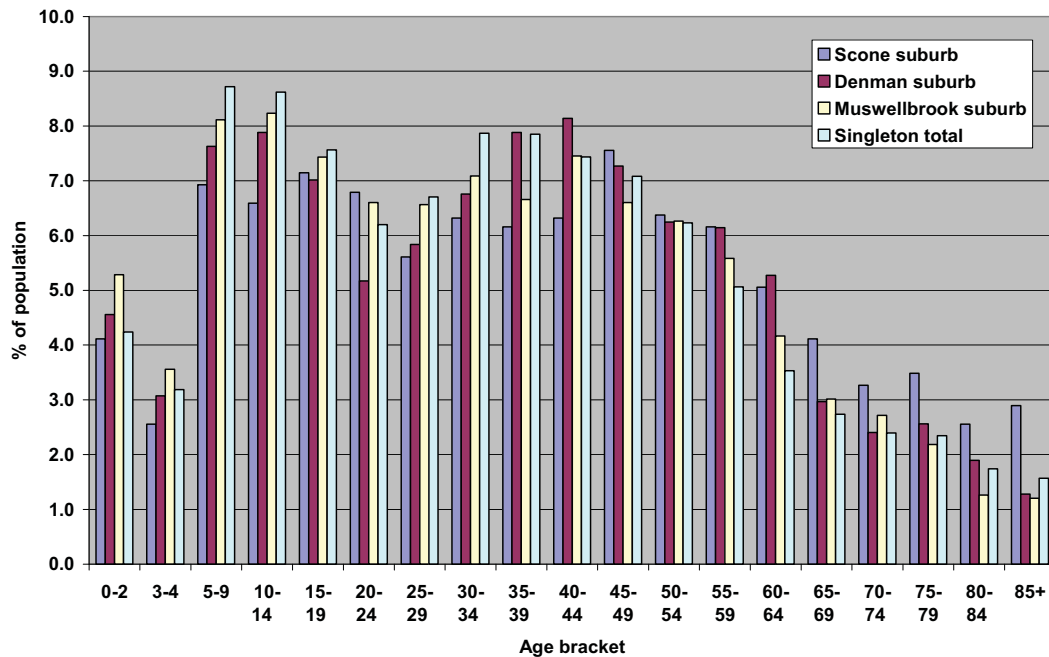


Figure 4.33: Age Structure of Population (proportion) 2006: suburbs of Scone, Denman, Muswellbrook and Singleton

Source: ABS Census (2006)

The 2006 Census data indicates that the suburbs of Scone, Denman, Muswellbrook and Singleton demonstrated similarities in terms of population age structure. All four areas demonstrated a decline in proportions of young adults (20 - 29 years of age), that is often characteristic of regional and rural areas due to migration of youth to cities for educational, employment and recreational opportunities. This trend was most notable in Denman which recorded only 11.0% of the population aged between 20 and 29 years.

The suburb of Scone recorded a relatively aging population in the 2006 Census compared to the other suburbs considered. The suburb of Scone demonstrated lower proportions of dependent children or people aged below 15 years (20%) and higher proportions of people aged above 65 years (16.3%) than all three of the other suburbs considered (see Table 4.13).

The suburb of Muswellbrook recorded the youngest population of all the suburbs in the 2006 Census with 25.2% of the total population (2,698 people) being dependent children, aged below 15 years and only 10.4% of people aged above 65 years (1,114 people).

Table 4.13: Population Aged Below 15 years and above 65 years 2006: suburbs of Scone, Denman, Muswellbrook and Singleton

Age bracket	Scone suburb		Denman suburb		Muswellbrook suburb		Singleton Combined total	
	No.	%	No.	%	No.	%	No.	%
Under 15	1,026	20.2	451	23.1	2,698	25.2	3,346	24.8
Above 65	828	16.3	217	11.1	1,114	10.4	1,457	10.8

Source: ABS Census (2006)

Education

The 2006 Census data demonstrates similarities across the suburbs in terms of proportions of the population attending different types of educational institutions. Primary school was the most commonly attended educational institution across the suburbs with proportions ranging from 9.5% of the total population (483 people) in Scone to 11.5% of the population (1,552 people) in Singleton. A total of 3,272 people attended primary schools in 2006 across the four areas.

Interestingly the Muswellbrook suburb population did not record the highest proportion of primary school students, despite recording the highest proportion of the population being of primary school age; this may be accounted for by the relatively high proportion of students attending an un-stated educational institution as recorded in the 2006 Census. Figure 4.34 demonstrates the educational institutions attended across the four suburbs in 2006.

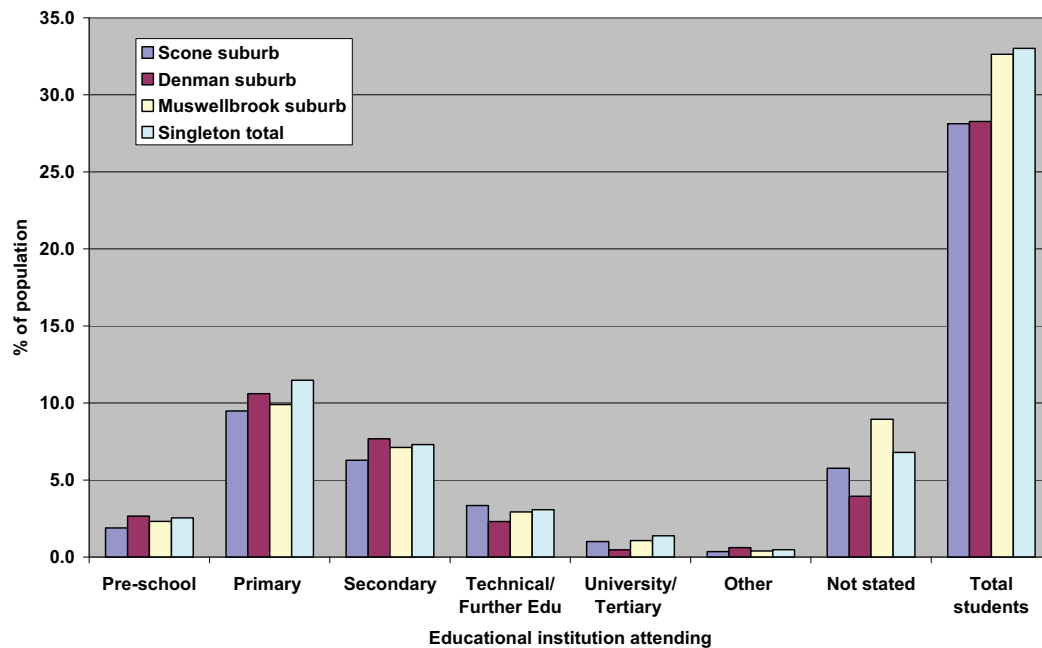


Figure 4.34: Educational Institution Attending 2006: suburbs of Scone, Denman, Muswellbrook and Singleton

Source: ABS Census (2006)

The Singleton combined area recorded the highest proportion of students in 2006 with 33.0% of the total population (4,453 people) attending an educational institution of some kind, compared to 28.1% of the total population (1,428 people) in Scone.

Family Composition

The family composition in the suburbs most likely to be affected by population increases associated with the Project, may give some indication as to where families are likely to settle and subsequent demand for services (refer to Figure 4.35 below). The 2006 Census data indicates that:

- Denman and the Singleton combined area demonstrated the highest prevalence of couple families with dependent aged children, relative to the other localities;
- Scone demonstrated the lowest proportion of couple families with dependent children, and the highest number of couple families with no children compared to the other areas of interest;
- Muswellbrook demonstrated a higher proportion of one parent families with dependent children, relative to the other localities; and
- Denman demonstrated relatively low proportions of one parent families with children, relative to the other localities.

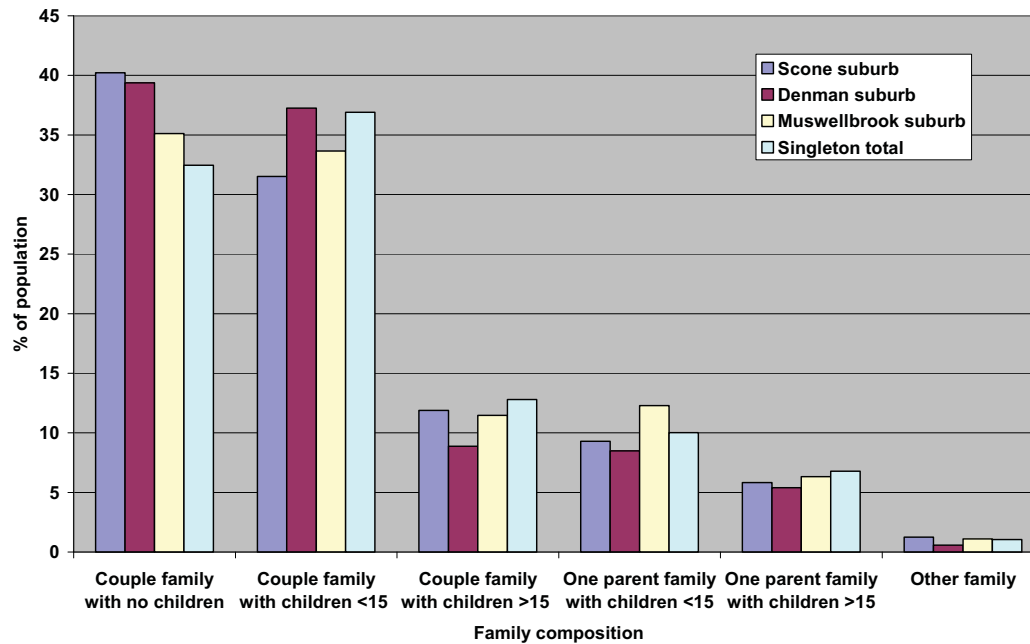


Figure 4.35: Family Composition (proportions) 2006: suburbs of Scone, Denman, Muswellbrook and Singleton

Source: ABS Census (2006)

Household Incomes

Singleton recorded the highest proportion (25.2%) of the total population earning individual weekly incomes over \$1000, compared to Muswellbrook (21.7%), Denman (19.9%) and Scone (17.8%). Figure 4.36 demonstrates the weekly individual incomes of persons aged over 15 years across the suburbs of Scone, Denman, Muswellbrook and Singleton in 2006.

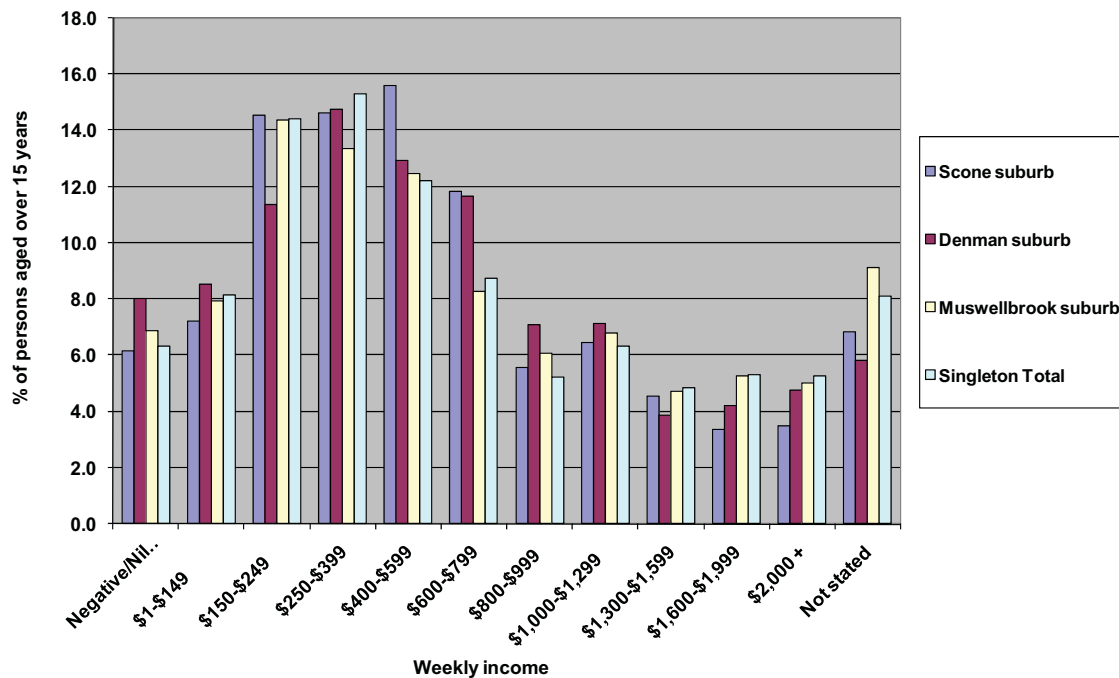


Figure 4.36: Weekly Individual Incomes of Person aged > 15 years 2006: suburbs of Scone; Denman; Muswellbrook; and Singleton

Source: ABS Census (2006)

Dwelling Types and Home Ownership

The proportions of dwelling types observed in the 2006 Census across the different localities under consideration displayed similar patterns. Separate or detached dwellings were characteristic of the housing stock across the suburbs and semi-detached dwellings were least common. This is characteristic of the low to medium density housing typically observed in localities outside of the metropolitan area.

The occupancy rates of dwellings were comparable in all four localities in 2006 and ranged from 91.4% (191 unoccupied dwellings) in Scone to 92.5% (328 unoccupied dwellings) in Muswellbrook. The 2006 Census data indicates that across the four areas there were approximately 1001 unoccupied dwellings. Figure 4.37 demonstrates the patterns in dwelling type across the areas of Scone, Denman, Muswellbrook and Singleton.

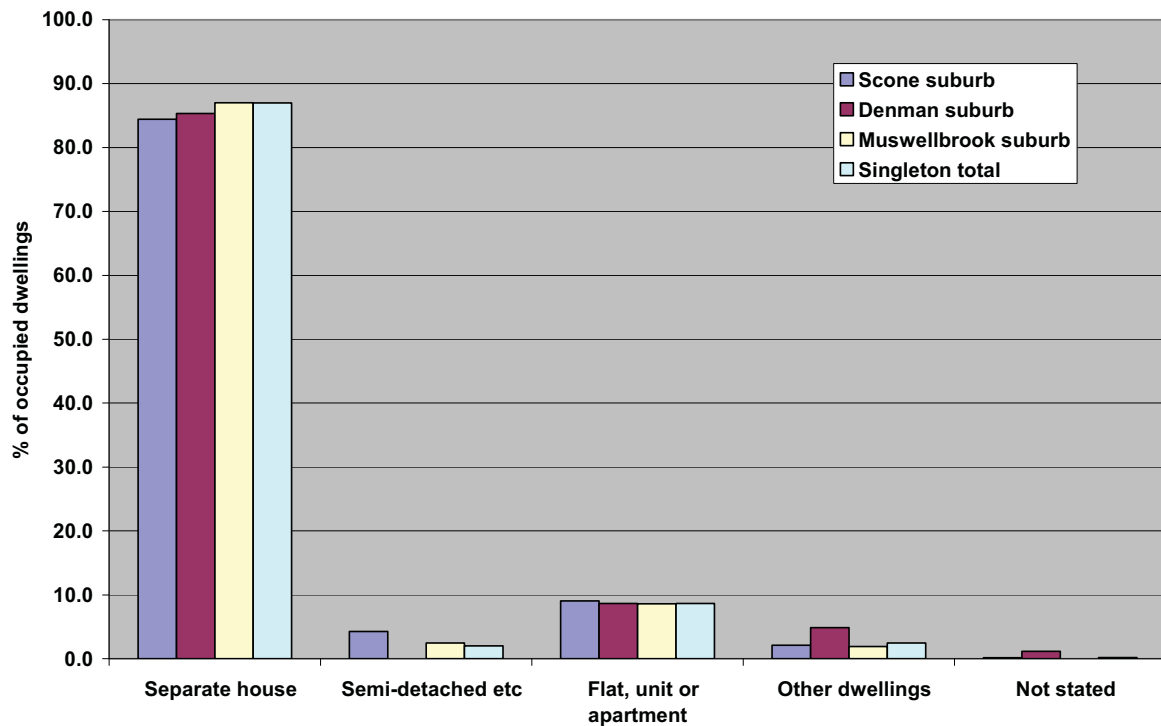


Figure 4.37: Dwelling Type 2006: suburbs of Scone, Denman, Muswellbrook and Singleton (proportions)

Source: ABS Census (2006)

The tenure data from the 2006 Census indicates that the suburb of Scone demonstrated a higher proportion of fully-owned homes (687 dwellings, 33.7%) compared to Denman (243 dwellings, 31.3%), Singleton combined (1386 dwellings, 28.5%) and Muswellbrook (1119 dwellings, 27.8%). The Muswellbrook suburb population demonstrated the lowest proportion of fully owned homes and the highest proportion of homes rented from government housing authorities (349 dwellings, 8.7% of occupied dwellings). Singleton combined area demonstrated the highest proportion of homes being purchased. Figure 4.38 details the dwelling tenure type of the Scone, Denman, Muswellbrook and Singleton areas.

