



Appendix 4

Social Impact and Opportunities Analysis

UNITED WAMBO OPEN CUT COAL MINE PROJECT

Social Impacts and Opportunities Assessment

FINAL

Prepared by
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on behalf of
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1.0 Introduction

The United and Wambo mines are neighbouring mining operations located approximately 16 kilometres west of Singleton in the Hunter Valley region of New South Wales (NSW) (refer to **Figure 1.1**). United Collieries Pty Limited (United) the operator of United mine and Wambo Coal Pty Limited (Wambo) the operator of Wambo mine, have formed a Joint Venture which includes the proposed development of the United Wambo Open Cut Coal Mine Project (the Project).

The Project proposes open cut coal mining for a period of 23 years, with mining in a new open cut mine at United (the United Open Cut) combined with ongoing mining at the existing, approved Wambo Open Cut under a modified mine plan. The Project will optimise future mining operations across these two adjoining open cut mining areas, maximising coal recovery and the efficient use of existing mining infrastructure, while providing the operational flexibility required to actively manage the mine to minimise environmental impacts.

The Project is State Significant Development as defined under State Environmental Planning Policy (State and Regional Development) 2011 and requires development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project will also require a modification to the existing Wambo development consents under section 75W of the EP&A Act to harmonise these consents with the Project. An Environmental Impact Statement (EIS) has been prepared to accompany these applications.

This Social Impact and Opportunity Assessment (SIOA) has been prepared by Umwelt (Australia) Pty Limited (Umwelt) as part of the Environmental Impact Statement (EIS) for the Project. The SIOA has been undertaken in accordance with the Secretary of the Department of Planning and Environment's Environmental Assessment Requirements (SEARs) for the Project as discussed within **Section 1.2**. The SEARs were issued on 15 December 2015.

1.1 Project Overview

Mining has been occurring at Wambo since the late 1960s and at United since 1989, with both mines previously undertaking both open cut and underground mining operations. Over this time the two mines have regularly cooperated, including sharing access to coal resources where appropriate, to provide for more efficient recovery of the State's coal resources. The two mines have also shared some mining infrastructure, including the joint use of the Wambo train loading facility, and share water to minimise external water demand.

Building on this long history of cooperative operations, in November 2014 United and Wambo announced a 50:50 Joint Venture between the two companies. The Joint Venture agreement outlines how the two companies will work together to further develop open cut coal resources held by the two mines.

Whilst open cut coal mining has previously been undertaken at United, over the last two decades the focus has been on underground mining. Underground longwall mining operations were approved to provide up to 2.95 million tonnes per annum (Mtpa) of saleable coal. Mining operations were suspended at United in March 2010 with the mine entering a period of care and maintenance. At that time, exploration and pre-feasibility works were commenced to determine the potential for future mining activities within United's mining lease. Ongoing exploration has identified substantial reserves of coal suitable for open cut mining.



FIGURE 1.1
Locality Plan

Ongoing open cut and underground mining is occurring at Wambo, with the mine having approval to extract up to 8 Mtpa of run of mine (ROM) coal by open cut methods. The combined Wambo underground and open cut operations have approval to extract up to 14.7 Mtpa ROM coal, and to transport up to 15 Mtpa of product coal via the train loading facility.

As discussed above, the Project includes open cut mining operations in two areas, the proposed United Open Cut and modified operations in the approved Wambo Open Cut for a period of approximately 23 years. The existing Wambo Open Cut has approval for continued open cut mining until March 2017 (with a modification lodged to extend this to 2020). Due to the progression of mining being slower than originally planned, there will be substantial coal resources remaining in this approved mining area at March 2017 and the Project proposes to continue mining in this approved area. The Project also seeks some minor extensions to the approved Wambo Open Cut surface mining area and will seek approval to mine deeper resources below the approved Wambo Open Cut area.

The Project will produce up to 10 Mtpa of ROM coal. The existing Wambo CHPP and train loading facility will be utilised for the Project. These facilities will also continue to receive coal from the ongoing Wambo underground mine (that is not the subject of this Project).

The Project also requires a number of changes to the layout of existing mining, public and private infrastructure within the Project Area.

The key aspects of the Project are shown on **Figure 1.2** and a summary of the key Project details is provided in **Table 1.1**.

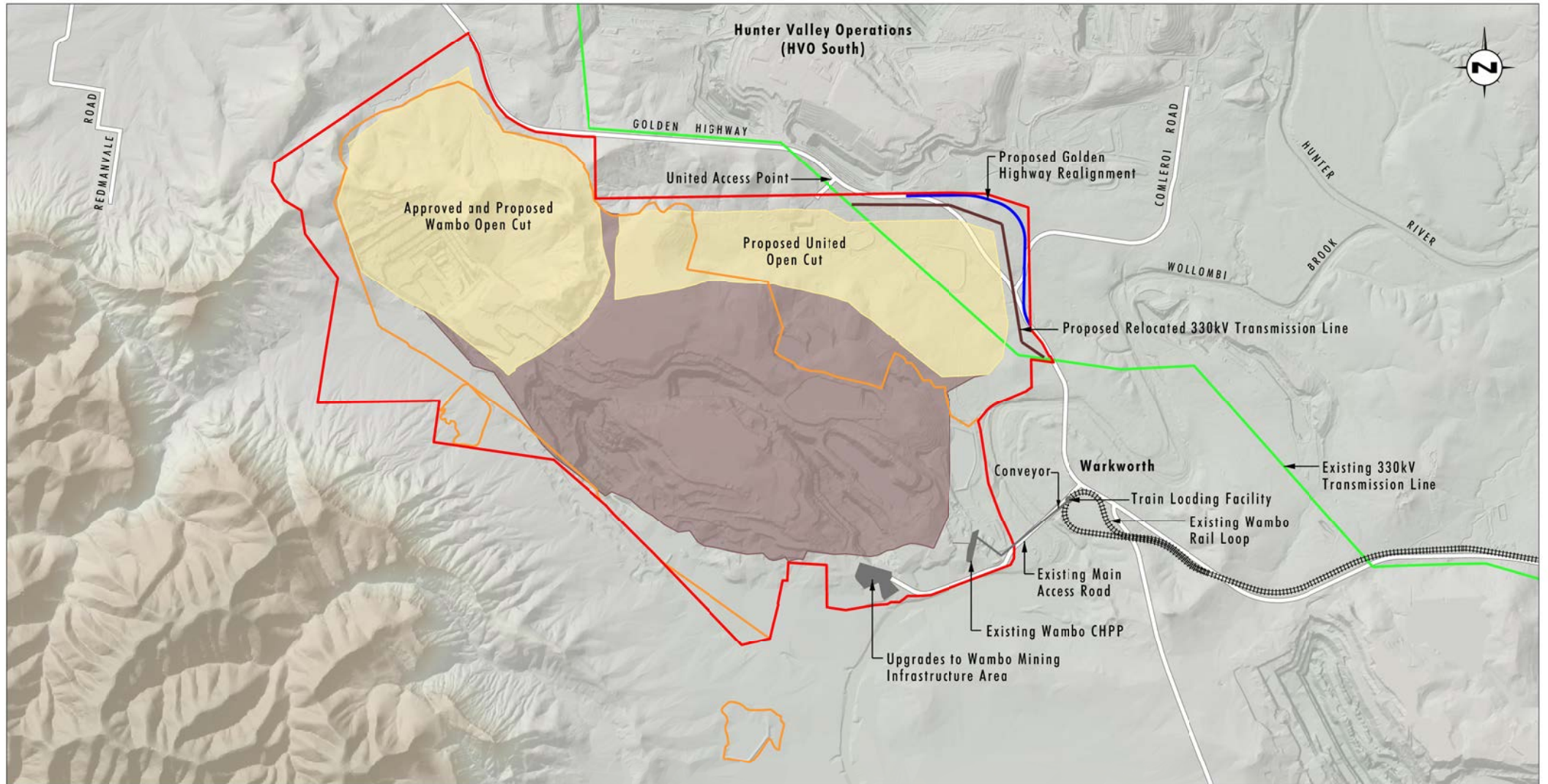


Image Source: United LiDAR (2015)
Data Source: Glencore (2015)

0 1.0 2.0 3.0 km
1:60 000

Legend

- Project Area
- Proposed Conceptual Extraction Area
- Active Mining Area
- Approved Wambo Surface Development Area
- Proposed Golden Highway Realignment
- Existing 330kV Transmission Line
- Proposed Relocated 330kV Transmission Line

File Name (A4): R09/3509_232.dgn
20160715 11.41

FIGURE 1.2

Overview of the Project

Table 1.1 Summary of Key Project Details

Key Project Components/Aspects	Proposed Operations
Key feature of the Project	The operation of a multi-seam open cut mining operation integrating the existing and approved Wambo Open Cut under a modified mine plan and the proposed United Open Cut.
Total Economically Recoverable Reserve	Approximately 176 Mt of ROM coal recovered from the two open cut mining operations, made up of: • approximately 110 Mt of ROM coal from the United Open Cut • approximately 66 Mt of ROM coal in total from the Wambo Open Cut, including an additional 40 Mt accessed from the increased depth of mining.
Extraction Rates	Up to 10 Mtpa ROM coal.
Life-of- Mine	Approximately 23 years from the date of Project approval.
Operating Hours	24 hours per day, 7 days per week.
Number of Employees	Up to approximately 500 total operational positions (at peak production).
Mining Methods	Open cut mining using a truck and excavator/shovel fleet.
Extent of Mining Areas	Refer to Figure 1.2 for the proposed extent of open cut mining. The Project proposes to modify the Wambo Open Cut boundary to maximise resource recovery. The modification to the approved Wambo Open Cut boundary will result in a minor surface adjustment of approximately 3.8 hectares of additional disturbance. The modification also includes accessing deeper seams within the existing Wambo Open Cut.
Infrastructure	Initial use and upgrades of existing United Mine Infrastructure Area prior to its decommissioning and demolition/removal due to the progression of the United Open Cut. Construction of temporary facilities during the construction phase of the Project. Ongoing use, expansion and upgrade of the Wambo Mining Infrastructure Area. Use of existing Wambo CHPP and train loading facility within their currently approved annual capacities of 14.7 Mtpa ROM coal and 15 Mtpa product coal respectively.

Key Project Components/Aspects	Proposed Operations
Tailings and Rejects Strategy	Decommissioning and capping of existing tailings storage facilities located in areas proposed for overburden emplacement and ongoing use of existing tailings storage facilities and storages established in other mine voids as required. Coarse rejects from coal preparation to be transported by truck to the open cut overburden areas for emplacement and subsequent covering by overburden material. Coarse rejects will continue to be co-disposed within the open cut overburden areas for the life of operations.
External Coal Transport	Product coal will continue to be transported off site via train from the existing Wambo train loading facility. Product coal transport rates proposed to increase from a maximum of six to eight trains per day. No change to total approved 15 Mtpa product coal tonnage transported by train.
Roads	Realignment of a 2 kilometre section of the Golden Highway to accommodate the proposed United Open Cut. The main entrance to the Project will be via the existing entrance to Wambo. The existing United access road will be used in the initial phase of the Project for construction and ancillary services with limited ongoing use as a property access point.
Power Infrastructure	An existing 330 kV transmission line which traverses the proposed United Open Cut mining area is proposed to be relocated as part of the Project (refer to Figure 1.2). Several other 66 kV and 11kV power lines will also require relocation to outside of proposed mining areas. Some existing telecommunications and associated infrastructure are located adjacent to the existing alignment of the Golden Highway and will also require relocation as part of the Project.
Water Management	Construction of mine water management controls including dams. Use of the previously mined United underground voids for water storage.