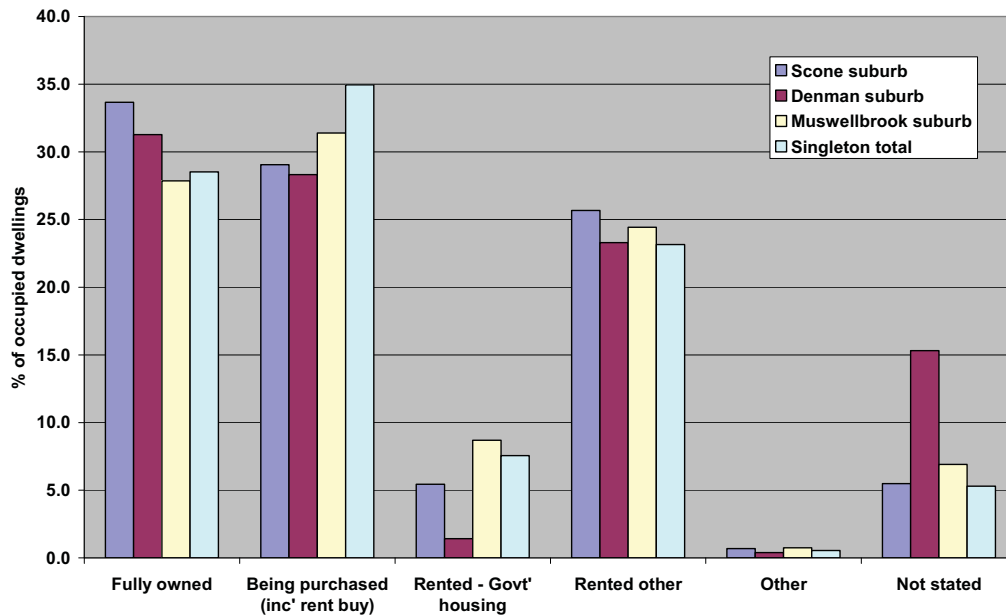


Figure 4.38 Tenure Type 2006: suburbs of Scone, Denman, Muswellbrook and Singleton (proportions)

Source: ABS Census (2006)

Table 4.14 outlines the median weekly rent across the different localities of interest. As the data suggests, residents living in the areas of Scone, Denman and Muswellbrook paid lower weekly rent relative to the median weekly rent of \$180 for the broader Hunter Statistical Division. This observation is interesting given the median income levels for residents from the Scone, Denman, Muswellbrook and Singleton localities are substantially higher than the Hunter Statistical Division average.

Table 4.14: Median Weekly Rent: suburbs of Scone, Denman, Muswellbrook and Singleton

Median Weekly Rent	Scone Suburb	Denman Suburb	Muswellbrook Suburb	Singleton Total
Median rent (\$/weekly)	150	125	160	180

Source: ABS Census (2006)

Table 4.15 shows median housing loan repayments for the suburbs of Scone, Denman, Muswellbrook, and Singleton combined areas. While both the Scone and Denman suburbs have relatively lower monthly housing loan repayments relative to the broader Hunter Statistical Division (\$1,300), residents from the Singleton combined area appear to have higher mortgage repayments.

Table 4.15: Median Monthly Housing Loan Repayment: suburbs of Scone, Denman, Muswellbrook and Singleton

Monthly Housing Loan Repayment	Scone Suburb	Denman Suburb	Muswellbrook Suburb	Singleton Total
Housing Loan Repayments (\$/monthly)	1200	1112	1300	1441

Source: ABS Census (2006)

Summary of Muswellbrook, Scone, Singleton and Denman Suburb Comparisons

The suburbs of Muswellbrook, Scone, Denman and Singleton display similar demographic patterns across a number of indicators, with differences between the areas relatively small. Differences in the proportions of indicators observed across the areas must be interpreted cautiously due to the high proportions of unknown data, or people that did not state information. Presented below is a summary of the key characteristics of the four suburbs under consideration.

The suburb of Scone has an aging population, with higher proportions of the population of retiree age. Scone demonstrated the:

- highest median age;
- highest proportion of the population over 65 years;
- highest proportion of families without children;
- lowest proportion of students;
- lowest median family income;
- smallest average household size;
- highest proportion of fully-owned homes, reflective of older populations;
- lowest dwelling occupancy rate; and
- highest proportions of dwellings that are semi-detached or flats, units and apartments, also reflective of high proportions of retirees.

The suburb of Muswellbrook is relatively affluent and young with high proportions of the population of young family age. Muswellbrook demonstrated:

- a relatively low median age;
- the highest proportion of the population under 15 years;
- relatively high median household and family incomes, compared to the broader Hunter Statistical Division;
- a relatively high proportion of the population earning weekly incomes over \$1000;
- the highest proportion of one-parent families;
- relatively high proportions of families with dependent children (aged under 15 years);
- the lowest proportion of fully owned homes;
- the highest proportions of homes rented from government housing authorities;
- a weekly median rent that is lower than the broader Hunter Statistical Division; and
- relatively high proportion of students overall.

The suburb of Denman is also relatively young with a high proportion of young families. Denman demonstrated:

- the lowest median rent;
- the lowest median housing loan repayments;
- the lowest proportion of government housing;
- relatively high proportions of couple families without children;
- the lowest proportion of one-parent families;
- the lowest proportion of families with non-dependent children (over 15 years of age);
- relatively low proportions of students overall; and
- the highest proportion of secondary students.

The Singleton combined area demonstrated relatively variable demographics across the four suburbs under consideration (Singleton Balance, Singleton Heights, Darlington Singleton and Huntview). The Huntview suburb demonstrated significant differences to the other suburbs and was relatively young and affluent with the highest median rents and housing loan repayments. Generally the Singleton combined area was relatively affluent and young with:

- the highest proportions of the population demonstrating individual weekly incomes over \$1000;
- the highest proportion of students overall;
- the highest proportion of primary school students;

- relatively high proportions of couple families and families with dependent and non-dependent children;
- the highest occupancy rate of housing;
- the highest median rent;
- the highest proportion of homes being purchased, which is reflective of young families; and
- the highest rate of monthly housing loan repayments.

Housing and demographic data can reflect the residential role and function of an area. Additional mining employees moving to the region with their families may be likely to relocate to areas which display similar socio-economic characteristics to their own. As such it could be expected that: couple families with young children may relocate to Denman, Singleton and Muswellbrook; couples with non-dependent children (over the age of 15 years) may move to Scone, Singleton and Muswellbrook; while couples without children are likely to relocate to either Scone and Denman. One parent families with dependent children are also likely to move to Muswellbrook.

As stated above the four towns displayed many similarities. This includes a reduction in the proportion of young adults 20 - 29 years of age, characteristic of regional and rural areas due to migration of youth to the cities for education, employment and recreational opportunities. This trend was most notable in Denman and Singleton.

4.4 Community Needs and Focus Areas

Developing a preliminary understanding of community needs and focus areas is another key component of the profiling phase. This understanding is valuable in informing subsequent social investment initiatives as part of the company's ongoing community engagement in the region.

In order to identify salient community needs, a review of relevant council plans was undertaken for the Muswellbrook, Singleton, and Upper Hunter LGAs. As some of these plans have been developed following community consultation, they provide a reflection of local community needs and aspirations broadly.

As part of the consultation for the Project, personal interviews were undertaken with approximately 50 local residents / landholders living in proximity to the Project Area. These residents also provided their perceptions of key areas of community need. These community perceptions will be discussed in detail in the current section, along with outcomes of a recent service provider survey undertaken by Coakes Consulting in April 2009. The service provider survey illustrates current perspectives of local service providers on the overall quality of their service sectors as well as potential areas for improvement / key focus areas of need currently challenging their service delivery capacity.

4.4.1 Local Government

Muswellbrook Strategic Plan (2008 – 2010)

The Muswellbrook Strategic Plan (2008 – 2010) is directed towards supporting and sustaining a diversified and expanding economy. The Shire has identified that this could be achieved by increasing the skills level and employment opportunities for 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 promoting and developing Muswellbrook 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:

Industry and Business Development Strategies

These include initiatives which would promote ongoing expansion and diversification of industry and complementary businesses. In this regard, the MSC aims to encourage broader economic industries outside of the region's predominant coal industry. Industries to be considered include tourism, wine, and horse breeding. The Muswellbrook Shire Council also hopes to continue building networks and gaining 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.

Community Perception Strategies

These involve MSC support of local events and beautification of the Shire through ongoing stakeholder and industry support group consultation and partnership.

Population, Infrastructure and Service Provision Strategies

These include 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.

Employment and Training Strategies

These include strategies which have an immediate, short-term, long-term and ongoing focus.

- Immediate plans involve assessing employment needs and labour shortages;
- Short-term plans focus on MSC striving to meet the region's industry needs for current skilled trade shortages;
- Long-term plans are aimed at encouraging and supporting apprenticeship and traineeship positions for the ongoing requirements for skilled trade positions and other related employment opportunities;
- Ongoing MSC plans are focused on sustaining and increasing future employment opportunities for the region's local community and school.

Tourism and Promotion Strategies

These are aimed at promoting the Muswellbrook Shire as a tourist destination. This involves ongoing support for existing and new regional events, tourism associations and tourist facilities such as new signage and information bay improvements.

Singleton Council Community Social Plan (2004 / 05 – 2009 / 10)

In consultation with service providers, target groups and the broader community, the Singleton Council Community Social Plan outlines the following community focus areas and objectives:

Transport

To improve access to public transport for residents by advocating for increased availability within the LGA, Hunter region and for connections from Sydney, as well as developing footpaths and cycle ways to promote lower levels of car dependency.

Health

To ensure access to high quality health services and lobby for expanded services and improved access to health specialists, as well as promoting healthy lifestyles.

Further Education

To ensure that young adults and older people have greater access to local tertiary education and training by developing partnerships with Universities and TAFE and encouraging local business to take on trainees. Enhanced tertiary education opportunities have also been recognised as a means of retaining young people in the area.

Access to Services

To ensure the community is aware of local services by developing comprehensive community directories to assist local groups and organisations.

Housing

To ensure a diverse range of affordable housing options, such as crisis accommodation and old age housing, are available to meet the needs of all sections of the community by working in partnership with the Department of Housing and other community organisations.

Social and Environmental Impacts of Mining

To ensure that negative impacts of current and future mining are minimised through completion of comprehensive social and environmental impact statements and consultation with mining authorities, as well as development of adequate exit policies.

Environment

To increase environmental awareness within the community and afford environmental sustainability, through community group involvement, recycling, composting and tree preservation policies.

Community Consultation and Awareness

To ensure that the community is consulted and aware of issues affecting them through enhanced council protocol and involvement with steering committees.

Upper Hunter Shire Management Plan (2008 - 2011)

The Upper Hunter Shire Council's management plan for the period 2008 – 2011 identifies strategies and objectives for key functions of the Council. Key aspects of the recent management plan (2008 – 2011) around community focus areas include:

Community Services and Education

To assist in the achievement of a high quality of life for Upper Hunter Shire residents by ensuring the community has access to a range of services and resources that will minimise existing and future social problems and maximise participation and community engagement in decision-making processes. Key short term goals include providing continued support for community groups within the Upper Hunter Shire; ongoing support to low income residential facilities at Merriwa and Murrurundi; and engagement of young residents in youth services and activities across the Upper Hunter Shire.

Economic Affairs

To manage tourism and promotion, as well as facilitate economic and business development within the Upper Hunter Shire. This involves developing Scone as a regional livestock selling centre, promoting industrial development at the Scone Regional airport and residential development at Aberdeen, Merriwa and Murrurundi.

Community Amenities

Strategic objectives of this function include the provision of community amenities that meet the needs of the Upper Hunter Shire, including an efficient and effective domestic waste collection service and a self-funding recycling service.

Recreation and Culture

To provide for the public library branches at Aberdeen, Cassilis, Merriwa, Murrurundi and Scone, as well as museums, public halls, cultural services, swimming pools, sporting grounds, parks and gardens, and other sport and recreation. Essentially, the primary goals of this function are to provide the community with safe and enjoyable recreation, cultural and leisure facilities while at the same time promoting a healthier lifestyle and improved well-being by encouraging a greater utilisation of sporting and recreational facilities in the Shire.

Synergies of Key Focus Areas across Councils

The following Table presents an overview of key focus areas across the different council strategic plans and community objectives. While the councils might have identified varying areas of priority, the area of education, including further education and training opportunities in preparation for employment, remains at the forefront of local government planning in the region. Councils shared the view that it was important for their communities to have access to ongoing education and employment training opportunities (e.g., apprenticeships), so as to ensure that their respective communities are afforded the opportunity of working towards a more sustainable future.

Ongoing access to general community services and infrastructure has also been identified as a key priority area across the different LGAs. From the Muswellbrook Council's perspective, the council is also conscious of the potential for better service accessibility in attracting and retaining a skilled non-mining specific workforce into the Muswellbrook Shire. According to the Muswellbrook Shire Council, local residents in the area tend to be more attracted to employment opportunities offered by mining industries, rather than employment in local community service sectors. As a result, this imposes significant constraints on resourcing capacities in servicing the needs of the broader community.

Table 4.16: Synergies Across Key Community Focus Areas

	Muswellbrook LGA	Singleton LGA	Upper Hunter Council LGA
Key Focus Areas			
Education	✓	✓	✓
Higher Education Training / Employment	✓	✓	✓
Service Accessibility - General	✓	✓	✓
Health	✓	✓	
Housing Affordability		✓	✓
Youth Development	✓		✓
Skills Shortage	✓		
Mining Impacts on Way of Life		✓	
Environmental Awareness		✓	
Economic Diversification	✓		✓
Rec and Culture			✓
Tourism	✓		

Source: Coakes Consulting (2009)

4.4.2 Perspectives of Local Residents / Landholders (2009)

As part of the Project, Muswellbrook residents / landholders living in proximity to the Project Area were asked to provide their perceptions of key focus areas of community need. In this regard, the following areas of community sectors were perceived as requiring the greatest improvement:

- Sport and recreational facilities;
- Community and entertainment facilities;
- Roads and infrastructure;
- Youth support; and
- Education and Childcare.

Community respondents identified the need for improved sport and recreational facilities, as well as having more community-friendly entertainment facilities such as a skate park, bowling alley, a local cinema, or an events hall / function centre. Specifically, it was noted that such added opportunities for recreation and leisure would play a key role in local youth development, as it was recognised that a lack of appropriate recreational and entertainment facilities might be underlying the perceived prevalence of dysfunctional youth behaviour within the town.

In addition to the provision of appropriate recreation and entertainment facilities to address youth boredom, community respondents also suggested the need for better support structures in schools to address youth behavioural problems stemming from disadvantaged family circumstances and substance abuse. A number of respondents identified the value of having in place more practical and on-the-job skills / training opportunities, so as to assist youth in the transition to work in trades and industry related professions. Indeed, the MSC has also previously cited the need for improved TAFE facilities, highlighting the prevalence of young people leaving school at an early age and a notable skills shortage within the local labour market.

Community respondents also cited a need for the town's infrastructure to be upgraded, particularly around maintenance of local roads, as well as improvements to existing footpaths and cycling paths. Some respondents also suggested the potential for more restaurants / coffee shops to be developed within the locality, thereby facilitating social gatherings and get-togethers.

Community respondents cited accessibility to local service provision as a key area of need, particularly around health and childcare services. Not only did respondents cite a notable shortage of GPs in the town, but the quality of healthcare infrastructure was also suggested to be in need of further upgrade and improvement. Some community respondents also expressed concerns around a lack of childcare services within the town, including provision of specialised support to children with special needs.

4.4.3 Perspectives of Service Providers (2009)

As outlined in the Council's strategic plans and reinforced through recent consultation, ongoing accessibility to general community services is a key focus area across the Muswellbrook, Singleton and Upper Hunter communities. This observation is not surprising given the potential for ongoing population growth in these localities as a result of industry activities in the region.

As part of the Project, service capacity surveys were undertaken with key service providers (Health, Education, Childcare and Temporary Accommodation) in the Muswellbrook, Singleton and Scone localities (March-April 2009). Local councils in these areas were also surveyed to assess the current land availability for residential development. This section summarises the outcomes of these surveys, addressing current service capacity; perceived

quality of current service provision; key issues / challenges facing each service sector; and service capacity to manage changes in population growth in coming years.

Health

The table below summarises health service provider perceptions in relation to the provision of health services in the Muswellbrook Area. It is apparent that many health service providers identified their quality of service as either good or excellent, with the exception of Aberdeen Doctor's Surgery which indicated that its service was in need of some improvement, due to staffing issues and a shortage of General Practitioners.

The overall waiting period to see a GP in the area does not appear to be particularly lengthy, with most practices offering a same-day turnaround. Most of the health service providers also cited certainty around their capacity to accommodate a further increase in population, again with the exception of the Aberdeen Doctor's Surgery, which was less confident. Most of the services surveyed cited consensus around a shortage of GPs in the area, as well as an ongoing difficulty in attracting and retaining skilled medical professions within the region.

In regard to hospital services, the Muswellbrook District, Denman and Scone hospitals declined to take part in the current survey. However, data from the 2006 service capacity survey undertaken by Coakes Consulting as part of the MAU Project social assessment program, revealed that these hospitals were already operating at / over capacity, and were therefore not confident in their ability to accommodate further population growth in the area.

In relation to the Singleton Hospital, current survey outcomes reveal that the hospital's perceived quality of care was excellent. Indeed, the hospital is currently supported by an extensive network of visiting specialists which include paediatricians, ophthalmologists, gynaecologists and obstetricians. The hospital also offers mental health counselling, as well as diabetic care and sexual health education. When asked about its capacity to accommodate a further increase in population, the Singleton Hospital indicated an ability to increase the number of beds in-house where necessary.

Specialist health service providers who were interviewed included the Scone Dental Surgery and Singleton Dental Care, both of which were confident that they could accommodate a further population increase to the area. The general waiting period to see a dentist does not seem to be lengthy, however, it was noted that most clients tended to be under the Government's Medicare scheme (particularly pensioners) and as a result, these clients usually had to undergo a longer waiting period to see a dentist.