United is owned 95 per cent by Abelshore Pty Limited, a wholly owned subsidiary of Glencore Coal Pty Limited (Glencore) and 5 per cent by the Construction, Forestry, Mining and Energy Union (CFMEU) and is managed by Glencore. Wambo is a subsidiary of Peabody Energy Australia Pty Limited (Peabody).

1.2 Secretary's Environmental Assessment Requirements

The Secretary of the Department of Planning and Environment (DPE) has provided SEARs that identify key issues for consideration in the EIS. The SEARs relevant to this SOIA and the sections where these requirements are addressed in this report are set out in **Table 1.2**.

Table 1.2 SEARs Requirements

SEARs Requirement	Location in Document
Social & Economic – including:	
a detailed assessment of the likely social impacts of the development on the local and regional community; and	Whole document, especially Section 5
the demand for the provision of local infrastructure and services.	Section 5.1

In addition, a detailed economic assessment has been conducted by an external evaluator, as discussed further in **Section 5.2.4**.

1.3 Social Impact and Opportunity Assessment Framework

Consistent with the methodology outlined within the Preliminary Environmental Assessment (PEA), the (SIOA) program has been designed to:

- Profile key communities both in proximity to and associated with the Project operations
- Scope and assess the relevant social issues and opportunities associated with the Project
- Develop strategies to address the identified issues and opportunities and monitor and manage social impacts associated with the Project.

Engagement with the community has been a key component of the program at key phases of the assessment, notably in the scoping of project issues and impacts and the development of appropriate strategies to address and/or mitigate impacts.

1.4 Report Structure

Based on the above framework, this report has been structured according to a number of key sections as detailed below:

- **Section 1:** Provides an introduction and background to the proposed Project and a summary of its key components.
- **Section 2:** Details the methodologies employed as part of the social impact and opportunities assessment program.
- **Section 3:** Comprises a socio-economic profile of the Singleton Local Government Area (LGA), as well as the localities in proximity to/associated with the existing operations and proposed Project as well as the broader region. Localities of interest include Warkworth, Jerrys Plains, Bulga and South Wambo (refer to **Section 3.2** for locality description), and Maison Dieu. Profiles include the perceptions of local residents of those areas. Broader community values and perceptions are also presented.
- **Section 4:** Provides a summary employee and supplier profile of Wambo's existing operations, based on the Town Resource Cluster (TRC) analysis included as **Appendix A**.
- **Section 5:** Provides an assessment of impacts and opportunities of the Project, including assessment for each of the nearby localities.
- **Section 6:** Discusses recommended strategies to manage the predicted and perceived impacts identified during the assessment process and enhance potential socio-economic benefits of the Project.

2.0 Methodology

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

2.1 International Principles for Social Impact Assessment

The International Association for Impact Assessment (IAIA) defines Social Impact Assessment (SIA) as:

the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.
(Vanclay, 2003)

The IAIA identifies social impacts as issues affecting, directly or indirectly:

- *People's way of life*, that is: how they live, work, 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
- The community, that is: its cohesion, stability, character, services and facilities
- *Their political system*, such as: 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*, such as: 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*: health is a state of complete physical, mental, social and spiritual 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*, that is: 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.

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 the SIOA to determine how such impacts may be addressed effectively to reduce the degree of social disruption to those affected. If positive impacts are predicted, the aim of the SIOA is to utilise these opportunities and identify how these impacts might be further enhanced. Monitoring and evaluation is also a key component of an SIOA process to monitor impacts over time and identify any unanticipated impacts that may arise as a result of the Project.

2.2 Assessment Activities

The phases of the SIOA undertaken for the Project have been developed to build a well-evidenced assessment of social impacts by:

- *Developing a profile of the social and economic context in which the Project is located*, at a local and regional scale and to summarise social/community issues of relevance to the Project. It is important to note that the Project involves the continuation of existing operations, and impacts of the Project (and the associated change) need to be specifically identified.
- *Identifying the impacts and opportunities associated with the Project* through engagement and consultation with near neighbours, village residents and regional stakeholders within the Singleton LGA, and specifically the communities of Warkworth, Jerry Plains, Maison Dieu, and Bulga. This information has been used to inform Project planning and design in a proactive way and to ensure that issues of relevance to the community are considered adequately in the EIS for the Project.
- *Assessing and predicting the significance of impacts associated with the Project* through the application of a 'risk-based' approach; integrating both perceived and technical assessments of risk. Where available, relevant data sets have been used to inform the assessment of impacts associated with the Project and to explore perceptions raised in consultation with the community. This approach affords greater integration with the broader environmental assessment work so that impacts of relevance to technical specialists and community members are adequately discussed and considered in the impact assessment process.
- *Developing strategies that address and manage the predicted social impacts associated with the Project* and which may enhance opportunities in a manner that values existing community aspirations and assets.
- *Identifying what will require monitoring should the Project be approved* and how any unanticipated social impacts that may result from the Project will be identified.

Table 2.1 summarises the social assessment mechanisms specifically utilised during each phase of the SIOA program. This consultation has been further complimented by engagement undertaken by the Project team with Government agencies and other key stakeholders in the course of other operational and assessment activities.

Table 2.1 Summary of Social Impact and Opportunities Assessment and Engagement Methods

Method	Description
<i>Phase 1 – Program Planning</i>	Development of a stakeholder engagement strategy for the Project.
<i>Phase 2 – Community Profiling</i>	Examination of a range of secondary data sources e.g. census data, social and community indicators, historical accounts of the region, local media resources; assessment of the social and economic linkages between United and Wambo and the community; and face to face interviews with key stakeholders.
<i>Phase 3 – Scoping of Issues and Opportunities</i>	Review and analysis of historical stakeholder consultation outcomes and complaints data for United and Wambo to obtain an understanding of perceived issues and opportunities. Face to face meetings with neighbours of the Project to identify perceived issues and opportunities relating to the Project, followed by ranking of perceived issues and opportunities relative to frequency of response. Briefings with NGOs, business groups and other interested stakeholders to identify perceived Project issues and opportunities.
<i>Phase 4 – Assessment of Impacts and Opportunities</i>	Assessment of unmitigated environmental and social risks and prediction of social impacts associated with the Project.
<i>Phase 5 – Prediction of Impact and Strategy Development</i>	Plotting of impacts to prioritise social risk rankings and guide management strategy development. Identification and development of appropriate strategies to address predicted Project impacts and monitor change.

2.3 Engagement Activities

2.3.1 Engagement Methods

As noted above, engagement with the community has been a key component of the SIOA program. It has been undertaken at key phases of the assessment, namely in the scoping of Project issues and impacts and the development of appropriate strategies to address and/or mitigate impacts.

A range of consultation mechanisms have been utilised to obtain the input of views of the differing stakeholder groups. **Table 2.2** outlines the mechanisms used to engage with local landholders, key stakeholders, United and Wambo employees and the wider community.

Consultations were conducted with community members in mid 2015 with the aim of collecting information about existing operations and the Project, perceptions of the impact of the Project, and opportunities for improved communication and interaction between Glencore/Peabody and local communities. In total, 27 face to face meetings were conducted, with the majority of those consulted living in Jerrys Plains and residing in proximity to the Project (17). The remainder of the interviews were conducted with landholders from:

- Maison Dieu (5)
- Bulga (3)
- Warkworth (2).

In addition, six additional interviews were conducted with representatives from local community or other organisations.

Table 2.2 Consultation and Communication Methods

Method	Description
Engagement	
Near neighbour and landholder interviews	Face to face interviews with near neighbours and landholders to outline Project aspects. A total of 27 face to face meetings were conducted with people and groups from Warkworth, Jerrys Plains, Maison Dieu, Bulga and surrounds and approximately 125 additional calls and 15 doors knocked undertaken to contact other landholders for additional meetings that were either declined or no response was provided, following repeated contact.
Regional stakeholder consultation	Face to face meetings with key regional stakeholders drawn from across key community service sectors within the Singleton LGA i.e. education
Government briefings and consultation	Briefings and face to face meetings with relevant government representatives (local, state and federal) to present the Project and obtain feedback on Project aspects.
Community Information Evening / Community BBQ	Facilitation of a community information evening in Jerry Plains provided the opportunity to present the Project and document perceived issues and opportunities (held on 10 June 2015). Over 50 local residents attended the session. A further information evening is proposed in prior to public exhibition (June 2016) to share the results of studies undertaken during the EIS process.
Community Consultative Committee (CCC) presentations	Presentations by the Project team to United CCC: • 9 December 2014 • 18 March 2015 • 9 December 2015

Method	Description
	Communication by Wambo to the Wambo CCC: • 2 December 2014 • 7 July 2015 • 29 September 2015.
Wambo Workforce and Supplier Surveys and workforce briefings	A survey of the Wambo workforces, including contractors and mine site suppliers conducted in late 2015.
Collaborative In-Focus Forum	Community workshop style forum focusing on final landform & visual impact.
Information Provision	
Newsletters	Development of Project newsletters summarising key aspects of the Project and progress/outcomes of the environmental and social assessment program – distributed to neighbouring community residents and relevant stakeholders. Three newsletters have been distributed to date to over 550 households. Available online at http://www.unitedcollieries.com.au/EN/ReportsandPublications/Pages/CommunityNewsletter.aspx.
Project EA Summary Booklet	Summary of the key outcomes of the EIS for the Project, proposed to be distributed to all households in the local villages and key stakeholders on the Project database.
Project Enquiry Line	Phone enquires about the Project were handled via existing contact and information lines held by Glencore and Peabody Project Managers.

Discussions with stakeholders have been guided by the use of structured interview guides and have focused on a range of topics including, but not limited to, the following:

- Previous contact with Peabody and / or Glencore regarding Wambo and/or United operations, for example, complaints, community support and involvement in community events
- Concerns and perceptions regarding impacts associated with current activities at the existing Wambo or United operations and the effectiveness of impact management measures as a result of operational activities to date
- Concerns and perceptions regarding impacts associated with potential Project activities at the proposed Project
- Perceived costs and benefits of mining more broadly in the region
- Key strengths and assets within the local communities/villages

- Suggestions of groups, programs or activities for future social investment activities, based on existing community need
- Preferences for receipt of Project information and mechanisms for engagement.

Consultation activities also sought to identify what people value in their community, i.e. *what is particularly important and why?* via a values mapping exercise. This was undertaken to assist stakeholders identify particular places and locations that they value and articulate how they perceive these values being impacted by the Project (either positively or negatively).

2.3.2 Program Participants

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

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

As part of the SIOA program for the Project, a wide range of stakeholders have been identified and involved in the program. These stakeholders have been grouped as follows:

- Local landholders and residents residing in proximity to the Project operations
- United and Wambo employees
- Local community and environmental groups and organisations
- State and Commonwealth Government agencies
- Local Government representatives
- State and Federal Elected Representatives
- Local business and business chambers/groups
- Service providers, including education (e.g. Jerrys Plains Public School) and emergency services.