Table 4.17: Health – Perceived Service Quality and Capacity

General Services	Perceived quality of service provision	Number of Staff	Number of patients per day	Waiting period	Clients turned away	Capacity to handle increase in population
Aberdeen Doctor's Surgery	Needs some improvement	1 doctor, 2 nurses	NA	Appointments scheduled on how urgent they are	Sometimes	To some degree
Raworth Cottage Medical Practice-Singleton	Good	3 doctors, 2 nurses	Approx 100	Same day, unless the patient wishes to see a specific doctor	Never	Yes
Brook Medical Centre-Muswellbrook	Excellent	14 doctors (inc 1 surgeon), 21 nurses	200-300	Up to 3 wks for a specific doctor; same day for emergencies	Occasionally	Yes
Singleton Hospital	Excellent for a rural town	14 visiting GPs, 5 permanent doctors, 70 nurses	56 beds in total	NA	NA	Would increase as the need increased
Muswellbrook District Hospital*	NA	NA	46 Beds	NA	NA	No – already over capacity
Denman Hospital*	NA	NA	6 Beds	NA	NA	No – already at capacity
Scone Hospital*	NA	NA	36 Beds	NA	NA	No – already at capacity
Specialist Services	Perceived quality of service provision	Number of Staff	Number of patients per day	Waiting period	Clients turned away	Capacity to handle increase in population
Scone Dental Surgery	Good	1 dentist, 3 nurses	Average of 18	Appointments available within the week	Never	Yes
Singleton Dental Care	Good	1 dentist, 1 hygienist	Between 10 and 30	Between 2 and 4 weeks	Occasionally	Yes – if they could get another dentist

Note: NA = not available / not provided / not applicable

* = Declined to take part in the current Survey. Therefore, the data shown has been retrieved from the earlier 2006 Service Provider Survey undertaken by Coakes Consulting

Source: Coakes Consulting (April, 2009)

Education

Overall, the perceived quality of existing education services in the area has been rated highly, with most describing education service provision in the area as either *Very Good* or *Excellent*. Interestingly, all the schools that took part in the current survey expressed confidence in their capacities to accommodate further population growth in the area, with most indicating an ability to construct demountables where necessary.

When asked what issues / focus areas of need were currently facing the region's education sector, a number of schools identified the need for better structures and programs in place to address students with challenging behavioural problems. Bullying was cited as a frequent occurrence in most local schools. There were also suggestions around the need for better support systems in place for students who come from disadvantaged family backgrounds.

Table 4.18: Education – Perceived Service Quality and Capacity

Primary Schools	Perceived quality of service provision	Current Capacity	Capacity to handle an increase in population?
<i>Muswellbrook LGA</i>			
Muswellbrook South Primary School	Excellent	430	Yes (with additional demountables)
Muswellbrook Public School	Good	700	Yes
St James Primary School	Excellent	400	Yes
Denman Public School	Excellent	220	Yes (with additional demountables)
St Josephs Primary School	Excellent	Unlimited	Yes
Martindale Public School	Excellent	50	Yes
Dunmore Lang Christian Community School	Primary education – good; Christian education - Lacking	35	Yes
St Mary's Primary School	Excellent	200	Yes
Sandy Hollow Public School	Excellent	Over 100	Yes
<i>Singleton Township</i>			
Singleton Heights Public School	Excellent	600	Yes
Singleton Public School	Excellent	448	Yes (with additional demountables)
King Street Public School	Very Good	510	Yes (with additional demountables)
Milbrodale Public School	Adequate	50	Yes
Mount Pleasant Public School	Good	75	Yes (have room for additional buildings)
<i>Scone Township</i>			
Scone Public School	Good	490	Yes (with additional demountables)
Aberdeen Public School	Very good	250	Yes
High School	Perceived quality of service provision	Current Capacity	Capacity to handle an increase in population?
Scone Public High School	Good	Unsure	Yes (with additional buildings)
Singleton High School	Good	1250	Yes
Muswellbrook High School	Good	840	Yes
St Joseph's High School - Aberdeen	Good to Excellent	650	Yes
Combined Primary/High + Other	Perceived quality of service provision	Current Capacity	Capacity to handle an increase in population?
St Catherine's Catholic College - Singleton	Good	850-900	Yes
Singleton Christian College	Excellent	240/250	Yes
Scone Grammar School	Good	550	Yes

Note: NA = not available / not provided / not applicable

Source: Coakes Consulting (April, 2009)

Childcare

While most of the childcare services interviewed were currently satisfied with the quality of their sector's service provision, it is noteworthy that most of the childcare services surveyed are already running either at, or over capacity. In addition, a number of respondents also identified that funding for both capital works and staffing were key service area needs. Therefore, it is not surprising that most of the childcare facilities surveyed cited apprehension over their respective capacities to expand and accommodate a further increase in population.

Table 4.19: Childcare – Perceived Service Quality and Capacity

Childcare Service	Perceived quality of service provision	Current Capacity	Capacity to handle increase in Population
<i>Muswellbrook LGA</i>			
Muswellbrook Preschool Kindergarten	Preschools-Excellent Day care-Adequate	80 per day	No
Kate's Kindy Pty Ltd	Excellent	46 per day	Yes – only marginally
ABC Learning Centre Muswellbrook	Excellent	76 per day	No
Muswellbrook Out of School Hours	Needs some improvement	Mornings – 20 Afternoons – 30 Vacations – 45	Yes
Denman Children's Centre	Needs Some Improvement	39 per day	Yes – only marginally
<i>Singleton Township</i>			
St Patricks Early Education Centre	Adequate	76 per day	Yes – only marginally
Singleton Heights Preschool	Good	40 per day	Yes – only marginally
Singleton Preschool	Excellent	180 per week	No
Coleen Gale Children's Long Day Care	Needs Some Improvement	91 per day	Full day – Yes After school – No
Rainbow Early Learning Centre	Good	46 per day	Yes
<i>Scone Township</i>			
Upper Hunter Family Day Care	Needs some improvement	26 carers (provide in home care)	No
Scone and District Preschool Inc	Excellent	147 per week	No
ABC Scone	Adequate	29 per day	Yes
Aberdeen Preschool	Very Good	20 to 25 per day	Yes

Note: NA = not available / not provided / not applicable

Source: Coakes Consulting (April, 2009)

Temporary Accommodation

The influx of a transient industry workforce, particularly during the construction phase of a large-scale development Project, is likely to add further strains on temporary accommodation availability in the region. Therefore, temporary accommodation service providers were surveyed in Muswellbrook, Singleton and Scone (hotels, motels, and caravan parks included) to assess the sector's capacity and perceived quality of service provision. It should be noted that not all temporary accommodation providers took part in the survey.

As outlined in the following table, most establishments reported relatively high average occupancy rates during the year. An average 79% of the surveyed establishments' total clientele were contractors / workers from surrounding mine operations, with a further 8.1% comprising tourists and visitors to the region. A number of temporary accommodation establishments were also noted to cater to conferences and conference group events, of which these other business clientele comprised approximately 12.9% of the total average clientele across the establishments surveyed.

When asked about their occupancy trends over the last five years, approximately 60% of those establishments surveyed suggested that their occupancy rates had increased, with a smaller percentage (26.7%) indicating that occupancy had remained the same. Some respondents (6.7%) also noted that their occupancy rates were largely determined by seasonal fluctuations, such as periodic workforce influxes or seasonal agricultural / viticulture events and activities. It was noted by most of the surveyed accommodation providers that given the current economic climate, the number of visiting tourists to the area had fallen substantially over the last few months relative to previous years.

When asked what key issues were currently facing the region's temporary accommodation service sector broadly, most survey respondents cited a shortage of accommodation availability in the area as a result of pressing demands from the region's expansive industry activities. These respondents also noted that the region's prevalent shortage of temporary accommodation availability had placed upward pressures on accommodation affordability.

Table 4.20: Temporary Accommodation – Perceived Quality and Capacity

Accommodation Service	Perceived Quality of Service Provision	Current Capacity	Average Occupancy
Motels			
Grapevine Motel - Muswellbrook	Excellent	17 Rooms, 32 Beds	80%
Denman Motor Inn – Muswellbrook	Adequate	15 Rooms, 34 Beds	70%
Baybrook Motor Inn – Muswellbrook	Good	16 Rooms, 30 Beds	80%
John Hunter Motel – Muswellbrook	Excellent	70 Rooms, 140 Beds	53%
Wayfarer Motel – Muswellbrook	Excellent	23 Rooms, 30 Beds	70%
Hermitage Motel – Muswellbrook	Good	37 Rooms, 75 Beds	60%
Red Cedar Motel – Muswellbrook	Good	27 Rooms, 55 Beds	70-80%
Noah's in the Valley - Muswellbrook	Good	36 Rooms, 72 Beds	70%
Colonial Motor Lodge – Scone	Good	24 Rooms, 46 Beds	70%
Scone Motel Inn - Scone	Good	18 Rooms, 42 Beds	70%
Golden Chain Aberdeen Motel – Aberdeen	Good	15 Rooms, 23 Beds	NA
Benjamin Singleton Motel – Singleton	Adequate	10 Rooms, 20 Beds	85%
Singleton Parkland Motel – Singleton	Good	30 Rooms, 60 Beds	85-90%
Country Motor Inn – Singleton	Good	49 Rooms, 90 Beds	80-85%
Francis Phillip Motor Inn – Singleton	Excellent	55 Rooms, 76 Beds	75%
Quality Inn Charbonnier – Singleton	Good	70 Rooms, 100 Beds	NA (Very busy during the week)
Hotels			
Eaton's Hotel – Muswellbrook	Needs a lot of improvement	13 Rooms, 22 Beds	60%
Denman Hotel – Muswellbrook	Excellent	5 Rooms, 10 Beds	80%
Muswellbrook Hotel	Needs some improvement	11 Rooms, 22 Beds	40%
Railway Hotel – Muswellbrook	NA	16 Rooms, 23 Beds	80%
Golden Fleece Hotel – Scone	Adequate	28 Rooms, 50 beds	50%
Royal Hotel – Scone	Adequate	22 Rooms, 59 Beds	75%
Commercial Hotel – Aberdeen	Needs Some Improvement	4 Rooms, 9 Beds	50-60%
Royal Hotel – Singleton	Very good	22 Rooms, 35 Beds	100%(weekdays) / 33% (weekends)
Percy Hotel – Singleton	Good	10 Rooms, 11 Beds	60%
Caledonian Hotel – Singleton	Adequate	15 Rooms, 17 Beds	90%
Serviced Apartments / Caravan Parks / Cabins			
Sandy Hollow Tourist Park – Sandy Hollow, Muswellbrook	Good	116 Registered Sites, 3 Motel Units, 10 Cabin/Cottages; 26 Beds	60%-70%
Pinaroo Leisure Park – Muswellbrook	Good	60 Cabins (assumes each Cabin's minimum capacity)	60%-70%

Accommodation Service	Perceived Quality of Service Provision	Current Capacity	Average Occupancy
		is two – 120 Beds total)	
Riverside Caravan Park – Muswellbrook	Good	25 Cabins (assumes each Cabin's minimum capacity is two – 50 Beds total)	60%-70%
Scone Highway Caravan Park – Scone	Good	10 Cabins, 31 Beds	95%
Scone Caravan Park - Scone	Needs Some Improvement	2 Cabins, 10 Units, 10 Caravans, 1 Cottage, 32 Powered Sites, 9 Permanent Caravans; 50 beds in total for workers	20-25%

Source: Coakes Consulting (April, 2009)

Residential Land Availability

The following table outlines current availability of land for residential development, and the number of lots pending approval in Muswellbrook, Singleton and Scone. It is apparent from the table below that the Muswellbrook LGA, in particular, has a number of proposed new lot developments currently in place for approval. This initiative is consistent with the Shire's strategic initiatives for implementing greater residential accommodation availability as an incentive for attracting a skilled workforce into the region.

Table 4.21: Residential Housing and Accommodation – Proposed and Approved Lots

Proposed Subdivision	Proposed New Lots	Approved Lots
Muswellbrook LGA		
Eastbrook Estate	1100 New Lots in an integrated residential estate community	Stages 1 – 10 completed Stage 11 under construction
NorthView Estate	213 New Lots	Stage 3 (47 Lots) approved
St Mary's Estate	157 New Lots	All blocks have been released; Construction of the estate is still underway
Denman (Cnr Bell and Almond St)	25 New Lots approved Application for 50 New Lots is under consideration	Construction on the 25 New Lots is yet to commence
Yammanie (Ironbark Road)	157 rural residential lots in South Muswellbrook, representing an extension from the southern end of Ironbark Road	Stage 1 (20 Lots) have been approved
Woodlands Ridge	38 New Rural Lots	Stages 2 and 3 Completed
Denman Township	25 lot subdivisions at the corner of Dell Street and Almonds Street, Denman	25 Lots already approved under this subdivision
Singleton		
The Pinnacle	100 New Lots	Stage 6 – 29 Lots currently selling
The Retreat	100 New Lots	Stage 10 – 13 Lots currently selling
Bridgman Ridge	Potential for 750 New Lots	Stage 1 – 27 Lots currently selling
Gowrie	35 New Lots	Approval granted, in initial planning stages
Upper Hunter Shire		
Rosedale Estate Murrurundi	109 New Lots	Stage 1 – 17 Lots Currently Selling
Oxley View Estate Merriwa	120 New Lots	Stage 2 – 15 Lots Currently Selling
Aberdeen Heights	150 Lots Proposed	Planning Consent for first 20 Lots Given
Figtree Montie	130 Lots Released	130 Lots Released

Source: Muswellbrook Shire Council Local Environmental Plan (LEP, 2009) Zoning Plans; Singleton and Upper Hunter Shires (Personal communication, April 2009)

4.4.4 Summary of Community Needs

The review of current council plans and strategies, alongside broader community views and service provider interviews, have revealed the following focus areas of need:

- Accessibility to ongoing education and employment training opportunities, particularly in relation to support for local youth development in the Muswellbrook area;
- Improved infrastructure and service provision across the community, with particular emphases on health, education and recreation:

- Addressing skills shortage in the region, particularly in relation to GPs and childcare / primary school teachers; and
- Diversification and growth of local economic and business initiatives.

4.5 Changes in Community Attitudes towards Mining over Time

In conjunction to appreciating the social and community context within which the Project will be operating, it is also imperative to recognize community attitudes, expectations and perceptions toward mining more generally.

The Muswellbrook community has, over the last few decades, been a close neighbour to the coal mining industry. Given that Coakes Consulting has undertaken extensive community consultations with the communities in the Muswellbrook locality over the past 10 years, there is sufficient data available to enable an understanding of community attitudes towards mining in the area over time.

In 1999, Coakes Consulting undertook a social assessment program in the Muswellbrook area for the original MAN mine development proposal. This social assessment entailed a highly involved and extensive community consultation process with key stakeholders and Muswellbrook residents regarding the MAN mine development proposal. There was a significant level of community angst at that time, due to the concurrent development of several other mining operations in the region. Furthermore, the economic climate during the time of this social assessment was disheartening. For instance, there were high rates of unemployment, local retrenchments from some mining operations, as well as changes in job structures which had resulted from the downsizing of some mining operations.

There were also overall sentiments that mining companies in the area were not contributing enough to the Muswellbrook community and local infrastructure. Therefore, given that the community was less appreciative of the potentially positive economic change and growth which the proposed MAN mine development could bring to the region, there was greater community apprehension over the negative impacts of mining, especially the potentially harmful and detrimental environmental effects.

Since mining activities commenced in the Muswellbrook region, Muswellbrook residents, especially those who live on rural properties in close proximity to mining operations, have been exposed to environmental impacts resulting from neighbouring operations. The social assessment undertaken for the MAN mine development proposal revealed that the main environmental impacts concerning Muswellbrook residents included dust, noise and vibrations from blasting activities on site, as well as visual impact. Landholders were also particularly likely to raise issues relating to water contamination as a result of increased pollutants. In addition, due to the historical importance of agriculture in the area, there were also significant community concerns around increasing land use by the industry, as well as the implementation of responsible land rehabilitation measures post mining.

In essence, the social assessment program undertaken for the MAN mine development proposal reflected a substantial lack of community trust in the mining industry. Many in the Muswellbrook community felt that mining companies needed to be more upfront with their decisions and activities in the area, including their environmental management practices by providing the community with greater transparency of emissions and monitoring data. Many also felt that engagement efforts by mining companies at that time were merely a “tokenistic” process.

On approval of the MAN mine development project in 2001, Mt Arthur Coal committed to building trust with the Muswellbrook community by employing a dedicated resource to undertake community relations activities in the Muswellbrook area during the operational phase of the mine. The company also committed to providing the community with regular updates on their environmental management practices, including emissions and monitoring data. These efforts paved the way for a sound trust bank to be established between the Muswellbrook community and the company. Indeed, this trust was reflected in the social assessment which was undertaken more recently by Coakes Consulting for the MAU (2005 – 2006), whereby most of the stakeholders who were consulted commented on their appreciation of the company's existing communication and consultation mechanisms.

The recent economic and infrastructure growth apparent in the Muswellbrook locality is likely to have been predominantly fuelled by the extension and development of several coal mining operations in the region over the past few years. Therefore, the social assessment undertaken for the MAU Project revealed significant community

interest in the potential economic benefits which the proposed MAU was likely to provide. For instance, two-thirds of those Muswellbrook residents who were surveyed described benefits to the local economy as one of the key positive outcomes of mining in the area. According to these residents, such benefits entailed not only local employment and training opportunities, but also the potential attraction of new businesses to the area. In 2007, the Muswellbrook Shire Council reported that a substantial proportion of local businesses in the Shire (27% of 88 businesses surveyed) relied primarily on supporting the mining or power generation industries (Muswellbrook Shire Skills Audit, as cited in the ACARP study, 2007). Therefore, it is apparent that the broader community acknowledges that a strong industry presence does offer substantial benefits to the Muswellbrook and regional economies.

It is, however, noteworthy that alongside current community optimism over the Project, there were also palpable concerns over the potentially detrimental cumulative effects of increased mining activities in the region. Discussions of cumulative mining impacts touched on increasing strains on local services and infrastructure, particularly the health sector's capacity to meet the demands of a fast-growing population. There were also concerns over escalating pressures on housing demand, affecting residential and rental availability as well as affordability.

Of primary concern to the Muswellbrook community was that of cumulative environmental impacts, including dust, noise / vibration from blasting, and compromises to water quality and quantity. Many felt that additional mining activities in the area were also likely to increase traffic impacts and affect the area's visual amenity. There were also concerns around the industry's increasing encroachment on rural and agricultural properties.

The outcomes of the social assessment program undertaken for the MAU echoed those of the social assessment undertaken for the Anvil Hill Project (now known as the Mangoola Project) which Coakes Consulting was also involved in, on behalf of Centennial Coal (now Xstrata).

In 2005, at around the same time as the MAU Project's first round of community consultation, Muswellbrook community perceptions towards the proposed Anvil Hill Project were assessed through the administration of a community wide survey. Community perceptions were very similar to those expressed towards the MAU

Project, with most Muswellbrook residents expressing positive anticipation of the economic benefits which new mining developments had to offer the region. Interestingly, even those who disapproved of the Anvil Hill proposal believed that the Project itself promised to bring about significant economic change and benefits to the area. Not surprisingly, the community survey also revealed community concerns over cumulative environmental impacts resulting from the large scale of mining activities in the region, similar to those identified in the MAU social assessment program.

The following timeline summarises the changes in Muswellbrook's community perceptions towards mining over time, since the MAN mine development proposal in the late 1990's. It is clearly evident that community perceptions towards any new mining development proposals in the area rely heavily on a snapshot of the community context at that time.

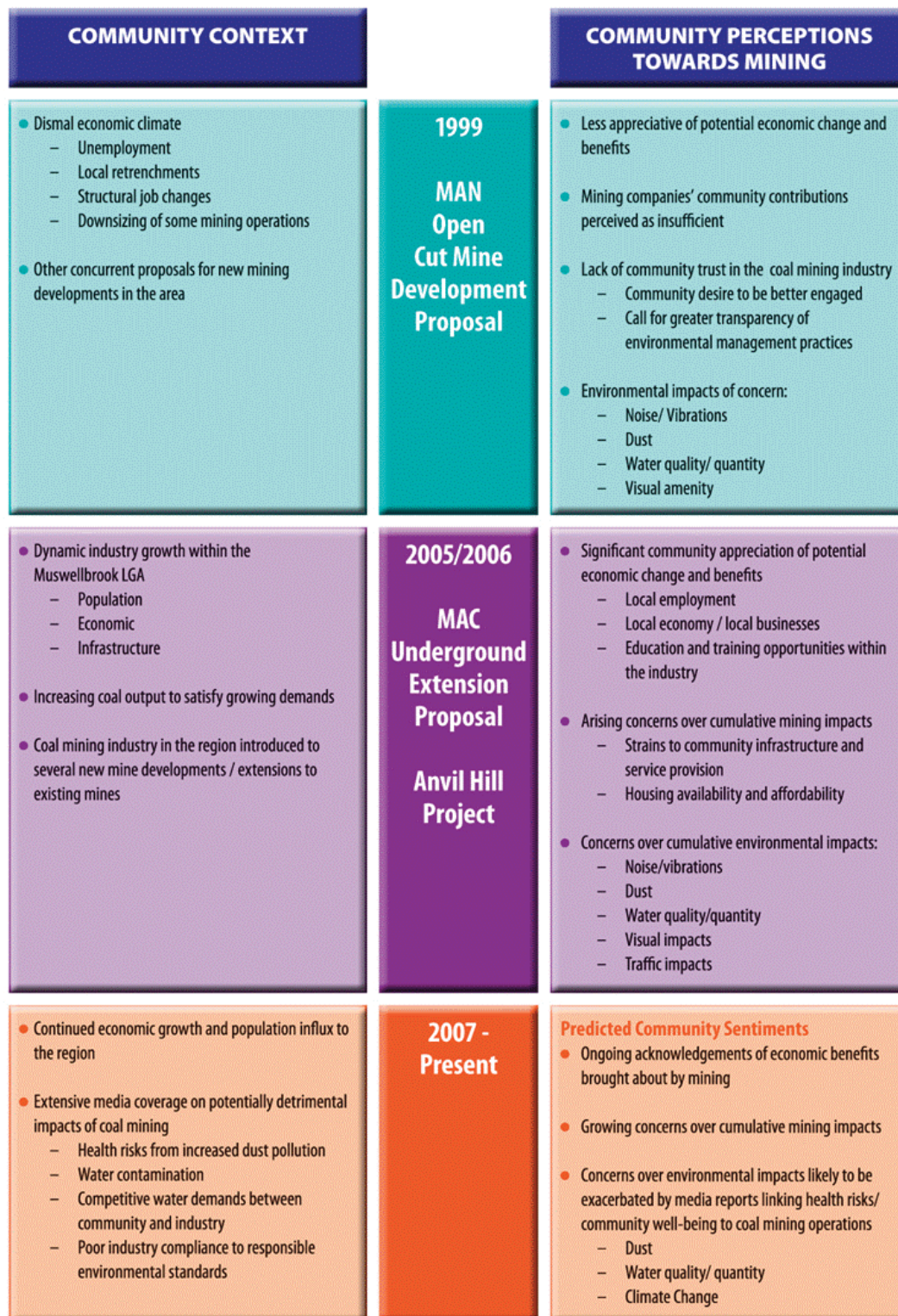


Figure 4.39: Changes in Community Attitudes toward Mining
Source: Coakes Consulting (2008)

Based on consultation outcomes and analyses of Muswellbrook's community perceptions towards their coal mining neighbours, a recurrent theme has surfaced. While it is evident that the Muswellbrook community has grown receptive to the potentially positive economic change and growth which new mining developments have to offer to the region; many community residents are concerned about potentially detrimental environmental impacts arising from the industry's operations. As development / extension proposals continue to gain approval, it is likely that community concerns and anxiety around cumulative impacts will increase.

Given the cumulative impact focus within the Muswellbrook locality, an increasing sense of apathy is evident among residents. For particular residents, this appears to be compounded by the fact that whereas once they had to deal only with one company, they now have to deal with many. This suggests a more collaborative approach to social involvement across the mining industry within the region may be appropriate.

5.0 Current Community Attitudes towards the Project

The information presented below provides a summary of the preliminary findings of the landowner engagement (undertaken in January / February 2009), as part of the SIA program for the Project. This information should be interpreted in conjunction with the Interconnectivity analysis® for the Project (refer to Section 5.2), which provides a more in-depth analysis of community perceptions of impact and impact drivers, rather than just frequency of response.

The figure below highlights the key issue themes emerging from the engagement. Each of these issue themes is further defined below.

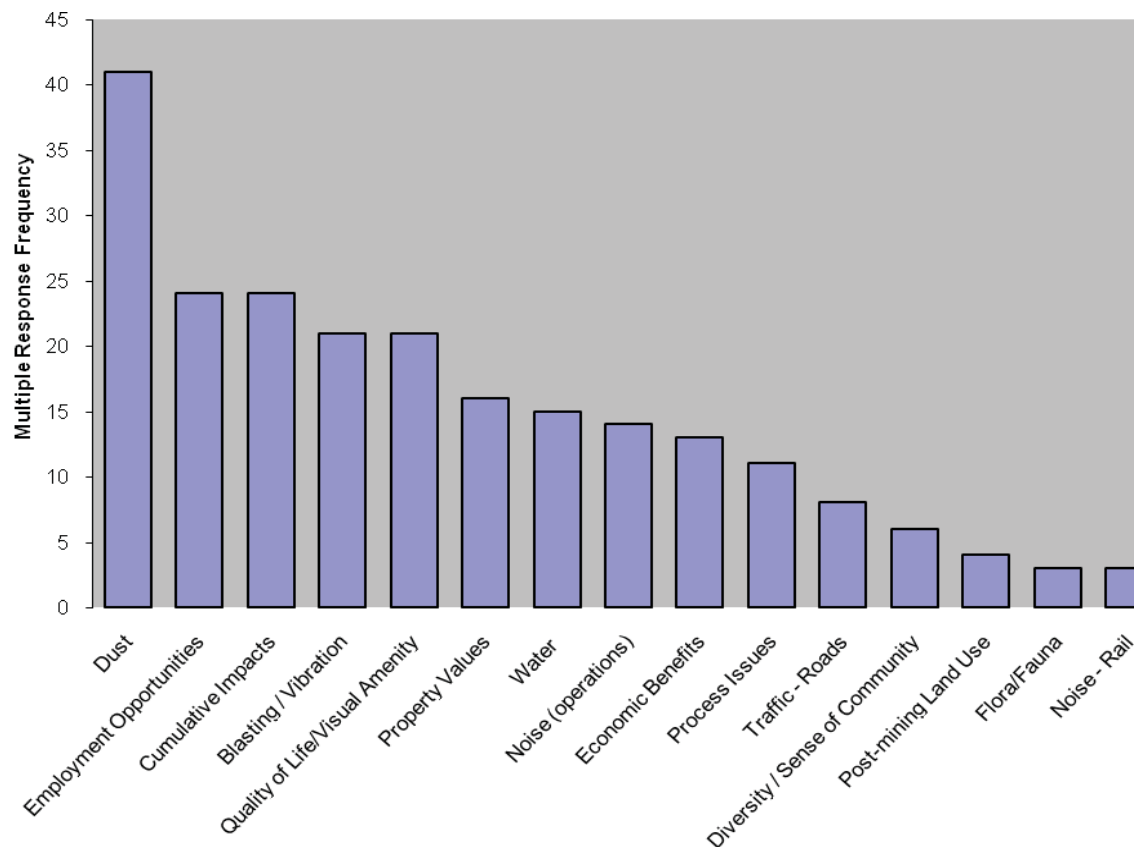


Figure 5.1: Resident/Landowner issues themes associated with the Project identified through engagement (as at 27 Feb 2009)

Source: Coakes Consulting (2009)

As the figure highlights, dust levels and employment were the most frequently identified issue themes identified by residents. Other salient issues included blasting / vibration, property values, cumulative impacts and general impacts on visual amenity / quality of life. Each of these issue themes are discussed in the following sub sections. Where appropriate, quotes have been used to highlight and add further qualitative depth to the issues identified.

5.1.1 Dust

Dust was the most prominent issue of concern for residents. Residents concern relating to dust was mainly attributed to the need to constantly clean vehicles, pools and outside surfaces around their homes, the general frustration associated with these activities and the constant reminder of the presence of mining in the locality. Other landowners / residents, particularly those reliant upon their tanks for drinking water, made comments regarding the amount of dust present in their water tanks.

The severity of dust impacts from existing operations was seen to be highly dependent on weather conditions (i.e. strength of wind, wind direction and moisture levels). It was suggested that mining operations (e.g. blasting and earth moving) should be minimized or ceased during unfavourable weather conditions. Typical comments included:

"When the wind blows in the right direction, we get fine dust on our property"

"Dust affects everyone in the whole valley"

There was a general perception that dust impacts were a cumulative issue in the area due to the presence of many mining operations around the town.

Adding to residents' concern was the perception that there had been little or no acceptance of responsibility from the nearby mine sites. While contribution to the issue had in some cases been acknowledged, little joint industry action had been taken as a result. Although residents were aware of Mt Arthur Coal's efforts to minimise dust, they felt that further efforts needed to be made in this regard.

5.1.2 Employment

There was a wide recognition of additional local employment opportunities that may be created and flow on effects to local businesses in the area. Over a third of respondents spoke about the positive impacts of employment on both those people directly employed by the Project and the flow on economic benefits to the community. Typical comments included:

"More permanent positions mean people will stay in town and bring family".

"More employment opportunities for youth when they are out of school"

Residents outlined that Mt Arthur Coal's current contribution to local employment was significant, however it was also noted that the residents perceived that many employees reside in towns outside of Muswellbrook, namely Singleton and Scone. This was seen to have economic implications, with employees spending outside of the local area. Furthermore such an impact was perceived to extend to infrastructure provision, with better services perceived to be located in these other townships. It was expressed that more needed to be done to encourage employees to reside locally and ensure that economic benefits of the Project remained within the town of Muswellbrook itself.

"Where do employees live currently – I bet most live outside of Muswellbrook"

Residents / landowners also felt that increased mining in the area had resulted in a decline in other local industries, specifically agricultural and other local businesses. The attraction of higher wages within the mining industry was seen to have resulted in a skills drain from other sectors and had caused additional difficulties in attracting and retaining staff in non-mining related positions. However, it was also acknowledged that other causes, including the recent dairy deregulation, had also contributed to the decrease in local agriculture.

5.1.3 Cumulative Impacts

Many residents could not identify from what mining sites they were experiencing impacts due to the proximity of a number of operations, or felt all operations were affecting them sometimes. Consequently there was a general concern that the proposal had the potential to result in further negative impacts such as: dust, blasting, noise, water, traffic, impact on property value, quality of life and sense of community. Typical comments included:

"It's very hard to differentiate between which mine the impacts are coming from".

As outlined in relation to dust impacts, some residents felt that a joint sector approach needed to be taken toward addressing cumulative impacts. Some felt that this would assist in ensuring that each mining company take responsibility for their impacts, rather than continuing to "pass the blame" onto one another.

"A proper cumulative impact study needs to be done"

There was also some concern as to whether impact limits / criteria were being raised to allow for increased mine production and expansion. Specifically, some residents were concerned that additional approvals required for mine expansions were resulting in a higher set of limits each time.

"They start out with one set of consent limits but this keeps on being increased. It's not fair on the neighbouring landholders."

5.1.4 Blasting / Vibration

Blasting vibration from both Mt Arthur Coal and surrounding mine sites was perceived to be causing damage (cracking) in nearby homes by some landholders. Many respondents expressed frustration at the need to constantly repair cracks in their home and the money associated with carrying out these repairs. In addition to cracking, damage to household contents caused by objects falling / breaking was also of concern. Typical comments included:

"Blasting from Mt Arthur Coal makes our house shake"

"We know if there has been blasting when we were away, as we have to keep straightening the pictures in the hallway"

Several residents suggested that Mt Arthur Coal undertake structural inspections and carry out repairs on those homes that are affected by cracking.

Some respondents noted that blasting noise had decreased in recent years, whereas others were concerned by the severity of recent blasts.

"Blasts have improved recently – they're not as extreme anymore"

One resident in the racecourse area was particularly concerned with the effect that blasting has on their horses.

"Our horses get spooked by the blasts".

Although blast notification schedules in the past were received regularly by many residents and were seen to be a good initiative of the company, others commented that they received the blast notification after the event, and therefore took no notice of future notifications.

5.1.5 Quality of Life / General Visual Amenity

Quality of life was an issue of concern for many residents. A number of residents indicated that they had moved and built homes in the area as it offered a particular lifestyle. Frustration and stress caused by dealing with a range of mining impacts was linked to a perceived decrease in overall quality of life. Typical comments included:

"If we had known we wouldn't have built here".

The potential for a larger open cut pit was also of concern to a number of residents as it was seen to have the potential to interfere with their enjoyment of the natural landscape.

"We didn't buy here to look straight into a mine – it is ugly"

The construction of visual bunds was praised by most residents as a positive strategy for the management of the visual impacts of the mine, particularly where rehabilitation had been undertaken effectively. Other residents noted that they could see lights from the operations at night.

5.1.6 Property Values

For a number of stakeholders there was a concern that individual property prices may decrease due to proximity to operations and potential impacts. There was a degree of frustration, concern and uncertainty in relation to Mt Arthur Coal's property acquisition processes and policies, and how the company determined whether a property should be purchased and the process to be undertaken. There was a perception that some residents were being offered market value for their property, where as others were being offered higher prices, resulting in confusion. Typical comments included:

"How come two houses next door to each other can be worth different amounts?"

"How will I know if I have to sell"

For some, it was perceived that changes in company staff/management had resulted in inconsistent and untimely information and advice. Some felt that they had received little information as to the processes used for determining whether a property falls within a designated zone of affectation or management. Respondents suggested that more information was needed from Mt Arthur Coal in regard to property acquisition and the company's policy for property purchase.

While some residents were concerned about deflating property values, others cited the potential for property prices in the area to increase due to a greater demand for housing in the area.

5.1.7 Water Quality, Source and Flow

The potential for contamination of drinking water (rain water tanks) was a large concern for residents. Several residents had installed water filters, however this had not completely mitigated the problem. Typical comments included:

"There is dust in water tanks - we have a water filter but it is not that good".

"At different times we've turned the tap on and the water colour is orange".

There was also concern from residents that Mt Arthur Coal's mining operations had the potential to decrease / deplete underground water supplies and some residents had noted a decrease in the amount of available groundwater in recent years. Some residents noted that localised road flooding had occurred along Denman Road and

was perceived to be caused by the mining operations. The potential cumulative impact on water resources including quality and quantity from all mining operations in the area was also raised.