Table 2.3 provides an overview of the number of stakeholders consulted across each stakeholder group category. A total of 665 stakeholders have participated in the consultation process to date, with Project newsletters also being distributed to approximately 550 stakeholders. In relation to the SIOA, the engagement mechanisms utilised have varied and, where possible, have been matched to stakeholder groups to facilitate participation in the assessment program.

Table 2.3 Consultation Summary

Stakeholder Category	Number of Participants
Landholders / Local Residents	116
Local Community Groups, Businesses and Service Providers	13
Neighbouring mining companies	2
State/Federal Government Agencies, committees or boards	14
Local Government	1
Infrastructure Service Providers	6
Aboriginal stakeholders	83
Wambo /United employees and contractors	319
Wambo /United Suppliers	111
Total	665

3.0 Socio-economic Context and Locality Profiles

3.1 Overview

A baseline social profile gathers knowledge from primary and secondary data sources to increase levels of understanding of the existing social and economic environment in which a project is proposed. The profile is a necessary component of the SIOA, and provides a foundation from which impacts associated with the Project may be predicted.

The following components have been assessed in the development of this social profile:

- **Development context and geographic scope** – description of the context and identification of the communities / villages of interest relevant to the current assessment
- **Historical context** – review of the history of the local area and communities, including their culture and values
- **Governance** – outline of relevant administrative and political structures at local, state and federal levels
- **Key community values, issues and concerns** – documentation of current community issues in the Singleton LGA and NSW state as a whole, as identified in key planning documents, regional studies and the local and regional media.

Data sources utilised in the preparation of this profile section include:

- ABS Australian Census of Population and Housing (ABS, 2011¹)
- Local and State Government reports
- Relevant research reports and publications
- Other social indicator datasets e.g. Social Health Atlas (PHIDU, 2015) and Bureau of Crime Statistics and Resources (BOCSAR, 2015)
- Review of relevant print and selected online media.

¹ Note longitudinal analyses was not considered feasible as the geographic boundaries for the local areas changed between 2006 and 2011 census'

3.2 Geographic Context

The United and Wambo coal mining operations are situated approximately 16 kilometres west of Singleton in the Hunter Valley of NSW. Nearby to the operations, as depicted in **Figure 3.1**, are the localities of:

- **Jerrys Plains** is a small township located in the Hunter Valley, approximately 25 kilometres west of Singleton, and approximately 6 kilometres to the north-west of the Project Area. To the north of Jerrys Plains there are some substantial horse-breeding properties, as well as viticulture. The closest viticulture Critical Industry Cluster is approximately 5 kilometres south of the Project Area. As at the 2011 ABS Census, the population of the town was 370, with a slighter older population than that of the broader Singleton LGA and NSW population.
- **Bulga / South Wambo** is a small community in the Upper Hunter, approximately 20 kilometres southwest of Singleton, and approximately 7 kilometres to the south of the Project Area. The village of Bulga comprises 152 homes and 358 residents, and has a slightly higher median age than NSW. It is the village hub for surrounding agricultural and rural residential holdings, including landholders to the north in the area between the Bulga Village and Wambo, referred to as South Wambo.
- **Warkworth** is a locality in the Hunter Valley located 15 kilometres west of Singleton, and approximately 1 kilometre to the south east of the Project Area. The population for the Statistical Area Level 1 (SA1) for Warkworth was 181 in 2011, however note that this covers a region larger than the specific locality of Warkworth as in **Figure 3.1**. Additionally information gathered through community consultations indicates that this figure may have fallen considerably over the last few years. The township may have been in decline in recent years due to a population shift to other localities, and a sharp reduction in the number of owner occupied houses across the SA1 from approximately 204 to 66 from 2006 to 2011, noting a change in ABS boundaries over this time. This is discussed further in **Section 3.8**.
- **Maison Dieu** is a small community of agricultural and rural residential landholdings on the north side of the Hunter River, approximately 4 kilometres to the north east of the Project Area. Access to Maison Dieu is through Singleton, and there is no link to the Golden Highway across the Hunter River. In 2011, Maison Dieu had a population of 162. The median age of the population is 37 years with very low numbers of residents in the over 70 year age bracket, when compared to Jerrys Plains and broader NSW.

The Statistical Area Level 1 (SA1) for each of these localities, as defined by the ABS (2011) (refer to **Figure 3.1**), has been profiled in order to understand the local context and enable assessment of impacts at a local scale as discussed in **Section 3.7 to 3.10**. It should be noted that the last ABS census was undertaken in 2011 and as this is the last year of the 5 year ABS data cycle, this data may be outdated given the rapid change the region has gone through in this time. Each SA1 has been compared with:

- **Singleton LGA:** as the LGA in which the existing operations are based and where a large proportion of future employees are likely to reside, and
- **The state of NSW:** to afford a comparative assessment and assess the proposed change to the NSW community broadly.

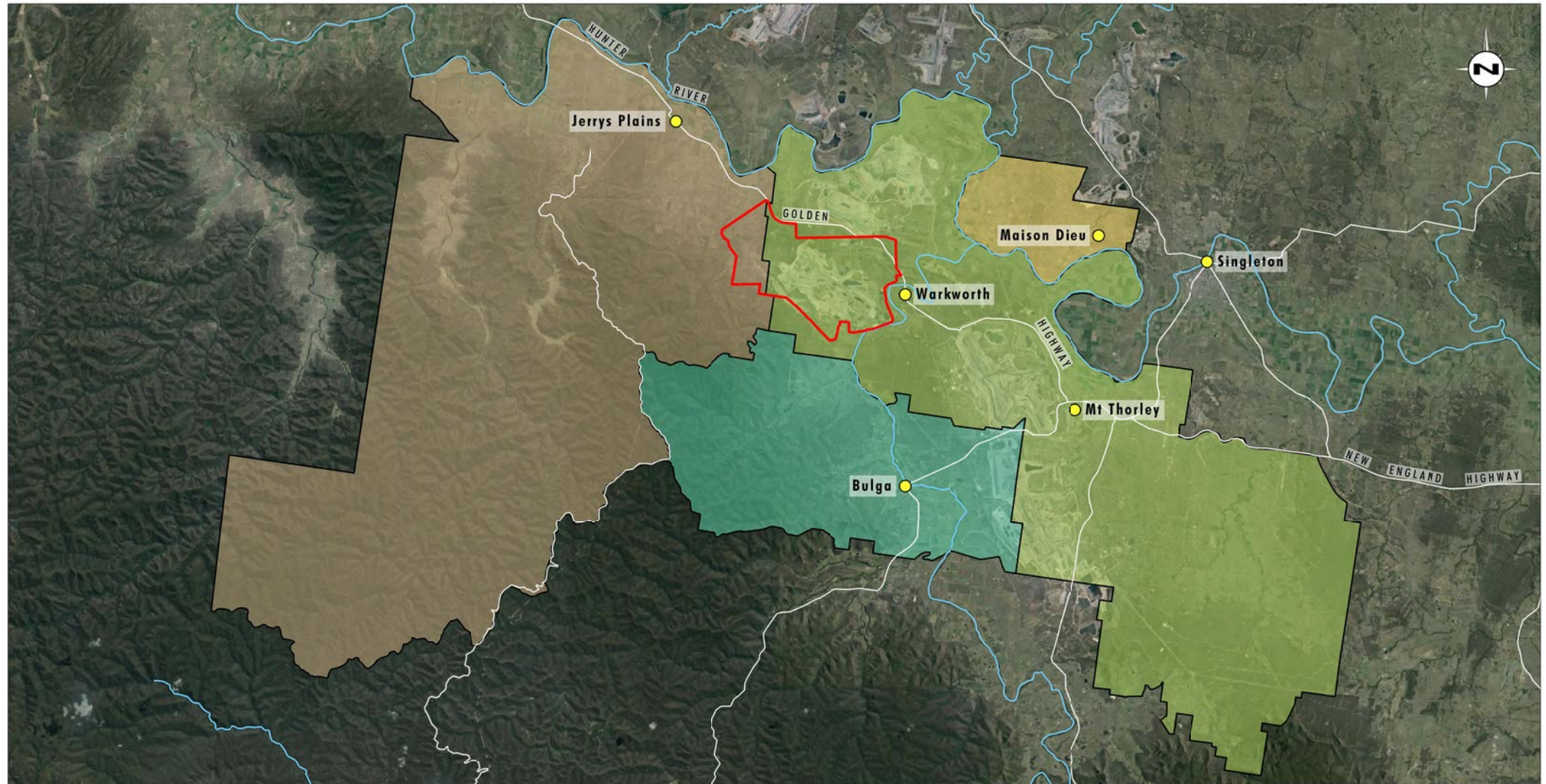


Image Source: Google Earth, DigitalGlobe (2013)
Data Source: ASGS (2016)

0 4.0 8.0 12.0 km
1:260 000

Legend

- Project Area
- Jerrys Plains SA1 Boundary
- Warkworth SA1 Boundary
- Maison Dieu SA1 Boundary
- Bulga/South Wambo SA1 Boundary

File Name (A4): R09/3509_244.dgn
20160506 16.27

FIGURE 3.1

Local Area

3.3 Governance

The Singleton LGA is governed by Singleton Council. The Mayor, the independent Councillor John Martin, is directly elected by residents of the Singleton LGA with the additional nine councillors elected proportionally as a single ward.

The northern half of the Singleton LGA is part of the Upper Hunter state electoral district (where the Project Area is located) which extends from Spring Ridge in the north to Yengo National Park in the south and from the Talbragar River in the west to Bundook in the east. It is represented by The Nationals Party member Michael Johnsen.

The federal electoral division is Hunter with the current Labor Party member, Joel Fitzgibbon, holding the seat since 1996.

3.4 Local History

Some of the earliest European expeditions to the Singleton area were by Benjamin Singleton, John Howe and William Parr from 1817-1820. In 1821, Henry Dangar was commissioned to undertake a survey of the Hunter Valley to assess its suitability for settlement and farming. Settlement followed closely behind Dangar's 1821 survey party, with settlers occupying land as far north as Singleton by October 1821.

European settlement expanded quickly in the mid nineteenth century, with a total of 372,141 acres being allotted to European settlers in the Hunter Valley between 1822 and 1826. This was increased to over 500,000 acres by 1867 (Brayshaw 1986:10). Prior to this the original Aboriginal inhabitants were the Wonnarua people whose traditional lands are understood to be centred within the Upper Hunter Valley.

The coal industry in Singleton can be traced back to the 1850s in Rix's Creek and Glendon. At Rix's Creek, a substantial mine was developed by James Singleton and by the late 1800's there were about sixteen different mines in the Singleton area. Still to this day Singleton remains a town whose growth and economy is encouraged by the presence of mining in the area. In 1947, the population of Singleton was 2996 and by 1976 it totalled 12,359. Growth and expansion has continued since this time.

Further detail relating to the Aboriginal and European settlement in the Hunter Valley is provided in the Aboriginal Cultural Heritage and Archaeological Assessment, and Historic Heritage Assessment provided as Appendices 14, 15 and 16 of the EIS.