5.1.8 Noise (Operations)

Operational noise (including truck / machinery movements and reversing beepers on machinery) was raised as an issue by a number of nearby residents. Residents acknowledged company efforts to reduce the impact of operational noise but they did not want current noise levels to increase. Residents were concerned with the potential cumulative impact of noise from all mining operations within the area. Typical comments included:

"I can hear the beepers, but I don't know which mine they come from"

Residents noted that the extent and times that they can hear operations depended upon the time of day and the time of year, as well as the wind direction. Questions were raised as to how such wind patterns have been used during noise modelling and whether the area experiences unique wind patterns, which may further exacerbate noise.

5.1.9 Economic Benefits

Economic benefits to the region were seen to result due to the flow on effects generated by new employees moving into the area. It was felt that there was a lot of potential for regional growth, provided that businesses and service providers were provided with enough time to facilitate growth planning. Mt Arthur Coal's community contributions (in the past and potential contributions in the future) were seen to be beneficial at the community and regional level.

5.1.10 Community Engagement Process

Among those interviewed, there was a very positive recognition of Mt Arthur Coal's community engagement processes. In this regard, the company was recognised as being 'upfront and honest' in their engagement approach, and it was acknowledged that staff had taken the time to establish good relationships with the community and become involved in community activities. However, some residents were somewhat apprehensive in regard to their future relationship with the company. Typical comments included:

"I've been satisfied with the information I've been given – (Mt Arthur Coal) seem to be the most forthcoming".

"Lately, we've had very little contact as a result of the complaints we've made".

Some residents expressed a lack of trust in the development approval process generally. In this regard it was felt that in other development processes, community members had not had the opportunity to raise concerns nor have these addressed.

"I strongly believe that nothing will come of this consultation because nothing has come as a result of past consultations".

5.1.11 Traffic – Roads

In relation to traffic, residents noted the potential for current levels to increase, not only as a result of the Project, but as a result of an increase in mining generally in the area. Residents were also concerned regarding the potential impact of increased traffic volumes on existing road conditions.

Mixed reactions were also raised in relation to the proposed realignment of Edderton Road. While it was acknowledged that the realignment would benefit the local community by providing an improvement to the existing road condition (i.e., wider and new bitumen) and bringing about improved road safety, there were some concerns from residents residing close to the new turn off from Denman Road, particularly with regard to increased traffic flow, brakes squealing as vehicles slowed to turn, and lights shining into properties.

Traffic impacts from mine vehicles were also seen to cause road safety issues, predominantly along Denman Road and Thomas Mitchell Drive. Such issues included pulling out onto busy roads and vehicles overtaking other vehicles at excessive speed. Suggestions for improving road safety included the provision of a round-about at the corner of Denman Road and Thomas Mitchell Drive to allow vehicles to safely turn onto Denman Road.

5.1.12 Sense of Community

For some residents / landholders, sense of community was an important issue. New families moving to the area, as a result of mining employment, and old families leaving the area due to a local decrease in agricultural industries, meant that social networks were often lost and once close knit communities had become increasingly disparate.

Many residents were aware of several properties that had been acquired and were being maintained by different mining companies.

"I don't know who my neighbours are any more"

As a result, there was concern surrounding the general upkeep of these properties. Specifically, residents wanted assurance that neighbouring properties were well maintained. There was also some concern that mine owned houses may be rented to people who participate in antisocial behaviour.

5.1.13 Post-mining

The sustainability of the local area in both social and economic terms was an issue of concern for some residents. In particular, concerns related to sustainable employment post mining.

"I'd like to think that the town will still thrive once mining ceases"

Residents saw the need to ensure that other local industries remained viable in the area to prevent the town from decline, once large mining companies cease operations. In particular, residents asked questions regarding final landform design and the mine closure planning process.

5.1.14 Flora / Fauna

Residents also raised concerns about the overall effect of mining on the general environment. The potential effect of mining activities on flora and fauna were some of the more commonly identified general environmental concerns. Some residents felt that in recent times there had been an increase in the numbers of kangaroos in the area and on local roads.

5.1.15 Noise (Rail)

The movement of coal trains in the Antiene area received mixed response from nearby residents. While there were a small number of residents who felt that the noise impact from the trains had reduced in recent years, due to quieter carriages and quieter braking systems; the majority of residents felt that there had been a steady increase in the amount of rail noise over time. The impact of noise on residents was primarily related to sleep disturbances during the night. Furthermore, rail noise during the day was also considered intrusive and frustrating, particularly noise associated with coal being loaded into carriages, wheels turning, idling noise and breaks squealing. Typical comments included:

"The train noise is driving me crazy"

"The trains are not so noisy anymore. Since they changed to the QLD rail company they have been quieter – the breaks have less squeal".

5.2 Inter-relationships Between Issues

A methodology known as Interconnectivity Analysis® has been used to identify and illustrate the complex and interconnected nature of the relationships between the issues identified during discussion with residents. Such an analysis does not focus on frequency of response, but identifies the inter-relationships that exist among issues to obtain an improved understanding of issue drivers i.e. those factors that may influence or contribute to stakeholder perceptions of particular issues. During the discussions with residents, a number of key emerging issue themes or 'hubs' associated with Mt Arthur Coal and its operations became apparent.

The collective issue theme hubs and the inter-relationship of issues within each hub are illustrated in Appendix 2. Examination and analysis of the interconnectivity of issues is important as often key issue theme areas e.g. information provision, trust in the company, may be underlying drivers of other issues.

Overall, four main issue hubs emerged from the analysis namely:

- Roads
- Social and economic benefits
- Community engagement and trust
- Cumulative impacts

5.2.1 Roads

Residents expressed concerns around the proposed realignment of Edderton Road, suggesting that this would change the current traffic flow, especially along Denman Road and Thomas Mitchell Drive. These residents also cited concerns regarding an increase in traffic volumes as a result of the proposed Edderton Road realignment, highlighting the need for further upgrades and improvements to current road conditions.

The proposed construction of visual bunds has been noted by some residents as a positive initiative in providing good visual screening of the operation from roads.

5.2.2 Social and Economic Benefits

Local residents and nearby landowners agreed that there would be substantial local and regional socio-economic benefits generated by further mining development in the region. In particular, residents noted that an increase in population, as a result of industry growth in the region, would initiate improvements and upgrades to existing infrastructure and services for the community. Some residents also noted the potential economic benefits for local businesses and suppliers, as a result of local industry expansion.

There was also widespread recognition of the extent of local community contributions that Mt Arthur Coal currently makes to the region. Some residents suggested that Mt Arthur Coal should form a strategic partnership with the local council to more effectively address community focus areas of need. Some residents also cited that the current application process for funding was too complicated and that funding needed to be more accessible across a greater number of local groups and organisations.

5.2.3 Community Engagement and Trust

Residents and neighbouring landowners recognised that Mt Arthur Coal has always been “community conscious”, with the engagement and community relations programs as part of the earlier MAN and MAU Projects being acknowledged as upfront and honest. Further, many of these residents had also established strong relationships with Mt Arthur Coal personnel.

5.2.4 Cumulative Impacts

As discussed in the earlier section, many residents had concerns that the Project might result in further negative impacts such as dust, noise, traffic, water, impact on property value, as well as visual amenity. For instance, some residents noted that the ongoing noise from a number of neighbouring mining operations was a constant reminder of the presence of mining at their doorstep. Residents also cited that the ongoing impacts of blasting from multiple mines might cause further damage to their homes, thus further compromising the value of their properties.

6.0 Impact Assessment

6.1 Workforce Impacts – Population Impact Projections

Population changes often associated with large scale development Projects, which require construction and operations workforces to be accommodated and serviced, are likely to result in a range of social impacts such as changes to the capacity of local community infrastructure and services to cope with a growing population. These social impacts not only affect individuals, but also families and broader communities.

This section of the report discusses the population changes and related impacts which are likely to result from an influx of construction and operations workforce into the area as a result of the Project, based on estimated workforce numbers and residential trends provided by Mt Arthur Coal (April 2009). Outcomes of the population impact analysis will also be interpreted in light of whether existing service and community infrastructure have the capacity to accommodate the projected population changes associated with the Project across its construction and operational phases.

6.1.1 Construction Phase

The construction phase workforce for the Project is estimated to peak at 240 workers at any one time. The construction workforce is expected to be at its peak during the years 2013 and 2014.

Previous work carried out by Coakes Consulting has found that in rural or remote locations, given the specialized nature of construction, an approximate benchmark of 20% of a construction workforce tends to be recruited locally. Therefore, the current assessment assumes that 80% of the construction workforce (192) will be sourced from outside the local area, with a further 48 construction personnel sourced locally. Given the temporary nature of construction, it is also assumed that the construction workers will not be accompanied by their families and that most of the onsite workers are likely to be residing in temporary accommodation in proximity to the operation and within the locality.

For purposes of the current assessment, it is further assumed that the construction workforce will reside in similar localities as Mt Arthur Coal's current workforce. The following figure provides a break-down of current employee residential locations. It is apparent in reviewing the figure below, that over 80% of Mt Arthur Coal's workforce currently resides in the Shires of Muswellbrook, Singleton and Upper Hunter. Therefore, the current assessment has assumed that the construction workforce for the Project will also predominantly reside in temporary accommodation in the Muswellbrook, Singleton and Scone localities.

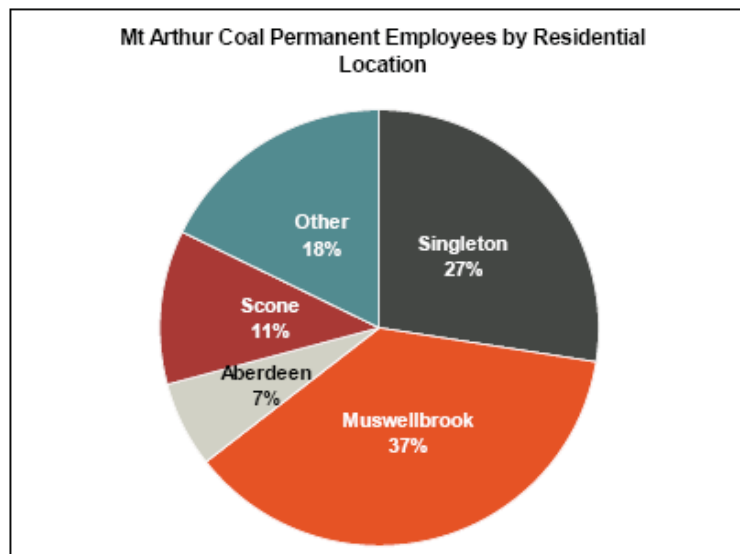


Figure 6.1: Mt Arthur Coal Permanent Employees by Residential Location (2008)

Source: Mt Arthur Coal Consolidation Project Update to the Muswellbrook Shire Council (April 2009)

Outcomes of this survey are illustrated in Table 4.20 in Section 4.5.3.

In reviewing temporary accommodation availability in the region, the following scenarios were assumed:

- Workers will be required to share the same rooms; or
- Workers will not be sharing the same rooms, with the exception of worker dormitories.

Outcomes of the temporary accommodation service provider survey have revealed a capacity of approximately 946 rooms across all the accommodation providers surveyed; comprising a total of 1,460 beds (for single persons). It is noteworthy that a number of temporary accommodation providers in the area (15 establishments) had declined to take part in the current survey. Therefore, the current assumptions made

around temporary accommodation capacity reflect the *minimum* capacity available, with potential for higher capacities when taking into account those additional temporary accommodation establishments that did not take part in the current survey.

Those temporary accommodation establishments that were surveyed reported a weighted average occupancy rate of 70%. Based on the assumption that the workers will not be sharing the same room, an approximate minimum of 283 rooms in the area is estimated to be available at any one time. This reflects sufficient capacity to accommodate the potential peak influx of 192 construction workers related to the Project.

Based on the assumption that the workers will be sharing the same room, an approximate 438 beds across the accommodation establishments surveyed are estimated to be available at any one time. This provides a sufficient amount of spare bed capacity to accommodate the potential influx of a peak 192 construction workforce related to the current Project.

6.1.2 Operational Phase

Information provided by Mt Arthur Coal has indicated that there are approximately 1,000 full-time equivalent personnel currently employed across the company's operations as employees and contractors. As part of the already approved MAU, current operations and the Project, Mt Arthur Coal anticipates a workforce of up to 2,600 at peak production. This represents an increase of 1,610 personnel in addition to the current workforce. Of this 1,610, 720 personnel are directly attributable to this Project.

For purposes of the current assessment, it is important to consider not only the potential workforce influx directly attributable to the Project, but also provide an up to date assessment of the potential peak workforce influx resulting from Mt Arthur Coal's overall growth activities across its operations, including the recently approved Mt Arthur Underground and the Project. This analysis of peak workforce influx across the context of Mt Arthur Coal's overall production activities affords a more comprehensive understanding of *High Impact Case scenario* population change impacts associated with the anticipated peak total of new personnel additions.

Since 2002, Mt Arthur Coal has had a local recruitment policy that aims to maximise employment in the local area. The company provided data on the last 220 positions recruited which shows that 80% of new employees were from the local area and only 20% of employees were recruited from outside the local area. The majority of those recruited from outside the local area were professional or specialist roles that could not be filled from the local workforce.

Given that Mt Arthur Coal intends to continue their local recruitment policy, it is probable that 80% of the new operational workforce will be recruited locally and only 20% recruited from outside the region. Therefore, the current assessment has shown the following:

- **Scenario A – Project-specific workforce influx:**
 - Low Impact Case: Assumes influx of 144 new personnel into the local area (20% of 720 proposed new personnel additions into the current workforce); and
 - High Impact Case: Assumes influx of 576 new personnel into the local area (80% of 720 proposed new personnel additions).
- **Scenario B – Peak workforce influx resulting from Mt Arthur Coal's overall growth activities across its operations combined:**
 - Low Impact Case: Assumes influx of 322 new personnel into the local area (20% of 1,610 proposed new personnel additions to the current workforce); and
 - High Impact Case: Assumes influx of 1,288 new personnel into the local area (80% of 1,610 proposed new personnel additions).

This is typical of companies that do not have a local recruitment policy.

As previously illustrated, a predominant proportion of Mt Arthur Coal's current workforce resides in Muswellbrook (37%), Singleton (27%) and Scone (11%), with a smaller proportion residing in Aberdeen (7%). Therefore, for purposes of the current assessment, it has also been assumed that the influx of new Mt Arthur Coal personnel into the local area would demonstrate similar residential trends to the current workforce.

The following tables outline the hypothetical number of new personnel who are likely to reside in the towns of Muswellbrook (which also includes Denman and other surrounds within Muswellbrook), Singleton, Scone and Aberdeen, as well as other surrounding townships. These figures form the basis for the predicted Project related family-level and community service impacts, which will be discussed in the following sections.

Table 6.1: Town of Residence Estimations of Mt Arthur Coal's New Operational Workforce – Scenario A (Project Specific Workforce Influx)

Town	Residential Distribution* (%)	Scenario A –Low Impact Case (20% workforce influx)	Scenario A – High Impact Case (80% workforce influx)
Muswellbrook	37	53	213
Singleton	27	39	156
Scone	11	16	63
Aberdeen	7	10	40
Other towns (across the region)	18	26	104
Total	100	144	576

Source: Coakes Consulting (May 2009)

Note: * Residential distribution is based on the location of residence for Mt Arthur Coal's current workforce (2008), as detailed in the company's Project update to the Muswellbrook Shire Council (April 2009).

Table 6.2: Town of Residence Estimations of Mt Arthur Coal's New Operational Workforce – Scenario B (Workforce influx from Mt Arthur Coal's overall growth activities across operations)

Town	Residential Distribution* (%)	Scenario B – Low Impact Case (20% workforce influx)	Scenario B – High Impact Case (80% workforce influx)
Muswellbrook	37	119	476
Singleton	27	87	348
Scone	11	35	142
Aberdeen	7	23	90
Other towns (across the region)	18	58	232
Total	100	322	1,288

Source: Coakes Consulting (May2009)

Note: * Residential distribution is based on the location of residence for Mt Arthur Coal's current workforce (2008), as detailed in the company's Project update to the Muswellbrook Shire Council (April 2009).

While the High Impact Case scenario for Scenario B might seem substantial; these figures reflect anticipated *peak* workforce additions associated with overall growth activities across Mt Arthur Coal's combined underground and open cut operations. Therefore, this peak workforce influx is unlikely to enter the region concurrently, but rather over a period of time in line with a gradual operational ramp-up.

6.1.3 Family Level Impacts across the local area

In contrary to the construction workforce, it is assumed that the operational workforce will be accompanied by their families in relocating to the area, given the long-term and ongoing nature of a typical large-scale development project's operational phase. Therefore, family level impact analysis was undertaken to provide a more detailed understanding of the extent of impacts which may result from the influx of an operational workforce into the locality.

To inform the family level impacts analysis, the following demographic assumptions have been made in addition to the aforementioned workforce scenarios:

- All of the new resident population would be aged less than 65 years;
- The average household family size of the new population would be 3.5, consistent with the average household family size reported by Mt Arthur Coal employees during the Mt Arthur Coal Employee Survey (Coakes Consulting, 2006);
- The age breakdown of family members would match that found in the ABS Census demographic data; and

- Potential family level impacts would equate to the assumed number of new resident employees multiplied by the average household family size.