3.5 Demographic Snapshot of Singleton Local Government Area

A summary of the demographic, economic, infrastructure and service provision and health aspects context of the Singleton LGA is provided below. Each of the localities is profiled separately in **Section 3.7 to 3.10**. It is important to note in the review of this context that 2011 was during the 'coal chain event' of 2010-2012, where intense social and infrastructure pressures were placed on Singleton and other communities within the Hunter Valley caused by intense mining and infrastructure development activities (Carver, 2015). Following this event there has been a decrease from the peak of development back to a more 'historical market pattern' (Carver, 2015).

3.5.1 Population

In 2011, the Singleton LGA had a population of 22,694 with a median age of 35 years and a gender balance of approximately 50/50. The Aboriginal and Torres Strait Islander people at the time of the latest Census constituted 3.7 per cent of the total population of the LGA.

The wider Upper Hunter Region experienced significant population growth between 2006 and 2011, with an increase in population of around 17 per cent over the five year period, around three times the NSW state average of 5 per cent (ABS, 2006 and 2011).

3.5.2 Economy

Originally settled in 1824, Singleton had an agricultural base predominantly in dairy and cattle. The dairy industry has reduced in size significantly but is still producing similar volumes of product to what it has previously. Similarly, beef cattle production remains high but with far fewer producers present (Singleton Economic Development Strategy, 2015).

Farm holdings in the Hunter region comprise between 52 – 80 per cent, with a mix of primary grazing and cropping with the gross total value of agriculture for the Hunter Valley (excluding Newcastle) estimated at \$330.6 million (ABS, 2011).

For the past 20 years Singleton has seen a growing mining industry, which has brought economic benefits to the town. The Singleton Economic Development Strategy 2015 refers to there being approximately 24 mining companies that are working in the area, employing over 5000 people (Singleton Economic Development Strategy, 2015).

Figure 3.2 graphs the unemployment rates for the Hunter Valley region (excluding Newcastle), compared with unemployment rates for NSW. While unemployment rates in the Hunter Valley have been lower than NSW in 2009 to 2013, they peaked during March 2015 at 12.8 per cent, before dropping to seven to eight percent in third quarter 2015².

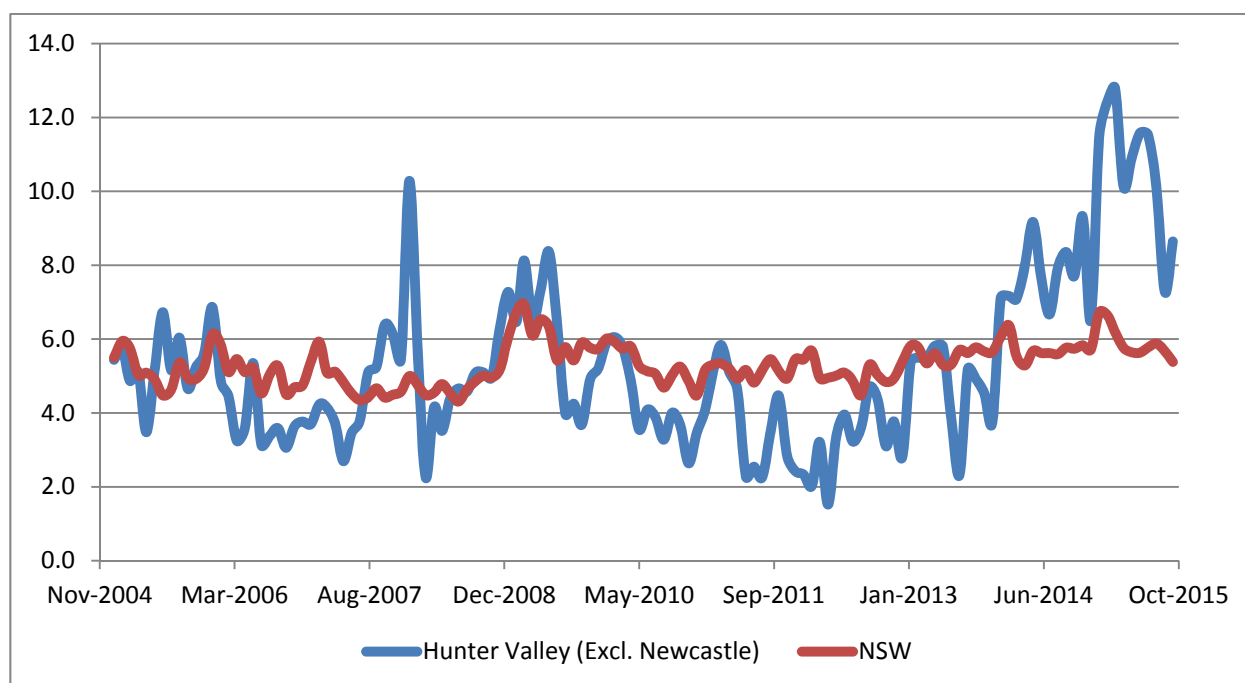


Figure 3.2

Unemployment rates – Hunter Valley and NSW (ABS, 2015)

² Note many data points for Hunter Valley (Excl. Newcastle), especially older points, are subject to sampling error. All data have been left in as they assist in the presentation of a general trend, but should be used with caution. Data from 2013 onwards is largely sampling error free.

Consistent with **Figure 3.2**, there are signs that the Hunter Valley Region's labour market is stabilising with steady employment growth and a recent fall in unemployment rates.

The proportion of people employed rose 4.5 per cent between March 2015 and the end of September 2015, after steadily declining throughout most of 2014 and the first quarter of 2015. The increase has been driven by greater employment in health and aged care, and building-related industries, such as the construction sector, where lower interest rates have boosted dwelling investment. Employment has contracted in wholesale trade, finance and insurance services and mining.

The unemployment rate has fallen from a 15-year high of 12.8 per cent in March 2015 to 7.1 per cent (three-month moving average) at the end of September 2015. The decline has been greatest amongst the Hunter's young people (15-24 year olds), where unemployment has fallen from one-in-five people unemployed to almost one-in-seven. Rising employment and falling unemployment reflects the rebalancing of the Hunter economy from mining to non-mining industries. A continuation of this trend could see the Region return to the 6-6.5 per cent unemployment rates it achieved during the pre-mining boom period of the mid-2000s (Hunter Region Economic Indicators, Hunter Valley Research Foundation, 2015).

The largest industry of employment in the Singleton LGA during 2011 was mining (25 per cent), well above the next largest industries; retail trade at 8 per cent and manufacturing at 7 per cent (refer to **Figure 3.3**).

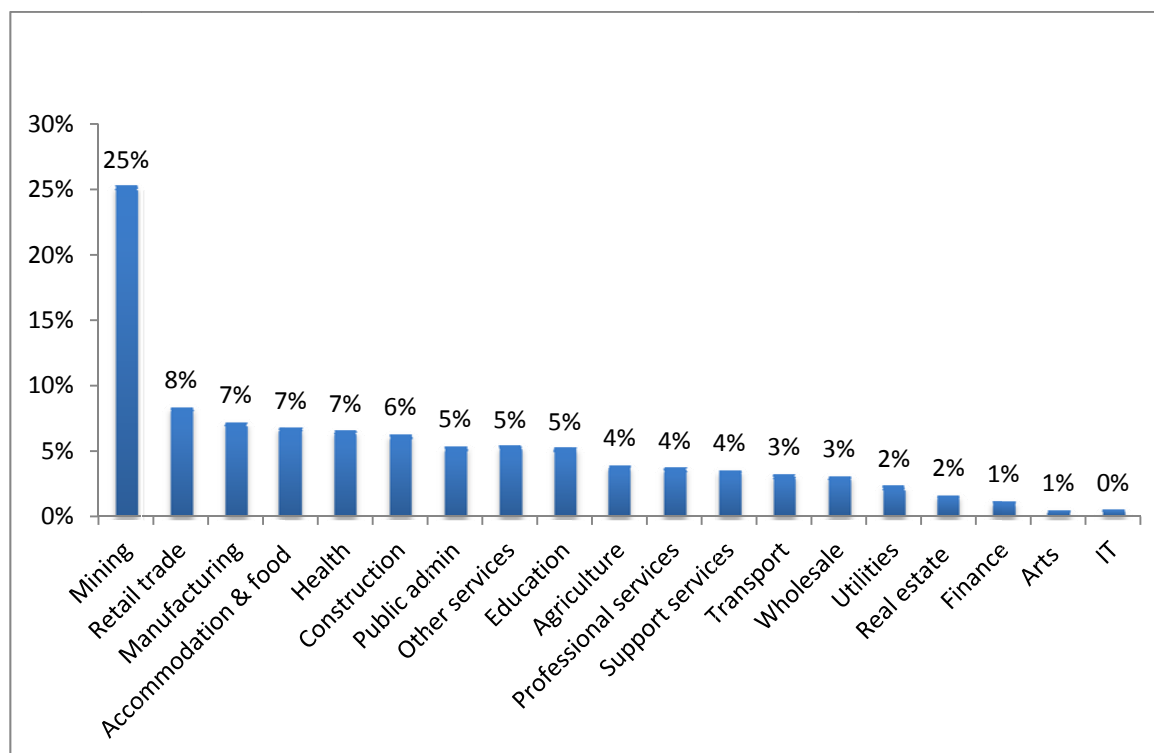


Figure 3.3

Industry of Employment Singleton (ABS, 2011)

Figure 3.4 details the shift in employment by industry type since August 2010 and shows an increase in employment in the mining sector by 2014, followed by a decrease of these numbers in 2015, although they still remain above 2010 levels. There has also been a steady increase in employment in the accommodation and food services and health care and social assistance sectors.

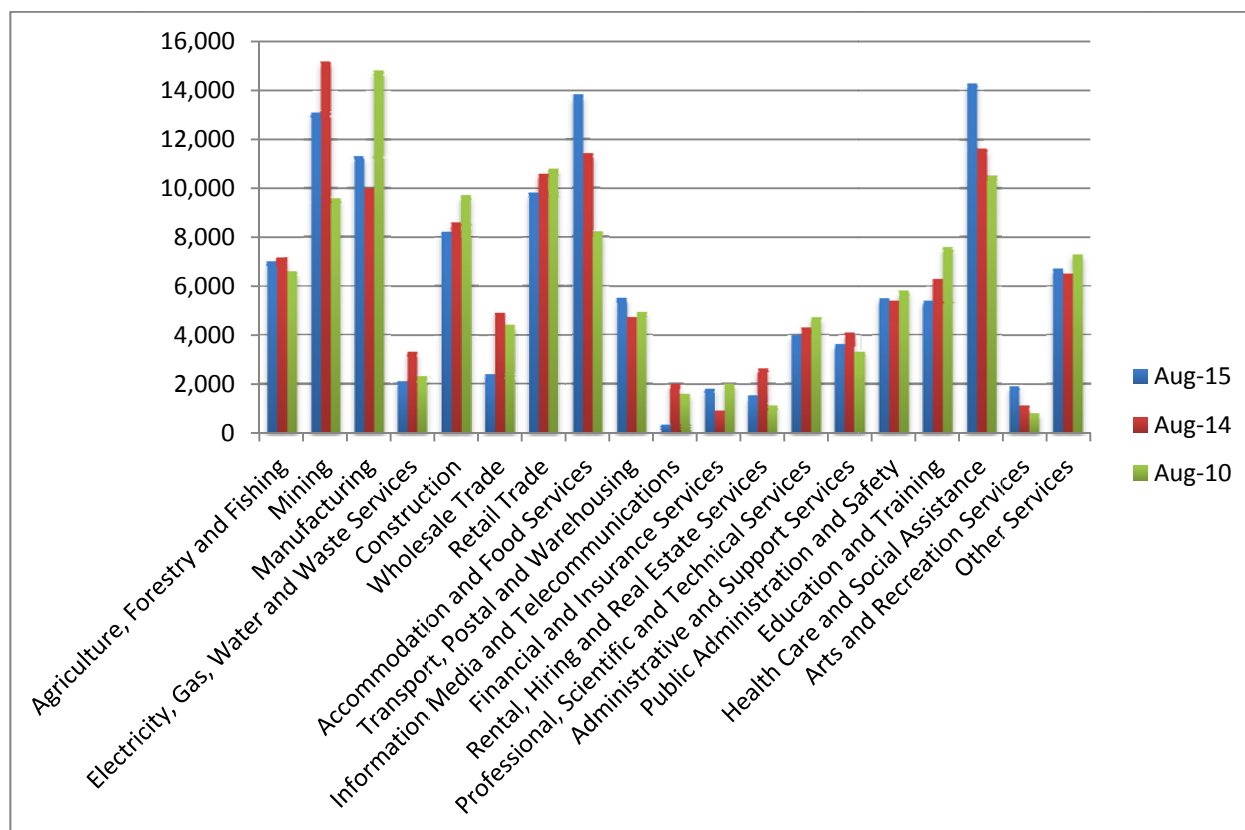


Figure 3.4

Industry of Employment Singleton (ABS Labour Force Survey 2015)

However, as indicated in **Figure 3.5** the price of coal in Australia has consistently fallen since the peak of the 'coal chain event' at the end of 2010 to less than half in 2015. This has led to a substantial retraction in employment growth and associated economic opportunities within the industry in the Hunter Valley, with the mining sector collectively reportedly having lost over 5000 jobs over the past two years (Singleton Economic Development Strategy, 2015). Further detail relating to coal price related impacts and projected future coal prices and demand is provided in the Economic Assessment included as Appendix 19 of the EIS.



Figure 3.5

Australian Coal Price USD\$ 2010 - 2015 (Index Mundi, 2015)

Economic challenges and opportunities predicted for the region in the next 20 years include growth and diversity in the regional economy, improvements in the regions infrastructure, cohesive planning for the future, skills and workforce development, creativity and innovation, and a focus on the natural and built environment (Deloitte Access Economics, 2013).

3.5.3 Education

As the largest town in the Upper Hunter Valley, Singleton is an important commercial centre and has a number of primary and secondary educational facilities that service the local surrounding townships. These are listed at **Table 3.1**.

Table 3.1 Educational Facilities Singleton (Umwelt, 2015)

Level	School / Facility	Enrolments
Primary	Australian Christian College (ACC)	72 (2014)
	Broke Public School	57
	Jerrys Plains Public School	36
	Kings Street Public School	435
	Milbrodale Public School	9
	Mount Pleasant Public School	54
	Singleton Heights Public School	589
	Singleton Public School	428

Level	School / Facility	Enrolments
Secondary	Australian Christian College (to Year 10)	72 (2014)
	Singleton High School	1,221
	St. Catherine's Catholic College (K – 12)	940 (2014)

Source: NSW Department of Education website; ACC website

The Hunter Institute of Technology or Hunter TAFE has a campus in Singleton which offers locally relevant courses in:

- Transport and mining
- Animal and equine studies
- Hairdressing and beauty
- Manufacturing and engineering
- Tourism, events and outdoor recreation
- Administration, business, library and real estate
- Environment, horticulture and primary industries
- Education for careers and further study.

3.5.4 Community Health and Well Being

Overall, the health and well-being of residents in Singleton LGA is comparatively good, relative to residents in NSW broadly, however the LGA reportedly has a higher rate of residents in residential aged care than the NSW average (PHIDU, 2015).

With regards to health indicators:

- The rate of respiratory system disease (including asthma and chronic obstructive pulmonary disease) is higher in Singleton LGA than in NSW (ASR 31.9 per 100, compared to ASR 25.5 per 100 for NSW) (PHIDU, 2015).
- Fewer people rate themselves as having fair or poor health in Singleton (ASR 13.1 per 100) than the state average (ASR 14.3 per 100)
- Adults in Singleton LGA report lower levels of psychological stress than the NSW average
- The proportion of the adult population that has at least 1 of 4 health risk factors such as smoking, harmful use of alcohol, physical inactivity and/ or obesity is lower than the NSW average (ASR 56.6 per 100) in Singleton (ASR 55.6 per 100) (PHIDU, 2015).

Singleton provides the hub for the local provision of services such as health and medical. Health services and facilities include:

- Occupational therapy
- General Practice
- Sexual health
- Pathology
- Podiatry
- Psychology & counselling
- Speech pathology
- Ophthalmology
- Skin checks
- Audiology
- Audiology
- Dentistry
- Optometry.

In addition, Singleton District Hospital provides Emergency, Surgery, Obstetrics, Renal Dialysis, Palliative care, Acute and chronic medicine, Outreach medical specialists, and Allied Health services.

The built infrastructure in Singleton LGA is generally well developed for a regional area, with a wide range of recreational, sporting and open spaces, a well-resourced library and multiple community halls also available, including the Civic Centre which acts as a prominent community hub in the town (Singleton Council, 2014).

3.5.5 Transport and Infrastructure

The Singleton LGA is traversed by two main national highways: the New England Highway, which links Sydney to Brisbane; and the Golden Highway, which links Newcastle to the Western Region of NSW via Dubbo and provides access to the existing operations at United and Wambo. The Hunter Expressway linking Singleton to the M1 expressway was completed in 2014, providing increased connectivity between the Hunter and the coast, including Newcastle and Sydney.

There is a lack of public transport within the wider Singleton LGA, and no public transportation in Jerrys Plains. This means that people are typically reliant on private vehicles (Singleton Council, 2015 - Singleton Council Economic Development Strategy). Singleton is on the Hunter passenger train line for Transport NSW and there is a bus service to Maitland provided by Hunter Valley Buses.

Singleton Council provides most of the public utilities, including water supply, town sewerage services, domestic general waste and recycling collection services while energy for the Singleton LGA is provided by Ausgrid (Singleton Council, 2014).

Three of the Hunter's four power stations (Bayswater, Liddell, and Redbank coal-fired power stations) are located in the Hunter Valley. These power stations cumulatively generate more than 60 per cent of the state's energy supply (Department of Planning and Infrastructure, 2012). It is noted that Redbank power station has not operated since October 2013.

3.5.6 Crime

In the Singleton LGA, crime rates have been generally stable between 2010 and 2015 with rates of domestic assault, non dwelling break and enter and damage to property all reduced. Exceptions to this include a 23 per cent increase in breaches of apprehended violence orders, a 29.4 per cent increase in possession and/or use of cannabis offences and a 10.0 per cent increase in prohibited and regulated weapons offences (BOCSAR, 2015).

3.6 Council Vision and Planning

Each year the Singleton Council produces reports to review its performance and achievements and plan for the future. The Singleton Community Strategic Plan 2013 – 2023 is a reflection of the priorities, ambition and directions of the community and contributes to both the NSW 2021 priorities and targets and those of the Hunter Regional Action Plan. The plan focuses on four key pillars: Community, Place, Environment and Community Leadership.

A review of the Plan indicates that, the broader Singleton community values its community identity and community services, and promotes learning and healthy lifestyles. The Singleton community also value community leadership, organisation and strong local businesses. The Community Strategic Plan advocates community leadership through informed and active decision making, a diverse economy, an effective delivery of services and collaborative businesses that strengthen the community.

The natural environment is of high value to Singleton residents, with the Plan giving priority to the protection of the natural and built environment, sustainability in all actions, environmental awareness and positioning Singleton at the forefront of alternative energy. Singleton is surrounded by World Heritage-listed wilderness, like the Yengo and Wollemi National Parks, which offers opportunities for recreation and increased tourism. The Singleton community values its local places and has a focus on safety, affordability, connectedness, heritage and sustainable assets.

Mining is a key industry in the Singleton LGA and there are 24 coal mines located within the LGA itself. The royalties generated from mining activity totalled \$550 million between 2011 and 2012; in addition to this, the mining industry employs 2800 Singleton residents. Mining in the Singleton LGA is presented in the Strategic Plan as a benefit to the economic prosperity of the region. However, a number of negative aspects are also identified, including:

- Housing and accommodation pressures
- Increased cost of living
- Prevalence of a drive-in/drive-out workforce
- Tensions between competing land use (e.g. mining and agriculture and residential)
- Health/community impacts of mining shift work
- Changes to local amenity
- Traffic congestion created by commuting workforce
- Loss of community and decline of surrounding villages
- Stress on infrastructure and services.

It should be noted however, that recent and rapid changes in the economic context subsequent to the Plan as a result of the end of the coal chain event and downturn in the mining industry, may have resulted in a shift of issues. For example, decreased stress on housing and accommodation due to less mining workforce demand (Carver, 2015).

Singleton Council has also undertaken additional strategic planning in order to guide and facilitate the implementation of the long term community strategic plan. Supporting plans include:

- Singleton Lifestyle Plan for Older People (Singleton Council, 2015)
- Multicultural Action Plan (Singleton Council, 2014)
- Local Villages Planning Study (ongoing).

Plans of particular relevance to the Project include the *Singleton Accommodation and Housing: Strategy and Action Plan* (Carver, 2015) and the *Singleton Council Open Space and Recreation Needs Study* (Ross Planning, 2013).

The Accommodation and Housing Strategy and Action Plan particularly notes impacts on housing from the recent 'coal chain event' (Carver, 2015) as:

- Local investment into detached and duplex housing products in Singleton Heights fulfilling a shortfall in detached product over the previous ten years
- A high portion of duplex houses were investor driven for the rental market, leading to a rental oversupply post the mining boom, resulting in distressed investments being offered for sale at 10-15 per cent less than peak market value
- Lower and middle income earners could enter the housing market, further taking pressure off the rental housing sector and community housing
- Renters were afforded the opportunity to upgrade their accommodation quality or seek rental options at a lower price point.

3.6.1 Community Perceptions

Singleton Council has commissioned community surveys to monitor community satisfaction with the delivery of services provided by Council. The most recent Community Survey reviewed was conducted by Iris Research in 2011. The results of this survey conclude that:

- Over time the level of satisfaction of residents with the performance of Council had fallen from 55.2 per cent in 2007 to 41.4 per cent in 2011
- A majority of residents felt that community resources should be used to influence areas such as health (95 per cent), education (85 per cent), a sense of community (85 per cent), regional planning (83 per cent) and economic development (83 per cent).