The following tables present the predicted family impact according to the likely preferred residential locations of Mt Arthur Coal's new personnel. As illustrated, significant population impacts are likely to be experienced in Muswellbrook, with the Project-specific workforce influx (Scenario A) likely to result in a potential minimum influx of 186 new community members into Muswellbrook (with a High Impact Case scenario influx of 746 new residents); while the influx associated with Mt Arthur Coal's overall growth activities influx is likely to result in a minimum addition of 417 new community members into the town (with a High Impact Case scenario influx of 1,666).

Singleton is the other town likely to experience substantial population change impacts as a result of new Mt Arthur Coal production personnel entering the local area, with a potential minimum influx of an estimated 136 and 304 new community members for both Low Impact Case Scenarios A and B, respectively. The balance of the population is also distributed across a range of other towns in the region such as Cessnock, Maitland and other Upper Hunter towns, with only a small proportion of personnel likely to reside in each of these areas. Therefore, these other localities have not been included in further analyses.

Table 6.3: Predicted Family Population Impact by Town - Scenario A (Project Specific Workforce Influx)

Town	Scenario A –Project-Specific Workforce Influx			
	Scenario A –Low Impact Case (20% workforce influx)	Scenario A – Family Level Impact	Scenario A – High Impact Case (80% workforce influx)	Scenario A – Family Level Impact
Muswellbrook	53	186	213	746
Singleton	39	136	156	546
Scone	16	55	63	220
Aberdeen	10	35	40	140
Other towns (across the region)	26	91	104	364
Total	144	504	576	2,016

Source: Coakes Consulting (May 2009)

Table 6.4: Predicted Family Population Impact by Town - Scenario B (Workforce influx from Mt Arthur Coal's overall growth activities across operations)

Town	Scenario B– Workforce influx from Mt Arthur Coal's overall growth activities across operations			
	Scenario B –Low Impact Case (20% workforce influx)	Scenario B – Family Level Impact	Scenario B – High Impact Case (20% workforce influx)	Scenario B – Family Level Impact
Muswellbrook	119	417	476	1,666
Singleton	87	304	348	1,218
Scone	35	124	142	497
Aberdeen	23	79	90	315
Other towns (across the region)	58	203	232	812
Total	322	1,127	1,288	4,508

Source: Coakes Consulting (May 2009)

The following sections will provide a more in-depth discussion of family-level impacts with respect to specific age group categories.

Scenario A – Project-Specific workforce influx

The following tables illustrate the distribution of predicted family impacts according to the 2006 ABS Census age distribution for Muswellbrook, Singleton, Scone and Aberdeen. Figures in Tables 6.5 and 6.6 assume "Scenario A" low and high impact cases, respectively.

Table 6.5: Potential Family Level Impacts – Scenario A Low Impact (20% workforce influx)

Age Range	Muswellbrook		Singleton		Scone		Aberdeen	
Years	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions
0-4	9.79	18	8.73	12	8.11	4	8.40	3
5-12	14.28	27	15.60	21	13.43	7	12.98	5
13-17	9.49	18	8.79	12	7.80	4	7.38	3
18-24	10.22	19	9.89	13	11.71	6	10.75	4
25-34	15.04	28	16.01	22	14.61	8	13.23	5
35-44	15.80	29	16.79	23	14.97	8	16.28	6
45-54	14.32	27	14.69	20	16.22	9	16.48	6
55-64	11.06	21	9.50	13	13.15	7	14.50	5
Total	100	186	100	136	100	55	100	35

Source: Coakes Consulting (May 2009)

Table 6.6: Potential Family Level Impacts – Scenario A High Impact (80% workforce influx)

Age Range	Muswellbrook		Singleton		Scone		Aberdeen	
Years	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions
0-4	9.79	73	8.73	48	8.11	18	8.40	12
5-12	14.28	107	15.60	85	13.43	30	12.98	18
13-17	9.49	71	8.79	48	7.80	17	7.38	10
18-24	10.22	76	9.89	54	11.71	26	10.75	15
25-34	15.04	112	16.01	87	14.61	32	13.23	19
35-44	15.80	118	16.79	92	14.97	33	16.28	23
45-54	14.32	107	14.69	80	16.22	36	16.48	23
55-64	11.06	83	9.50	52	13.15	29	14.50	20
Total	100	746	100	546	100	220	100	140

Source: Coakes Consulting (May 2009)

Based on the figures presented above, family level impacts are most likely to be apparent within the townships of Muswellbrook and Singleton, relative to Scone and Aberdeen. In Muswellbrook, with the potential minimum influx of 53 new operational personnel and their respective family members (186 new residents in total), the number of primary school aged children (5 – 12 years) are expected to undergo an estimated 2% growth (an additional 27 children) by approximately 2016. Likewise, the workforce age group in Muswellbrook is also expected to undergo a 2% growth (an additional 105 persons) by approximately 2016. When considering the High Impact Case scenario (213 new personnel entering the town), Muswellbrook is likely to experience a substantial influx of 746 new residents, with the number of primary school aged children expected to increase by an estimated 8.2%.

Population projection trends are similar between Muswellbrook and Singleton, with projected population growths also found to be most apparent for both Singleton's school aged children group (5 – 12 years) and the workforce age group (25 – 34 years). The number of school aged children in Singleton is anticipated to increase by a minimum 21 additional children, reflecting a 1.1% growth to the current school aged population by approximately 2016. Like Muswellbrook, a substantial proportion of the coal industry workforce also tends to reside within the Singleton Township. Therefore, it is not surprising to find that Singleton's workforce age population is also projected to undergo a minimum increase of 78 persons by 2016.

Scenario B – workforce influx resulting from Mt Arthur Coal's overall increase in production activities across its combined operations

The figures in the following tables illustrate the low and high impact case workforce influx scenarios related to Mt Arthur Coal's overall growth activities.

Table 6.7: Potential Family Level Impacts – Scenario B Low Impact Case (20% workforce influx)

Age Range	Muswellbrook		Singleton		Scone		Aberdeen	
Years	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions
0-4	9.79	41	8.73	27	8.11	10	8.40	7
5-12	14.28	60	15.60	47	13.43	17	12.98	10
13-17	9.49	40	8.79	27	7.80	10	7.38	6
18-24	10.22	43	9.89	30	11.71	15	10.75	8
25-34	15.04	63	16.01	49	14.61	18	13.23	10
35-44	15.80	66	16.79	51	14.97	19	16.28	13
45-54	14.32	60	14.69	45	16.22	20	16.48	13
55-64	11.06	46	9.50	29	13.15	16	14.50	11
Total	100	417	100	304	100	124	100	79

Source: Coakes Consulting (May 2009)

Table 6.8: Potential Family Level Impacts – Scenario B High Impact Case (80% workforce influx)

Age Range	Muswellbrook		Singleton		Scone		Aberdeen	
Years	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions	Current % of Population	Potential Population Additions
0-4	9.79	163	8.73	106	8.11	40	8.40	26
5-12	14.28	238	15.60	190	13.43	67	12.98	41
13-17	9.49	158	8.79	107	7.80	39	7.38	23
18-24	10.22	170	9.89	120	11.71	58	10.75	34
25-34	15.04	250	16.01	195	14.61	73	13.23	42
35-44	15.80	263	16.79	204	14.97	74	16.28	51
45-54	14.32	239	14.69	179	16.22	81	16.48	52
55-64	11.06	184	9.50	116	13.15	65	14.50	46
Total	100	1,666	100	1,218	100	497	100	315

Source: Coakes Consulting (May 2009)

As can be seen in the projections above, a minimum influx of Mt Arthur Coal's peak personnel additions from outside the region (322 new personnel) will result in substantial population growths across the various townships, particularly in Muswellbrook and Singleton. In both these towns, the primary school aged population is anticipated to increase by a minimum 4.6% and 2.4% growth, respectively by 2016. Similarly, the workforce age population in both Muswellbrook and Singleton has also been projected to increase, with the older workforce age bracket 35 – 44 years projected to undergo a minimum growth of 66 and 51 additional persons respectively.

While the High Impact case scenario suggests a substantial resident influx into the local area (1,666 new residents into Muswellbrook, and a further 1,218 into Singleton), it is again noteworthy that these figures reflect *peak* workforce additions associated with overall growth activities across Mt Arthur Coal's combined underground and open cut operations. Therefore, this peak workforce, along with their respective family members, is unlikely to be entering the region concurrently. Rather, the population change is more likely to occur gradually over a period of time, with new production personnel phased in across Mt Arthur Coal's production activities over a number of years. This gradual phasing of new personnel into the region is likely to afford local communities and service providers the opportunity to adjust and improve current capacities in managing the changing demands of the growing population.

6.1.4 Project Related Impacts on Local Services

In order to predict impacts on service delivery associated with a Project's population change, it is necessary to assess the current capacity of key community services in the locality.

In assessing the likely population change impacts associated with Mt Arthur Coal's proposed additional production personnel, the impact of these additional personnel and their respective family members are most likely to affect the following key service sectors:

- Health;
- Education;
- Childcare; and
- Housing / Accommodation.

The SIA has involved a detailed review of service provision and service capacity in the region for these sectors, particularly across the key towns of Muswellbrook, Singleton, Scone and Aberdeen. As noted, most services tend to be accessed in the major regional centres of Muswellbrook and Singleton, and to a lesser extent from Scone. Given the size of Aberdeen, the town's population tends to more frequently access its service requirements from Muswellbrook.

Information relating to service capacity and facility thresholds has been obtained and, when used in conjunction with information relating to the proposed Mt Arthur Coal workforce additions, provides a baseline from which impacts associated with the Project can be predicted. A detailed overview of existing service capacity in the region has already been provided in Section 4.4.3. The following sub-sections discuss the potential impacts of the proposed additional Mt Arthur Coal workforce on these services, as outlined below.

Health / Medical

The region is serviced by a number of hospitals, with the Muswellbrook District Hospital the largest of the public hospitals located in the Upper Hunter region. While the Muswellbrook District Hospital has declined to take part in the current survey, data from the 2006 service capacity survey undertaken by Coakes Consulting, as part of the MAU Project's social assessment program, revealed that the hospital was already operating over capacity and was therefore unable to accommodate any further population growths in the area, unless more beds and staffing resources were provided. A similar trend was noted for the Denman and Scone hospitals, which indicated that they were also already operating at capacity and unless more health professionals were brought in to service these hospitals, it was unlikely that these hospitals would be able to accommodate further population increases.

The Singleton Hospital provided a more positive response, citing confidence in their ability to accommodate further population growth given their excellent quality of specialist and medical care, as well as their overall flexibility to increase the number of beds in-house where necessary.

Most of the hospitals in the area were already reportedly operating at, or close to capacity. While there might be some flexibility to accommodate marginal increases in population, it is anticipated that a minimum 504 potential new residents entering

the townships of Muswellbrook, Singleton, Scone and Aberdeen (Scenario A – Low Impact Case Project-specific workforce influx) is likely to place further pressures on the region's primary hospital services in the area.

The majority of the GP services that were surveyed indicated an ability to accommodate a further increase in population. However, most of these services also agreed that there was a need for further GPs to assist in servicing the growing population demands and unless more doctors were encouraged to work in the region, the area's GP services would be unlikely to cope with any further long-term projected growth in population. These prevalent shortages of doctors in the area underpin potential difficulties for the sector in servicing a minimum 504 potential new residents entering the region.

In relation to specialist health service providers, the dental practices which took part in the current survey expressed confidence in their abilities to handle any potential population growth in the area. While the current general waiting period to see a dentist does not appear to be particularly lengthy, averaging an approximate two week wait, the dental services did however indicate that most of their patients were under the Government's Medicare scheme and therefore tended to have longer waiting times than other patients who had private health insurance. As such, with further growth in the region's population and increasing demands placed on the dental services sector, waiting times for patients under the Government's Medicare scheme are likely to be further exacerbated.

Table 4.17 in Section 4.4.3 provides further details of the quality and capacity of health service providers across the localities of interest.

Education

Based on Scenario A, which takes into account the projected workforce influx specifically related to the Project, the number of primary school-aged children in Muswellbrook is projected to increase by a minimum 27 children with a further 21 in Singleton. In contrast, the High Impact Case Scenario A assumption, which assumes an 80% workforce influx, estimates an increase of 107 children in Muswellbrook with a further 85 in Singleton.

In relation to Scenario B, which takes into account Mt Arthur Coal's overall growth activities, a minimum increase of 60 primary school children in Muswellbrook and a further 47 in Singleton is anticipated. The High Impact Case Scenario B assumption, which assumes an 80% workforce influx, projects a greater increase in the number of young children, estimating a total 238 primary school children in Muswellbrook and a further 190 in Singleton.

The potential increase in high school-aged children is not as significant as that for the primary group. It is anticipated that Muswellbrook would experience a minimum increase of 18 new students under Scenario A (with a High Impact Case projection of 71), and an additional 12 in Singleton (with a High Impact Case projection of 48); while under Scenario B, the minimum increase of new high school students in Muswellbrook is estimated to be 40 (with a High Impact Case projection of 158), and Singleton 27 (with a High Impact Case projection of 107).

Although some schools noted limited spare capacity to accommodate new students, the majority of education institutions surveyed outlined that their education facility would have the capacity to handle an increase in local population (Table 4.18, Section 4.4.3). In particular, these education facilities cited flexibility in expanding their current capacities through installation of demountables or development of further extensions to existing facilities. Therefore, it is likely that education services in the region would be able to cope with the current anticipated population change and influx of new residents.

A number of education facilities have cited overall challenges in retaining older high-school aged students, as well as a general lack in support structures and programs for disadvantaged youth / those students who may have dysfunctional social behavioural problems. Therefore, an increase in student numbers might place further demands on the already limited support structures currently in place for more vulnerable, at-risk or disadvantaged students.

Childcare

Outcomes of the service capacity survey with childcare providers have revealed that only a small proportion of the childcare services, across the key localities of interest, cited confidence in their capacity to handle an increase in population. As shown earlier in Table 4.19 (Section 4.4.3), most of the childcare services in the region were already running either at, or very close to, capacity. Further, most of the childcare services that were surveyed reported challenges in resourcing existing facilities, due largely to an overall shortage of childcare staff as well as limited funding for specialised programs to cater to those children in need.

The current assessment has revealed a minimum potential increase of 18 young dependent children (0 – 4 years) in Muswellbrook, and a further 12 in Singleton (Scenario A). Under Scenario B, a minimum projected increase of 41 new dependent aged children in Muswellbrook is estimated, alongside a further 27 in Singleton. In addition to these dependent aged children, the number of school aged children (5 – 12 years) who might also be in need of childcare services (i.e., before and after school care, vacation care) is also likely to undergo growth in coming years. Therefore, may be strains to existing childcare services should there be an increase in demand for these services.

Residential Housing and Accommodation

Outcomes of the SIA have revealed a minimum influx of 53 new Mt Arthur Coal personnel and their respective family members into Muswellbrook, solely attributable to the Project (Scenario A Low Impact Case assumption: 20% workforce influx). In contrast, a maximum influx of 476 new Mt Arthur Coal personnel and their respective family members has been projected to enter Muswellbrook, in relation to the company's overall growth activities (Scenario B High Impact Case assumption: 80% workforce influx). In light of these potential population changes, the current status of the housing sector in the region will need to be assessed.

As shown earlier in Table 4.21, (Section 4.4.3), the Muswellbrook LGA in particular has several proposed new lot developments currently in place for approval. Given current initiatives in further housing development in the region, there is likely to be sufficient accommodation to house Mt Arthur Coal's projected number of new production personnel. Further, given current plans for a gradual increase of staff over a period of time, the local housing sector is unlikely to be faced with concurrent

demands by the new workforce influx. Rather, with the gradual population change, local councils will be able to progressively phase in new housing and residential development applications over the coming years.

6.1.5 Summary of Population Impacts

The SIA has revealed that the Muswellbrook Shire and surrounding localities of Singleton and Scone are likely to be able to absorb the population change impacts associated with the construction phase of the Project. Given the temporary nature of construction, it is unlikely that the construction workforce would have significant long-term impacts on the region's key service provision and community infrastructure. Furthermore, there seems to be sufficient temporary accommodation capacity in the region to accommodate the proposed construction workforce size.

In relation to the operations workforce, a review of the current capacity of key service sectors in the region has revealed that while some service sectors would be able to absorb the projected influx of new Mt Arthur Coal production personnel, such as the primary and secondary education sectors, other sectors such as health and childcare services are already operating at / close to capacities and as such, are unlikely to be able to accommodate any further increase in population unless resources such as additional staff are in place.

While the proposed influx of new Mt Arthur Coal production personnel into the area is likely to place further pressures on some existing service sectors and community infrastructure, the associated population change is likely to occur gradually over a period of time as new personnel would be phased in to Mt Arthur Coal's already approved and currently proposed production activities over a number of years. Therefore, local communities and key service providers would be able to work effectively with the company and other relevant planning agencies to progressively adopt and implement strategies that could improve their existing capacities in managing the changing demands of the population over time.

6.2 Cumulative Population Impact Assessment

Other developments in the region have the potential to add pressure on community infrastructure, services and housing. As Muswellbrook is likely to experience substantial population growth over the coming years as a result of Mt Arthur Coal's proposed workforce, it would be important to consider potential cumulative population impacts resulting from *other* development / expansion Projects currently planned in the Muswellbrook LGA.

In assessing cumulative population impacts, it is essential to determine whether the peak influx of new Mt Arthur Coal construction and production personnel into the region is likely to coincide with the peak construction and operational workforce influx from other new development Projects in the area. As part of the SIA, potential cumulative impacts of currently approved (but not operational) Projects will be considered.