Participating residents also had the opportunity to rate their priorities with regards to Council's future allocation of resources with the top three priorities noted as:

- Health facilities and services
- Singleton Council being more ethical, transparent and accountable
- Building a proud, caring and cohesive community.

Building on the Council's assessment of community attitudes, representative from local community/progress organisations were also included in the consultation process for the current assessment. In relation to the Singleton area, a number of participants identified the need to improve tourist infrastructure in the region. Land use post mining was also a key issue, with a desire to see mine lands returned to native vegetation and long term grazing. One participant also stressed the importance of ensuring offsets are aligned with broader strategic frameworks.

3.7 Jerrys Plains

Jerrys Plains is a township located in the Hunter Valley, 25 kilometres west of Singleton. Mining is a prominent local land use, with the Wambo, United, Hunter Valley Operations and Mount Thorley Warkworth mines located in the immediate vicinity. Grazing operations are widespread throughout the surrounding area, occurring at a number of properties along the Golden Highway, surrounding areas and the outskirts of Jerrys Plains; with dairying also occurring on the more productive alluvial floodplains of the Hunter River. Irrigated agriculture is also currently being undertaken along the alluvial floodplains of the Hunter River to the north of the Golden Highway.

In regard to other agricultural activities, an olive grove and vineyard are also located south of Jerrys Plains, some of which are on mine owned land. The closest viticulture critical industry cluster (CIC) is located in the Bulga area approximately 5 kilometres south of the Project Area.

An equine CIC is mapped approximately 6 kilometres northwest of the Project Area. The Coolmore horse stud is located to the northwest of Jerrys Plains, approximately 14 kilometres from the Project Area. There are further equine activities undertaken on rural landholdings around Jerrys Plains, including an equine veterinary facility approximately 2 kilometres northwest of the Project Area.

3.7.1 Population

As at the 2011 ABS Census, the population of the town was 370, with a lower proportion of Aboriginal and Torres Strait Islander people compared with the broader Singleton LGA (refer to **Table 3.2**). The population is also slightly older than that of the broader Singleton LGA and NSW with a median age of 44 years versus 35 and 38 years respectively. The 30-34 year age group in particular is poorly represented in Jerrys Plains when compared with state averages (refer to **Figure 3.6**). A summary of key demographic statistics for Jerrys Plains is provided at **Table 3.2**.

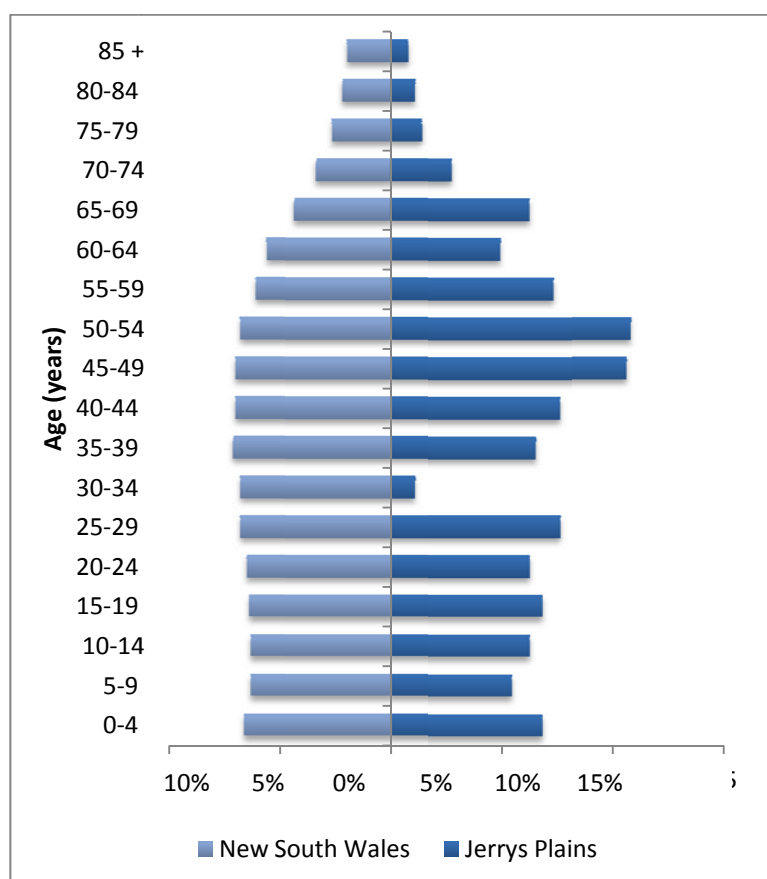


Figure 3.6

Age Profile Comparison Jerrys Plains v. NSW (ABS, 2011)

Table 3.2 Demographic Summary Statistics of Jerrys Plains (2011)

	Jerrys Plains	Singleton LGA	NSW
Population	370	22,694	6,917,658
Family composition (families with children %/ families without children %)	45.7/43.9	49.3/36.1	45.5/36.6
Aboriginal and Torres Strait Islander (%)	2.4	3.7	2.5
Marital status (married %)	54.4	51.5	49.4
Median age	44	35	38
Herfindahl Index (%) ³	7.1	5.8	0.83
Occupied private dwellings	86.5	89.8	90.3

³ The Herfindahl index is used as a measure of industrial diversity, where a larger score represents a less diversified economy and a lower score represents a more diversified economy.

	Jerrys Plains	Singleton LGA	NSW
Tenure – owned (%)	30.3	30.7	33.2
Tenure – mortgage (%)	33.8	39.7	33.4
Tenure – rented (%)	30.8	27.3	30.1
Median weekly rent (\$)	108	260	300
Median monthly mortgage repayment (\$)	1,733	2,000	1,993
Post secondary education (%)	60.2	33.3	37.0
Largest industry	Coal mining	Coal mining	School education
Largest industry of employment (%)	18.7	22.0	4.4
Occupation of employment (%)	Machinery operators and drivers (20.4)	Machinery operators and drivers (18.8)	Professionals (22.7)
Unemployed (%)	1.5	3.3	5.9
Median weekly household income (\$)	1,708	1,692	1,237
Travel to work – one method (largest %)	Car, as driver 67.4	Car, as driver 67.4	Car, as driver 57.6
Volunteering (%)	20.2	19.0	16.9
Different address 5 years ago (%)	36.0	40.1	39.2
Born overseas (%)	10.0	12.9	31.4

3.7.2 Economy

The economy of Jerrys Plains, as with the wider Singleton region, has historically been concentrated on mining and agriculture which is reflected in the higher Herfindahl Index in Jerry's Plains and Singleton – the Herfindahl Index is a measure of industrial diversity (Mason & Howard 2010). During the most recent ABS Census in 2011, the largest industry of employment in Jerrys Plains was coal mining (18.7 per cent) and the largest occupation of employment was machinery operators (20.4 per cent).

Unemployment rates at the time of this Census were very low in comparison to NSW (refer to **Table 3.2**) however, it is likely that the unemployment rate has increased substantially since this time given the unemployment rate in Singleton in 2015 has climbed to 6.4 per cent (3.3 in the 2011 Census) (Department of Employment, 2015).

The cost of living in Jerrys Plains is relatively low compared to the broader Singleton LGA or NSW, while median weekly household income is relatively high. However, income levels may have fallen since 2011, in response to the contraction in mining.

According to Hometrack data reported in 2015, the median price for a house is \$296,990 in Jerrys Plains. Housing prices in Jerrys Plains have fallen by 10.62 per cent in the past 3 years and 6.4 per cent in the last year (refer to **Figure 3.7**).

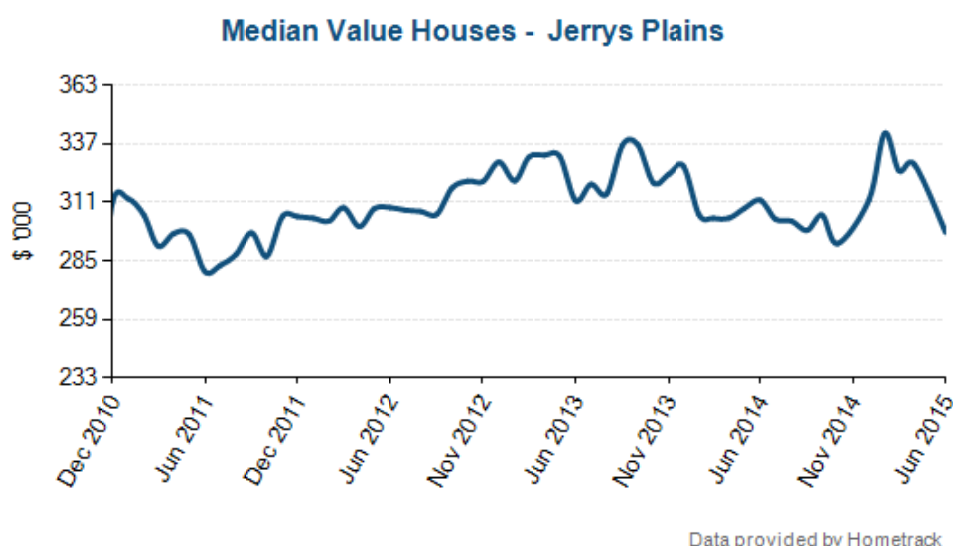


Figure 3.7

Median House Price 2010 - 2015 Jerrys Plains (Hometrack, 2015)

3.7.3 Service Provision, Sense of Community and Community Values

With regards to service provision, the Jerrys Plains Public School provides primary level education with enrolments totalling 36 students in 2016 (NSW Department of Education website). The Public school is the only educational facility in Jerrys Plains. For secondary education, residents of Jerrys Plains must travel to Singleton where there are three secondary schools, two of which are private.

Post-secondary education levels in Jerrys Plains are much higher than the NSW average, with 60.2 per cent having completed post-secondary education, compared to 37 per cent for NSW (ABS Census 2011).

There are no medical services available in Jerrys Plains. However there are a wide range of health/ medical services available within the Singleton LGA (refer to **Section 3.5.4**).

Residents of both Jerrys Plains and the Singleton LGA show similar levels of residential mobility compared to wider NSW, with 36 per cent of Jerrys Plains residents indicating that they lived at a different address to five years ago.

The township of Jerrys Plains is considered less culturally diverse than NSW overall, with only 10 per cent of the total population born overseas, in contrast to 31.4 per cent in NSW.

The proportion of the population participating in volunteering activities in Jerrys Plains and the Singleton LGA are slightly higher than participation levels in NSW broadly, which is indicative of a slightly higher degree of community participation in the region (refer to **Table 3.2**).

3.7.4 Community Perceptions

Current Mining Operations

Landholders in and around, or in proximity to, Jerrys Plains were asked to identify any concerns they had about the existing mining operations, and **Figure 3.8** presents the issues identified. The top five concerns noted were dust, noise, blasting, visual impact and general environmental concerns.

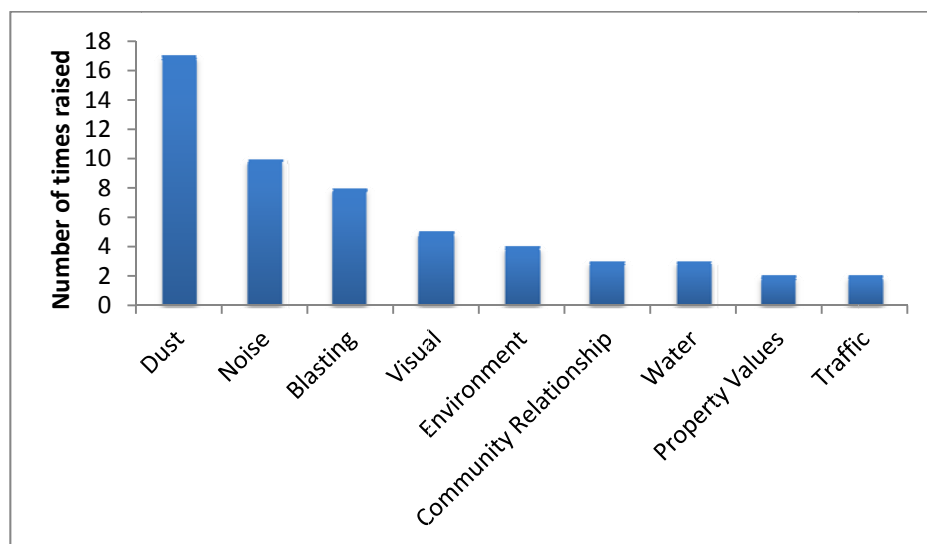


Figure 3.8

Landholder concerns about existing operations

Issues Management

In regard to landholder satisfaction of current impact management by the existing Wambo operations, community feedback indicated that many were dissatisfied with the response from Peabody noting that perceptions of responsiveness had been better in the past:

Things have dwindled and contact has decreased to nothing much at all now [at time of interview].

It is worth noting that these views were collected early in the engagement phase, and that further engagement activities have been undertaken by Glencore since this time.

When asked to detail aspects that Peabody/Glencore had been managing well, the following were noted:

- Noise from truck horns
- Creation of wildlife corridors
- Satisfactory drilling activities, minimising dust and noise impacts
- Rehabilitation practices
- Communication and involvement with local community and businesses
- Increased watering at site for dust suppression

- Blasting and noise reduction
- Land management of tenanted leased properties.

When asked about areas of improvement there was overlap with the above aspects that were perceived by some to have been managed well. This is reflective of the range of views that were collected. Areas for improvement, as raised by some, include:

- Greater communication and involvement with local community and businesses
- Increased watering at site (decreased dust)
- Blasting and noise reduction
- Preparation and forward planning e.g. planting of trees and placement of screens
- Land management of tenanted leased properties.

Potential Project Issues

Landholders were also asked to discuss their concerns about the Project specifically, and once again dust and noise were the top two concerns noted. However, additional concerns included the impact on sense of community, property values and future uncertainty in relation to mining activities was also raised, as per **Figure 3.9**.

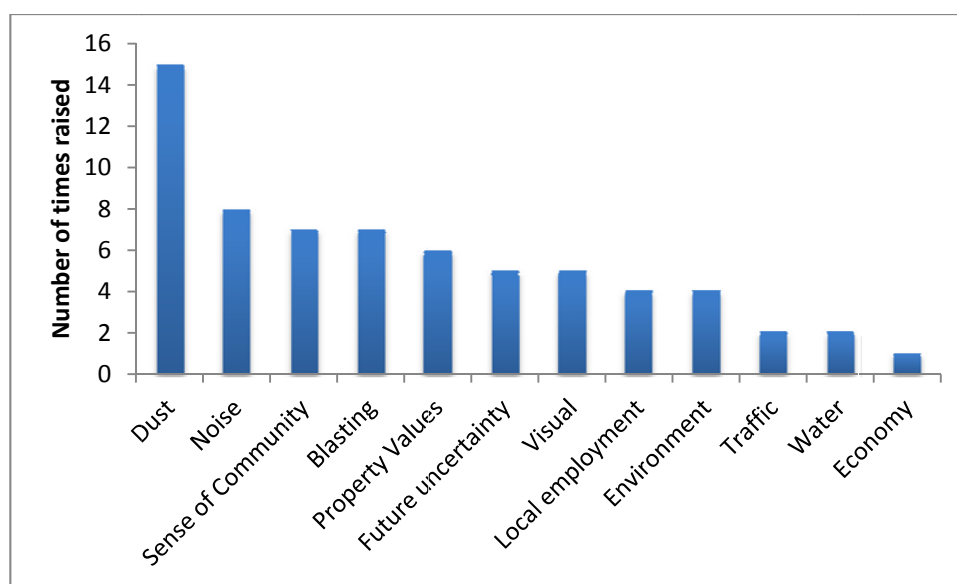


Figure 3.9

Landholder concerns about the Project

In terms of awareness, all landholders except for two had heard of the Project prior to the discussion.

With regard to specific concerns about the Project, a variety of responses relating to land use and management were also captured, reflecting differences in current land use amongst landholders. The most commonly noted concerns included:

- weed control (4)
- difficulty in controlling feral animals and kangaroos in mine areas (3)
- noise leading to stressed domestic animals (2)
- air quality (2)
- dust (2).

Other concerns included access to mine land for exercising horses, protecting native species in mine sites, groundwater salinity, water quality, changes in rain patterns, fencing, and impact on livelihood e.g. difficulties in leasing rental properties.

A further issue identified at the community information night, held in Jerrys Plains in June 2015, was local employment in relation to the Project. This concern may have been influenced by the perception that contracting work opportunities in the mining sector in the Hunter Valley in recent years have not been awarded to local contractors and businesses, but to those living outside local communities.

The Project will require up to approximately 500 positions at peak production, new positions will become available as the Project develops and production increases, recruitment for these positions will be advertised and managed as per the Glencore Recruitment Policy, with opportunities for maximising local employment to be incorporated into the Project recruitment strategy.

Costs and Benefits of Mining

Landholders were also asked to discuss the perceived benefits and costs of mining in the area, and **Figure 3.9** summarises these responses. Though fewer benefits were noted overall, there was greater consensus on the perceived benefits of mining compared with the perceived costs, which was demonstrated by the total number of responses received in each category. For example, the perceived benefits of employment (20), economic benefit (11) and sponsorship and contributions (9), were all noted more consistently when compared to the top three costs of mining, namely dust (8), impact on agriculture (5) and price of goods and services (4). However, a greater number of perceived costs were identified overall. The responses received are likely to be influenced by the current economic climate in the region.

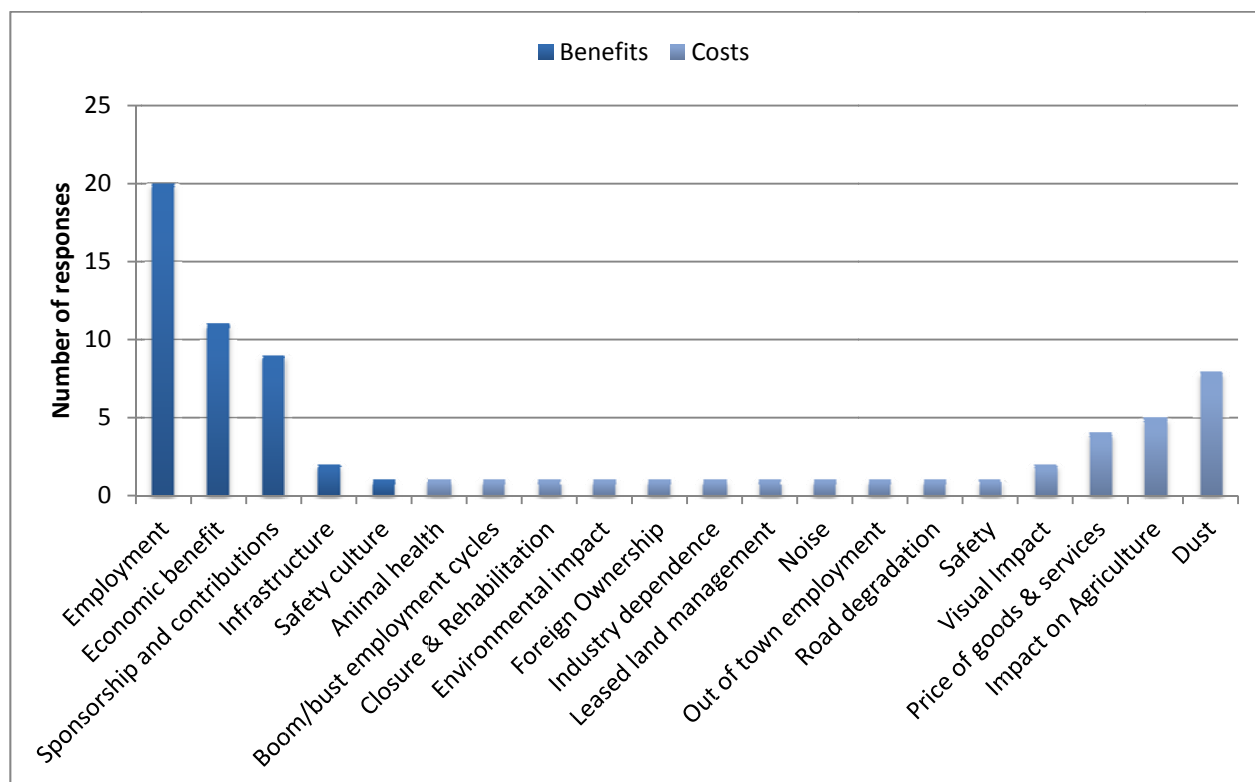


Figure 3.10

Perceived Benefits and Costs of mining

In addition, landholders were asked whether they felt the disadvantages of mining outweighed the advantages, with a slight majority disagreeing with this statement (11 compared to 8 landholders). Three landholders said they were unsure. It should be noted that not all landholders answered this question.

Post Mining Land Use

Discussions with landholders also identified resident thoughts on how land should be used post mining, if approved; with the majority identifying grazing and pasture lands as the preferred post mining land use. A few landholders also noted that the original landform should be reinstated. A summary of responses obtained is detailed in **Figure 3.11**.

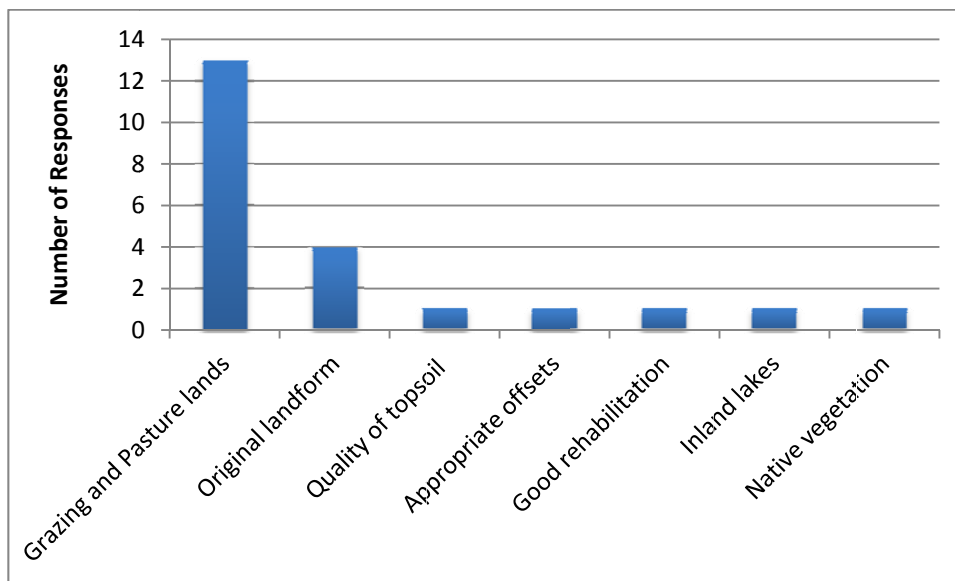


Figure 3.11

Preferred land use upon Project completion

Previous engagement with Mining Companies

Prior contact with United and Wambo among landholders from Jerrys Plains was relatively high, with most having had some form of direct contact in the past. Specifically, four landholders had lodged formal complaints, including one landholder who had lodged two complaints.