Xstrata Mangoola (Mangoola) commenced its Early Works Program in 2008, which involved preparing the site and surrounding access roads / relevant infrastructure for the actual construction stage of the Project. To date, no construction or mining activities have commenced, although it is likely that on-site construction would start towards the end of 2009 following completion of the Early Works Program. According to information provided by Xstrata, the peak construction workforce of 350 is likely to occur in the year 2011, with operations commencing shortly after. Given that construction for the Project is not expected to commence until 2012, it is unlikely that there would be any cumulative construction workforce impacts imposed on the region, particularly on key service sectors such as the temporary accommodation service providers.

Mt Arthur Coal's current growth plans indicate that its projected peak total of 1,610 new production personnel would be fully phased in by 2016 following construction of the Project, bringing its peak production workforce to approximately 2,600 across its operations. For Mangoola, information provided by Xstrata has suggested that the peak operational phase will see a workforce influx of 300 production personnel in the year 2019. Therefore from the year 2019, both Mt Arthur Coal and Xstrata's peak production phases are likely to coincide.

The SIA will focus on assessing potential cumulative population impacts within the Muswellbrook LGA, given that the Shire is likely to experience substantial population change in the coming years due to its proximity to neighbouring operations in the locality, and the tendency for industry workforces to predominantly reside within the Muswellbrook Township.

To inform the assessment, the following scenarios have been adopted:

- Low Impact Case scenario: approximately 20% of the peak operational workforce influx for each Project will move into the local area; and
- High Impact Case scenario: approximately 80% of the peak operational influx for each Project will move into the local area.

In addition, the following assumptions were also made in relation to Mangoola's workforce:

- Approximately 37% of the workforce influx from both the Mangoola Project and the Project will reside in Muswellbrook (based on breakdown proportions for the current Mt Arthur Coal workforce's residential areas); and
- Mangoola's production workforce will demonstrate an average family size similar to that for the Mt Arthur Coal workforce (3.50), as was determined by the Mt Arthur Coal Employee Survey (Coakes Consulting, 2006).

The following table estimates the number of total new residents associated with both the Mt Arthur Coal and Mangoola Projects, during the period in which peak operations for both these Projects are expected to coincide.

Table 6.9: Estimations of Mt Arthur Coal and Mangoola's Peak Operational Workforces to enter the Muswellbrook LGA

	Mt Arthur Coal Operations	Mangoola Operations	Total Mt Arthur Coal and Mangoola Peak Operations Coinciding
Low Impact Case: Workforce entering the <u>region</u> (20% of peak workforce influx)	322	60	382
High Impact Case: Workforce entering the <u>region</u> (80% of peak workforce influx)	1,288	240	1,528
Low Impact Case: Workforce entering <u>Muswellbrook</u> (37% of Low Impact Case Workforce Influx, 322)	119	22	141
High Impact Case: Workforce entering <u>Muswellbrook</u> (37% of High Impact Case Workforce Influx, 1,288)	476	89	565

Source: Coakes Consulting (April 2009)

As already noted, the minimum workforce influx associated with Mt Arthur Coal's overall growth activities is estimated to be 322 (20% influx of 1,610), with a High Impact Case estimation of 1,288 (80% influx of 1,610), of which, a minimum 119 personnel (37% of 322) is likely to reside within the Muswellbrook Township. For Mangoola, the Low Impact Case scenario assumption assumes that an estimated 22 production personnel will migrate to Muswellbrook (20% of 300 production personnel). As such, Muswellbrook is estimated to have a minimum increase of 141 new residents during the period in which peak operations for both these Projects coincide.

The following table shows the predicted cumulative family impact for the Muswellbrook LGA, based on the assumption that a minimum estimate of 141 new production personnel and their respective family members will be entering Muswellbrook during the peak production phases of both the Mt Arthur Coal and Mangoola Projects. As outlined in the table, Muswellbrook is estimated to have a minimum 494 new community members during the period where both Projects' peak production phases coincide. When considering the High Impact Case scenario assumption, which assumes an 80% workforce influx into Muswellbrook, the township is likely to experience a substantial 1,977 new community residents when both the Mt Arthur Coal and Mangoola Projects coincide.

Table 6.10: Predicted Cumulative Family Population Impact in Muswellbrook

	Mt Arthur Coal Operations	Mangoola Operations	Total Mt Arthur Coal and Mangoola Peak Operations Coinciding
Projected Family Distribution (Low Impact Case)	417	77	494
Projected Family Distribution (High Impact Case)	1,666	311	1,977

Source: Coakes Consulting (April 2009)

The following graph compares the current minimum cumulative workforce projections to that of medium growth population projections for the Muswellbrook LGA. The Hunter Valley Research Foundation (2008 – 2009) has forecasted that the Muswellbrook population will undergo an annual growth rate of 0.81% during the period 2006 – 2026.

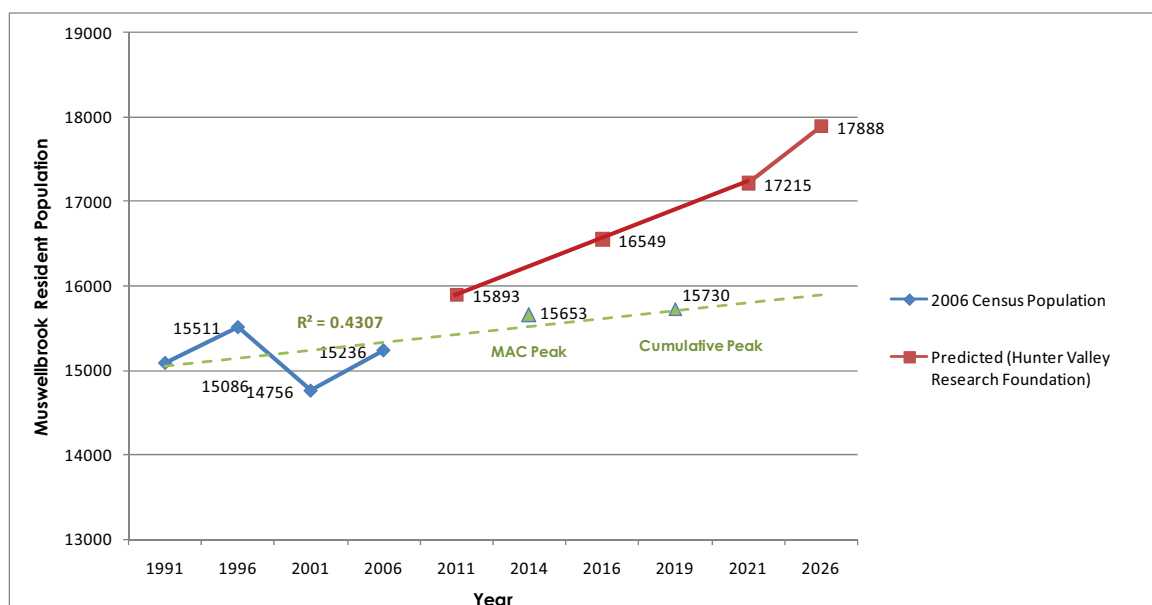


Figure 6.2: Population Projection Trends for the Muswellbrook LGA

Source: ABS Census (2006); Hunter Valley Research Foundation (2008 - 2009); Coakes Consulting (2009)

The age distribution of the predicted cumulative family impact was also calculated for the Muswellbrook LGA, according to the 2006 Census age distribution. As illustrated in the tables below, a minimum cumulative 0.6% growth has been estimated across the different age groups in the Muswellbrook LGA, during the period when both the Mt Arthur Coal and Mangoola peak production phases are likely to coincide. Though marginal, this growth trend might still have some implications on

those service sectors which are already currently under pressure within the Shire, particularly both the health and childcare sectors.

Table 6.11: Potential Cumulative Family Level Impacts – Muswellbrook LGA (Low Impact Case assumption: 20% workforce influx)

Age Range	Projected Family Distribution		Total – Peak Timing Coinciding
Years	Mt Arthur Coal	Mangoolia	
0-4	41	7	48
5-12	60	11	71
13-17	40	7	47
18-24	43	7	50
25-34	63	12	75
35-44	66	13	79
45-54	60	11	71
55-64	46	9	55
Total	417	77	496

Source: Coakes Consulting (2009)

Table 6.12: Potential Cumulative Family Level Impacts – Muswellbrook LGA (High Impact Case assumption: 80% workforce influx)

Age Range	Projected Family Distribution		Total – Peak Timing Coinciding
Years	Mt Arthur Coal	Mangoolia	
0-4	153	30	183
5-12	237	44	281
13-17	152	28	180
18-24	158	29	187
25-34	252	47	299
35-44	279	52	331
45-54	245	46	291
55-64	190	35	225
Total	1,666	311	1,977

Source: Coakes Consulting (2009)

6.2.1 Cumulative Population Impact Summary

In summary, based on outcomes of the SIA, potential cumulative impacts of the Mt Arthur Coal and Mangoola Projects on the Muswellbrook LGA include:

- Potential strains on health services in the Muswellbrook LGA if increases in resources, in line with the predicted increase in residents, are not provided;
- Potential constraints on existing and long-term residential land availability, unless effective planning processes are in place to assist the Shire in progressively phasing in new residential land applications in accordance with company plans associated with the influx of new production personnel;
- The variety of different primary schools in Muswellbrook, including large capacity intakes and flexibility for some of these schools (e.g., Muswellbrook Public School has a current spare capacity of 270 and a flexible capacity of 700) suggests that there is likely to be sufficient capacity in existing primary education services to accommodate the minimum addition of 71 primary school-aged children, as well as a High Impact Case projection of 281 children;
- Current capacity of the Muswellbrook High School (840 / Flexible) and the St Joseph's High School (650 / Flexible) suggests sufficient capacity to accommodate a minimum influx of an additional 47 secondary school aged students into the Muswellbrook LGA, as well as a High Impact Case projection of 180 secondary students; and
- Majority of existing childcare services across the Muswellbrook LGA, are running at, or close to, capacity and are therefore unlikely to be able to accommodate a minimum additional 48 young children (0 – 4 years) in the Shire.

The figures provided above are population predictions only, based on a High Impact Case scenario where both the Mt Arthur Coal and Mangoola peak production workforces are assumed to coincide. To ensure accuracy of prediction, the current cumulative impact assessment for Mt Arthur Coal's growth activities across its operations in coming years will need to be revised as additional information regarding Project approvals / closures in the Muswellbrook LGA becomes available.

While the SIA has projected a substantial cumulative influx of peak production personnel, and their respective family members, into the Muswellbrook LGA during the period when both the Mt Arthur Coal and Mangoola peak operational phases have been assumed to coincide, it is important to note the time lag between the commencements of both Projects' peak production phases. While Mt Arthur Coal's peak production phase is likely to commence in 2016 following construction of the Project, Mangoola's peak production workforce is unlikely to be fully phased in until 2019. Therefore, this time lag is likely to afford key service providers in the Muswellbrook LGA the opportunity to work constructively with the respective companies in effectively planning for the anticipated and progressive population growth in coming years.

7.0 Strategies for Impact Management and Monitoring

Mitigation strategies are processes, programs or plans designed to address the perceived issues and impacts stakeholders have raised during the assessment program. Such strategies may serve to enhance the positive impacts associated with a project, or mitigate or ameliorate impacts. It is important to note, however, that such strategies may only assist in making a proposal more acceptable to the community and are not designed to change the values held by particular stakeholder groups.

The strategies recommended in this section are designed to address community concerns raised during the assessment in regard to:

- Cumulative impacts of mining
- Economic development, particularly local employment and training
- Quality of life
 - Community investment
 - Impact of workforce on health services
 - Property values
 - Road safety
- Community engagement

All mitigation strategies associated with identified environmental issues are dealt with in the relevant environmental sections of the report.

Mt Arthur Coal has been operating since the 1960's and hence has a mature program of community strategies in place. The strategies recommended in this section, therefore, aim to strengthen the initiatives already in place, to improve how information is communicated to the community and to increase the transparency of impact monitoring.

7.1 Strategies to Address Cumulative Impacts

A major theme that emerged from the social assessment and consultation program related to the cumulative impacts of mining in the area. In December 2008 the Australian Coal Association Research Program (ACARP) published a report on the cumulative impacts of mining in the Muswellbrook area that recommended the following:

1. The establishment of a formal association, by the local mining industry, to facilitate co-ordination between mines and with external agencies;
2. A collaboration between the local mining industry and the Muswellbrook Shire to establish a Muswellbrook-wide consultative forum comprising mine representatives and local stakeholder groups;
3. The consolidation of a collective report to the community on the economic, social and environmental performance of the local industry;
4. Collaboration between the local mining industry and other external agencies to improve the capacity to monitor and manage cumulative impacts (Brereton et al, 2008).

The Muswellbrook Community Reference Group (MCRG) is currently being established as a result of the ACARP report with Mt Arthur Coal a founding member. Through the MCRG, Mt Arthur Coal has agreed in principle to work with other industry groups to review the recommendations made in the ACARP report, identify the recommendations considered relevant to the local community and implement those recommended by the MCRG. Although the MCRG is still in its formative stages, it is recommended that Mt Arthur Coal continue to participate in this forum and work to ensure delivery of the group's Charter, in collaboration with other group members.

In addition to the MCRG, Mt Arthur Coal is a member of other groups that aim to address the cumulative impacts of mining. For example, the company has representation on the NSW Minerals Council, Meteorological Sounding Group, the Hunter River Salinity Trading Scheme Management Committee, and the Hunter Coal Environment Group.

It is therefore recommended that the company review its memberships and ensure it has representation on the majority of organisations that are working towards addressing the cumulative impacts of mining on Muswellbrook.

7.2 Strategies to Address Economic Development – Employment and Training

The majority of local residents acknowledge the positive impact of Mt Arthur Coal on the economic development of the region, particularly through local employment. In 2008, 82% of employees resided in the areas of Muswellbrook, Denman, Aberdeen, Singleton and Scone, thus demonstrating the company has an effective local employment program. There were, however, concerns that local employment opportunities should continue to be maximised during the Project to further concentrate economic benefits in the town of Muswellbrook.

Mt Arthur Coal has a number of human resource programs that aim to create employment and training opportunities for local residents. These include:

- An apprenticeship and traineeship program that works with local education institutions to promote opportunities at the mine. All opportunities are advertised locally through registered training organisations.
- A Trainee Operator Program based on the nationally recognised Certificate II and III in Surface Coal Operations. The aim of the program is to encourage a broad range of local candidates from the Hunter Valley to achieve nationally recognised qualification/s and industry relevant skills, thus increasing the skilled labour pool for Mt Arthur Coal, the mining industry more broadly and local employers. The program recruits from the local community based upon behavioural attitudes rather than mining experience and was recently awarded an EOWA Business Achievement Award for its success in attracting women into the mining workforce.
- Career open days are held at local high schools. 'Try a skill' days and mine site tours are also implemented to help promote mining as a career for local residents.

Despite these already sound practices, it is recommended that Mt Arthur Coal strengthen its local employment program through the following:

- Formalise engagement with local education institutions so recruitment-related events precede the advertising of apprenticeship and traineeship openings.
- Monitor the effectiveness of the above program in recruiting local trainees and apprentices in order to determine which recruitment activities produce the best employment and training outcomes.
- Improve communication of Mt Arthur Coal's recruitment process for employment, traineeships and apprenticeships. This communication should target the broader community rather than just education institutions and include information about where opportunities are advertised; how to apply for a position; and how to register to receive email alerts of relevant positions.

There also appears to be a poor understanding in Muswellbrook that Mt Arthur Coal considers 'local employment' as encompassing the towns of Aberdeen, Denman, Singleton, and Scone. Therefore, it is recommended that Mt Arthur Coal publish annually in the *Community Matters* newsletter a breakdown of where employees reside.

7.3 Strategies to Address Economic Development – Local Business

Some residents are concerned that local businesses and service providers may struggle to cope with the influx of workers for the Project. In particular, surveys of Service Providers in the area have confirmed that some health and child care services are already at or near capacity. Therefore, it is recommended Mt Arthur Coal keep local businesses and service providers informed about the Project's expected workforce numbers, so that such agencies can better plan for growth. This can be achieved through a service provider information sheet and regular meetings with key stakeholders such as local Chambers of Commerce and Industry, the NSW Health Department and childcare providers. In addition, population change projections may also be included in the *Community Matters* newsletter and distributed to the area's key service providers.

In order to more widely distribute the Project's economic benefits, it is important the company maximises the local procurement of goods and services where practicable. Mt Arthur Coal uses a decision matrix when awarding contracts that gives preferential weighting to local businesses, however, the focus of procurement decisions continues to be price and safety.

7.4 Strategies to Address Quality of Life – Community Investment

Outcomes of the SIA illustrate that local community members acknowledge the significant contribution Mt Arthur Coal's community investment program makes to a number of educational, health, cultural and special interest groups and projects in the local area. In addition, BHP Billiton's Matched Giving Program contributes matched funds to charities that employees themselves support.

Despite this view, some concerns were raised regarding how the company's community investment budget and the funds required to be paid to local government under development consent conditions (Section 94 contributions) were being spent. There was a view that projects being funded were not necessarily seen to be a priority in the eyes of the community. This view appears to partially stem from a poor understanding of how funding decisions are made by both industry and local government alike.

As discussed in Section 4.4, the community has identified the following areas as those of greatest need in the community. These include:

- Sport and recreational facilities;
- Community and entertainment facilities;
- Roads and infrastructure;
- Youth activities and programs; and
- Education and childcare.

These priorities are quite different from those expressed by local government authorities in the area, which outline the priorities to be education and training, improvements to roads and improved access to general community services and infrastructure.

Given divergent views on what is required to improve the quality of life for residents, it is recommended that Mt Arthur Coal consider undertaking a strategic review of their community investment program to ensure that it is aligned with areas of greatest community need. Such a review would also benefit from a more detailed community needs assessment, which could involve other parties, such as industry, government and community stakeholders.

The table below summarises a possible approach for future social investment focus areas that could be developed to meet company business drivers, Muswellbrook Shire Council and Community needs. The focus areas that have been proposed as a result of consultation with the local community include: Infrastructure, Education and Training and Local Community Support (e.g. Local Business, Local community groups).

As has been highlighted above, outcomes of a more comprehensive community needs assessment may assist in aligning stakeholder perspectives and defining focus areas for investment going forward.

Table 7.1: Social and Economic Contributions Framework

Focus Area	Description	Comments
Existing Social Projects / Investments undertaken by MAC.	Partnerships: - Review relevance of existing major partnership agreements in relation to business drivers and local community needs and aspirations. If no longer relevant, consider a phasing out of non performing partnerships. Donations and Sponsorships: - Review current spread of local sponsorships and donations by community and evaluate spend relative to importance to business and community needs. - Strategically align future donations/sponsorships /partnerships to company business drivers and community needs.	- Consider adopting a "Master Plan" approach to Social Investment to address growth, employment, infrastructure, and service provision requirements within the locality. - Acknowledge and address Muswellbrook Council's Strategic Plan "Making Muswellbrook" with a view to supporting initiatives that benefit the wider community and support the company's business objectives.
Community Infrastructure	Consider working with other stakeholders (State and local government, community groups, other industry representatives) to	- Areas of relevance identified by the community include: - Changing population and demographics

Focus Area	Description	Comments
	facilitate community infrastructure projects and enhance liveability of the area. Consider participation in relevant committees within key sectors e.g. health. The company could share relevant assessment data to inform future service planning and delivery.	Impact on service provision, such as educational requirement, childcare, health service delivery, recreational (social and sporting needs), particularly for youth etc.
Community Support	- Review current activity in this area and prioritise projects in relation to community needs, aspirations and business drivers. - If projects/partnerships are not contributing to priority areas/needs consider a phasing out of non performing partnerships/projects.	Involvement in projects that may include: - Local Tourism initiatives - projects that will improve liveability and diversification of area, generate alternative economies and enhance local business. - Capacity development - projects that provide assistance in developing the skills/capacity of the local community groups and organisations to meet community needs. - Youth projects and programs. - Provision of funding for additional childcare places in Muswellbrook to support the broader community and mine workforce specifically. - Counselling and pastoral care projects for local youth and local schools. - Children with special needs.
Education and Training	- Determine business skill requirements and opportunities to further facilitate employment from the local community. - Identify skills gaps and work with local education institutions to develop 'employment pathways', cadetships, training programs.	- Mt Arthur Coal has a good reputation in this regard and thus has the opportunity to build on this further. Consideration to be given to: - Targeting young people in the community as a group requiring training and preparation for job readiness in the company's workforce. This may help alleviate trend

Focus Area	Description	Comments
		of young people leaving school early with no skills to gain employment. - o Developing scholarships for local youth to enable them to study for employment in the resources sector. - o Consider introducing and resourcing school based Traineeship Program. - o Working with TAFE to develop courses with an emphasis on employment in the resource sector. - o After school tutoring programs for disadvantaged students requiring additional tuition and academic support – may include life skill development e.g. Home economics, budgeting. - o Drug education and healthy living school programs.

Source: Coakes Consulting (2009)

7.5 Strategies to Address Quality of Life – Workforce Involvement in the Community

Mt Arthur Coal promotes corporate citizenship by encouraging employees to participate in community fundraising events and volunteering activities; ensuring members of the Leadership Team participate in community activities; and encouraging suppliers and contractors to support community events. Corporate citizenship has also been included as a key performance indicator (KPI) for over 150 Mt Arthur Coal employees through the company's KPI program.

It is therefore recommended that the company maintain current activities aimed at promoting good corporate citizenship.

7.6 Strategies to Address Quality of Life – Health Care

The pressure on health services in the region has long been a point of concern for local residents. In this regard, the company undertakes a range of activities designed to mitigate the impacts of the Mt Arthur Coal workforce on the health service, including:

- Influenza vaccination clinic run on site for employees
- First aid centre on site
- 50% reimbursement for gym memberships for all employees
- 50% pool membership for employees and their families
- Participation in local health charity events such as the 'Fit for Life' relay
- Supporting local Doctors and physiotherapists to attend the site for educational visits
- Utilising a local service provider to complete periodic medical testing on all employees every three years, which includes: spirometer (lung capacity) testing, audiometric (hearing) testing, functional testing, blood pressure, BMI, etc.
- Utilising a local service provider to complete random drug and alcohol testing – counselling services available to employees identified with drug or alcohol problems
- Free counselling service available to all employees and immediate families

While the above interventions assist in reducing impacts, further strategies may also be beneficial. In order for Mr Arthur Coal to assess the extent to which impacts are being experienced and to determine how best to manage the impacts of its workforce on local health services, it is recommended Mt Arthur Coal give consideration to conducting a detailed Health Services Impact Survey in collaboration with NSW Health.

7.7 Strategies to Address Quality of Life – Road Safety and Traffic

Several community members expressed concern about road safety, although the evidence suggests this concern is more related to the impacts of mining and industry in general than to the Project *per se*. Mt Arthur Coal currently addresses road safety issues through its behavioural safety program, toolbox meetings, and by promoting safety as a currency. Mt Arthur Coal could give consideration to working in collaboration with industry and Government on relevant road safety initiatives, where appropriate.

There are some residents who lease agricultural properties adjacent to the Project area who may have road access to their properties restricted from time to time due to construction or Project activities. It is therefore recommended that Mt Arthur Coal provide advance notice of any potential impacts on road access so the affected lessees can make alternative plans for farming activities such as stock movements.

7.8 Strategies to Address Quality of Life – Property Values

Some residents were clearly concerned as to how the Project may impact their property values. It was apparent from some interviews that many community members do not fully understand how Zones of Affectation and Management are applied as part of the development approval process. It is therefore recommended that Mt Arthur Coal produce a community information sheet on this topic, for distribution to all residents identified to fall within these respective zones; and that regular contact is maintained with residents in these areas. Wider community understanding of management implications within these defined zones may also be beneficial to increase awareness within the broader community.

7.9 Strategies to Address Community Engagement

Mt Arthur Coal has a robust program of community engagement mechanisms. A dedicated community relations officer has been a commitment for the past 10 years. Mechanisms employed to engage/communicate with the community include:

- Mt Arthur Coal Community Consultative Committee;
- Company representation on peak community groups;
- Community newsletter (*Community Matters*) - with distribution to approximately 8,000 homes and businesses;
- Project-specific newsletters;
- Participation at key community events e.g. Muswellbrook Show;
- Ad-hoc community surveys.

An Annual Environmental Management Report is produced, that summarises company activities and performance in the areas of environment and community. Furthermore, all employees and contractors complete an induction that includes a discussion of the staff's social responsibilities and these are reinforced through regular *Good News Alerts* and *Community Matters*.

The SIA uncovered a need for additional community information to be made available to community members on topical areas such as the employment process, how environmental issues are managed by the company on and off-site, what it means to live in a Zone of Affection / Management, and how community groups can access funding through the company's community investment program. It was also highlighted that the community is not aware of the full range of engagement activities the company undertakes.

In addition to its broader program of community engagement, Mt Arthur Coal regularly consults with individual residents who live in close proximity to the mine. These meetings allow Mt Arthur Coal staff to discuss the results of ongoing environmental monitoring, and give residents an opportunity to discuss their concerns directly with company representatives.

Although the above community relations activities have been sufficient in the past, Mt Arthur Coal is ready for more strategic community engagement in the future. This may be achieved through two main mechanisms: further development of the annual

community relations plan; and implementation of a dedicated stakeholder management system, to enable rigorous capture, collation, reporting and management of stakeholder issues over time.

In relation to the Plan, the company currently develops an annual community relations plan to guide activities within the community domain. However, it is recommended that this plan should be more closely aligned to stakeholder needs and requirements and should be informed by a community risk assessment.

Given the community's lack of awareness of the company's community relations activities, it may also be beneficial for Mt Arthur Coal to develop a calendar of community events that targets particular sectors of the community (e.g. youth; potential trainees etc) and utilises appropriate communication and engagement mechanisms across salient topic areas, that is, environmental issues and their management, economic development opportunities, and community investment. This calendar should take into account other planned activities in the town, and maximise opportunities for Mt Arthur Coal staff to work with local groups to build capacity. An example of this would be staff helping the local Rotary Club with a fundraising barbecue.

To facilitate more effective stakeholder management and reporting, it is recommended that the company should implement a stakeholder management system that can record all community engagement activities, responses to concerns, and outcomes of engagement (including any agreements or commitments made). The system should also be able to schedule in routine landholder visits and ensure nominated stakeholders automatically receive relevant information such as environmental monitoring updates. This system will create a knowledge base of community members' needs/requirements and issues of concern; and document a permanent record of previous engagements. It will afford better monitoring of emerging issues and will move the company towards a more stakeholder-centric program of engagement that can be benchmarked against industry best practice.

The following table provides a summary of the recommendations discussed above by salient issue / impact areas.

Table 7.2: Summary of recommendations

Impact Area	Recommended strategy
<i>Cumulative Impact</i>	
	Participate in the MCRG to address cumulative impacts of mining in Muswellbrook
	Participate in representative committees that aim to address cumulative impacts of mining in Muswellbrook
<i>Economic Development</i>	
Employment and training	Formalise engagement program with education institutions to optimise local recruitment
	Monitor the effectiveness of the local recruitment program
	Improve communication on recruitment process for employment, traineeships and apprenticeships
<i>Quality of Life</i>	
Community Investment	Undertake a strategic review of Mt Arthur Coal's community investment program and align investment to company business drivers and areas of greatest community need.
Community Involvement	Maintain activities that promote good corporate citizenship
Road Safety and Traffic	Give consideration to working in collaboration with industry and Government on relevant road safety initiatives Ensure agricultural lessees are given appropriate advance warning of traffic restrictions that may impact on their farming activities
Property Values	Produce a community information fact sheet on what it means to reside in a Zone of Affectation
	Formalise a program of regular engagement with people who reside in the Zone of Affectation
<i>Community Engagement</i>	
	Seek input from local community members for the annual updating of the Mt Arthur Coals' community relations plan
	Implement a stakeholder management system
	Develop an annual calendar of community events

Source: Coakes Consulting (2009)

8.0 Conclusion

In conclusion, the current socio-economic assessment program has identified a range of perceived issues and impacts associated with the Project. These issues have been documented and, where relevant, appropriate strategies have been developed and recommended to assist the company in enhancing those positive impacts perceived to be associated with the Project while mitigating or ameliorating the negative impacts.

As is typical for large scale developments, perceived impacts / issues associated with the Project tend to be most apparent for those living in closest proximity to the development, or those who perceive they will be most directly impacted. For several years now, the Muswellbrook community has been a close neighbour to the region's coal mining industry. Over the years, the community has gradually grown to become receptive of the positive economic change and benefits which the industry generates in the region. However, it has been more challenging for the community to accept the perceived detrimental environmental impacts resulting from rapid industry growth, as more development / extension proposals continue to gain approval.

Concerns over the cumulative environmental impacts of mining were revealed during the current engagement with nearby landholders who live in close proximity to the Mt Arthur Coal Complex. As previously highlighted, there also appears a level of apathy among community residents, particularly given the multiple industry players. Consequently there is a need for a new suite of engagement and investment mechanisms and greater collaboration among industry players and local stakeholders.

The population change analysis has revealed that the Muswellbrook Shire will experience population change in the coming years, due in part to Mt Arthur Coal's projected peak workforce influx, and the presence of mining operations within the locality.

While some key service sectors in the area are likely to be able to absorb the projected influx of new production personnel, such as the education sector, other service sectors such as some health services and childcare services are already

operating at / over capacity and as such, are unlikely to be able to accommodate any further increase in population, unless effective planning strategies are in place early to assist these sectors in managing the changing demands of their local population.

While the availability and affordability of residential and rental housing stock has been a historic problem with the Muswellbrook LGA, the Shire has adopted several initiatives in proactively addressing this housing issue by increasing the proposed availability of lots of residential development, and proposing larger-scale residential development initiatives. Given that the proposed Mt Arthur Coal production workforce influx would be phased in over a number of years, the Muswellbrook Shire Council should be able to work with the company in developing plans that would progressively phase in new housing and residential development initiatives in accordance with population influx trends.

Consequently, as part of "best practice" social and corporate responsibility, Mt Arthur Coal is committed to maintaining ongoing dialogue with neighbouring local residents and key service providers, and that, where possible, perceived impacts are acknowledged and addressed, where relevant.

It may be advantageous for the company to engage in a broader master planning process with the Muswellbrook Council, other industry members and State Government around larger community needs in the areas of infrastructure, service provision and education and training.

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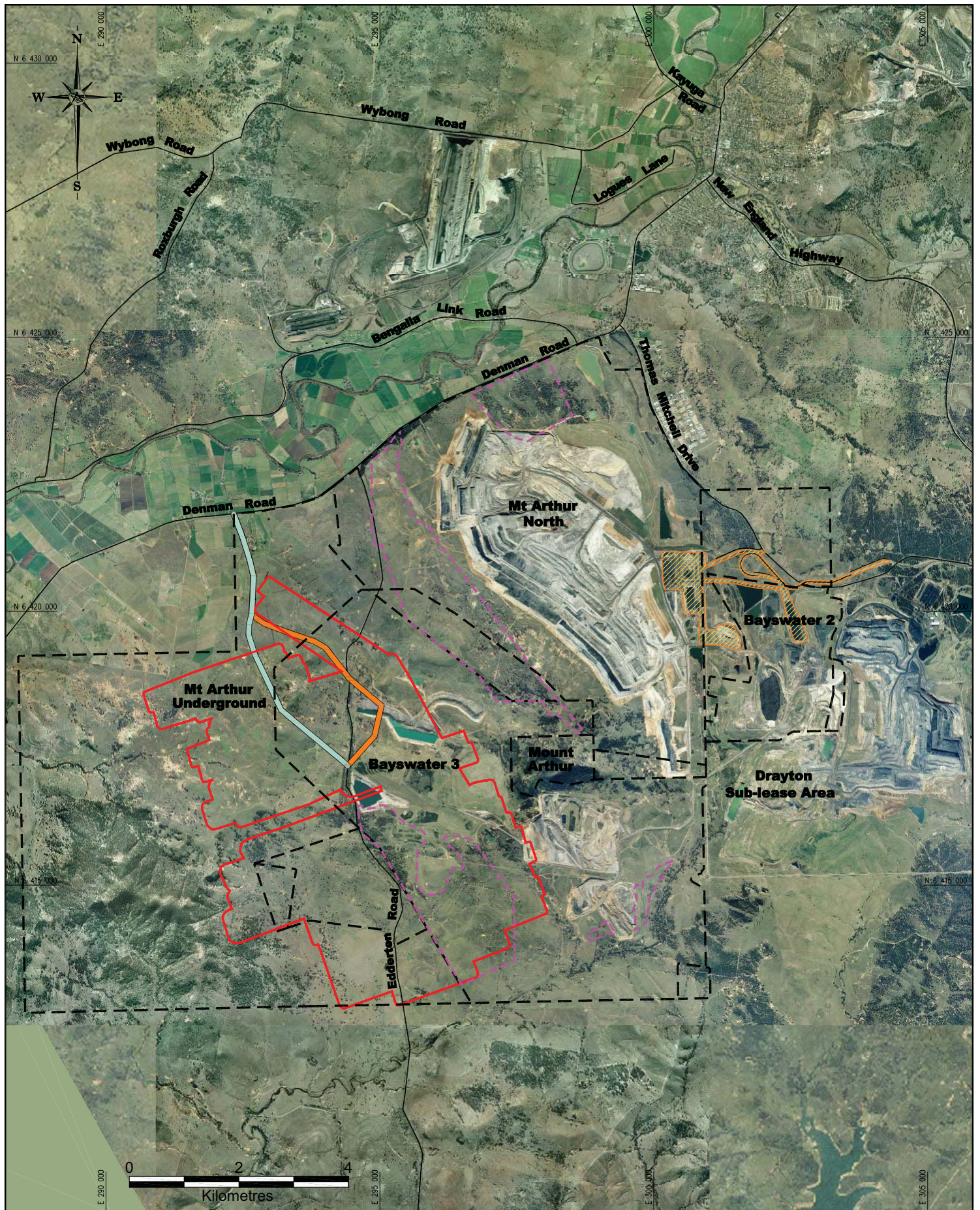
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10.0 Appendix

10.1 Consultation Figure



- Mt Arthur Coal Mining & Exploration Leases
- MAC Consolidation Extension Area
- MAU Disturbance Area
- Edderton Road Realignment Option 1
- Edderton Road Realignment Option 2
- Current Infrastructure

Hansen Bailey



Co-ordinate System: MGA Zone 56
Sources: Umwelt (2007, 2008) and Moore (2001)

MT ARTHUR COAL

Additional Open Cut Disturbance

Cad File: 03651D.dwg

Date: 06.02.09

Drawn: JD

Figure
1

10.2 Landholder Interconnectivity Analysis