I only complain when the blasts are bad.

Social licence to operate

Landholders were asked about their understanding of the term 'social licence to operate', and importantly, the majority were not familiar with this term. For others, social licence was described in the following ways:

Aware of environmental impact. Transparency. Communication with everyone.

Being honest and neighbourly.

Obligations to affected residents / people.

It is worth noting that there was some cynicism about this term:

No chance of this locally- [we have been] burnt by history.

Sense of community

Landholders were asked to describe some of strengths and assets of the Jerrys Plains community. Responses included:

- History, including agricultural history: *"Jerrys always grows the best lucerne"*
- Scenery / natural environment

- Relaxed lifestyle
- The school
- Community minded.

Opportunities for Community Development

Finally, landholders from Jerrys Plains were asked to identify some of the key needs for the community and opportunities for assistance from Glencore /Peabody using a Voluntary Planning Agreement (VPA). The response level indicated that there are perceived to be many opportunities to provide support at the local community level. Responses are summarised in the following table.

Table 3.3 Summary of opportunities for community development as raised by landholders– Jerrys Plains

Public transport infrastructure	• Bus for school excursions to Singleton • Transport for the elderly (e.g. to/from singleton to fill prescriptions etc).
Youth services	• Junior sports e.g. karate • School programs (esp. Development of programs to fit with school curriculum, have students on site or presentations in class).
Improving public spaces	• Funding for shade, seating and water bubbler near play equipment at hall grounds • Funding for a swimming pool and skate park • Funding for playground equipment e.g. water park, jumping pillows, flying fox • Development of a coffee shop/general store, with occasional nurse attendance (change dressings, see babies etc) • Beautification of town and main street, including visual landscaping, planting of trees etc.
Community service infrastructure	• Running community courses e.g. first aid, fire safety • Post Office • Weather station – used to run but now does not • Medical centre including, mental health and substance abuse • Put Jerrys Plains on the sewer line.
Miscellaneous	• Grade Redmanvale Road and access to some properties • Fire break along fire trail at end of Redmanvale Rd • Access to mine owned land for horse riding • Regular community BBQs • Beautified entrance to mine site – face to the community
Additional suggestions	• Defibrillator in service station • Town signage.

3.8 Warkworth

Warkworth is a small community in the Hunter Valley located 15 kilometres west of Singleton, and approximately 1 kilometre to the south east of the Project Area. According to the 2011 ABS Census, the population at this time was 181, noting that the SA1 boundary covers a larger region than the Warkworth locality as in **Figure 3.1**. There were 14 occupied residences in Warkworth at the time of report writing.

Analysis of available *Australian Census of Population and Housing* data indicates that the township has been in decline in recent years and there has been a reduction in the number of owner occupied houses. Note that there were significant boundary changes for the SA1 level data for Warkworth between 2006 and 2011. As such, while longitudinal analysis may provide indicative trends, care should be taken when interpreting these results. Additional care should also be taken in interpretation of these statistics, as the boundaries for the locality of Warkworth extend beyond the immediate locality near the Warkworth church and hall, and include the wider rural area toward Mount Thorley.

In relation to population change, the following aspects are noted:

- The population of Warkworth has declined from 551 people in 2006 to 181 people in 2011. This is of particular significance when comparing the 2001 population for Warkworth, which was 458 people, indicating little population change between the 2001-2006 time periods. Consultations conducted with community members by United and Umwelt as part of the assessment, however suggest that further decline has occurred since 2011.
- The number of owner occupied dwellings also fell through this period across the SA1 for Warkworth, from 67.6 per cent in 2006 to 46.2 per cent in 2011. The percentage of rented properties increased from 20.7 per cent in 2006 to 42.9 per cent in 2011. As discussed below, there is presently only one privately owned residence in Warkworth village.
- There has been an increase in the number of people working in the coal mining industry from 12.9 per cent in 2006 to 20.4 per cent in 2011. It should be noted that the actual number of people from Warkworth working in the coal industry has declined over this time due to the reduction in the total population.
- The proximity of Hunter Valley Operations, Mount Thorley Warkworth and Wambo mines has meant the progressive purchase of properties within Warkworth over the years, resulting in few private landholdings remaining. For example, there are 14 residences in Warkworth township and only one of these is privately owned. One interviewee noted in relation to the locality that *"There's no village left there really."*

The locality of Warkworth is currently impacted by surrounding mining operations, including Wambo, Hunter Valley Operations and Mount Thorley Warkworth. These impacts may potentially increase due to development at these operations outside of the Project. It is noted in the air quality assessment for the Mount Thorley and Warkworth Continuation Projects that 'prevailing winds would transport material along the mine pit and project dust northwards [towards Warkworth]. As the mine progresses westwards the impacts the impacts to the north of the mine move closer to Warkworth'; and that cumulative noise levels would exceed the night time criterion at a representative receiver within Warkworth (who is currently afforded acquisition rights). Whilst the air quality and noise impact studies identified impacts on the locality of Warkworth, limited consideration of social impacts was provided to assist with understanding the existing social impacts on this locality.

3.8.1 Service Provision, Sense of Community and Community Values

There are no health/medical services available in Warkworth with residents travelling to Singleton to access health and medical services. There are also no educational facilities within Warkworth, with residents required to travel to schools in Singleton (primary and secondary) or Jerrys Plains (primary school). The school in Warkworth was closed in 1998, and is now used as a residence.

The level of non-school education in Warkworth and Singleton LGA is lower than for NSW with 27 per cent of the population attaining a non school qualification versus 37 per cent for NSW. For those that are studying, there is a higher concentration involved in courses in engineering and related technologies in both Warkworth and Singleton compared to NSW, in which the largest field of study is management and commerce (refer to **Table 3.4**). This is likely to be related to the high proportion of those employed in mining and related industries.

Levels of volunteerism in Warkworth are low, as are levels of multicultural diversity (refer to **Table 3.4**).

There are few community facilities available in Warkworth: St Philip's Anglican Church holds services on the first and third Sunday of each month, and there are irregular events held at the Warkworth Community Hall. A notable event is the annual carols service held at the Hall.

Jim Johnstone Park is a well maintained sports oval with play equipment and recently updated amenities. It is used as a stopping point for RVs and other travellers along the Golden Highway, and is anecdotally used as a place where workers from the nearby Wambo mine go for a "smoko" as no smoking is permitted on mine property.

The privately operated Hunter Valley Gliding Club and the Singleton Clay Target Club are also located to the north of Warkworth.

3.8.2 Population

The median age of residents of Warkworth is 35 years (refer to **Figure 3.12**). Similar to Jerrys Plains, the proportion of Aboriginal and Torres Strait Islander people, within Warkworth, is less than for the broader Singleton LGA (refer to **Table 3.4**).

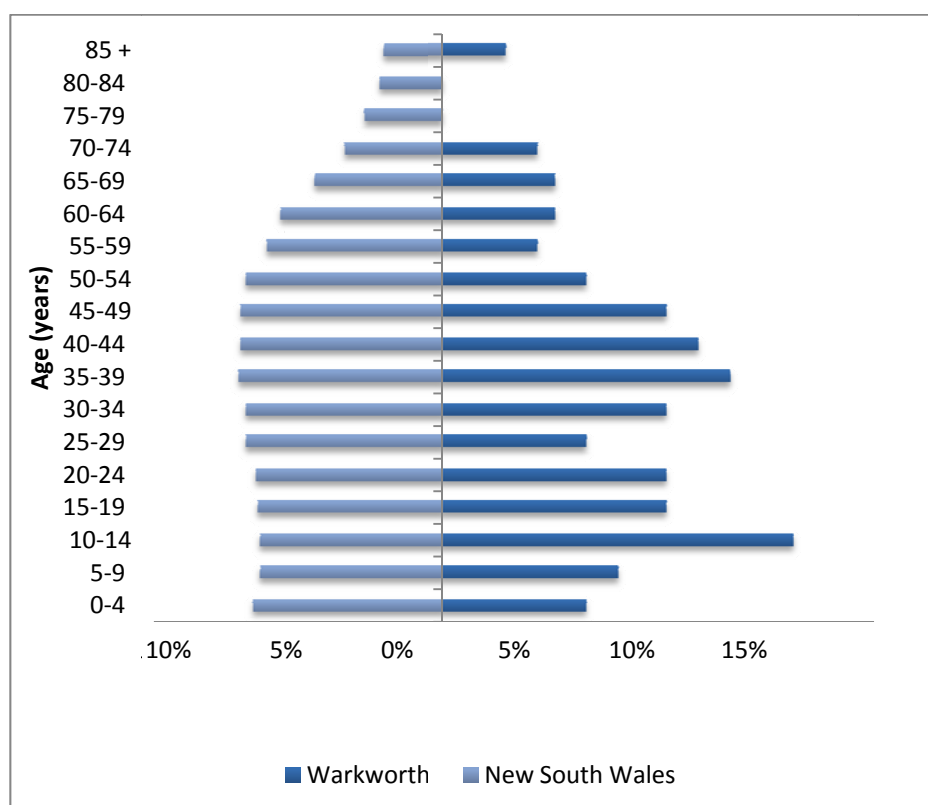


Figure 3.12

Age Profile Comparison Warkworth v. NSW (ABS, 2011)

A summary of key demographic statistics for Warkworth is provided in **Table 3.4**.

Table 3.4 Demographic Summary Statistics of Warkworth (2011)

	Warkworth	Singleton LGA	NSW
Population	181	22,694	6,917,658
Family composition (families with children %/ families without children %)	60.4/39.6	49.3/36.1	45.5/36.6
Aboriginal and Torres Strait Islander (%)	2.2	3.7	2.5
Marital status (married %)	51.7	51.5	49.4
Median age (years)	35	35	38
Herfindahl Index (%)	8.6	5.8	0.83
Occupied private dwellings	93.9	89.8	90.3
Tenure – owned (%)	28.6	30.7	33.2
Tenure – mortgage (%)	17.5	39.7	33.4

	Warkworth	Singleton LGA	NSW
Tenure – rented (%)	42.9	27.3	30.1
Median weekly rent (\$)	200	260	300
Median monthly mortgage repayment (\$)	3,527	2,000	1,993
Attained non-school qualification (%)	27.1	33.3	37.0
Field of study (largest) (%)	Engineering and related technologies (38.9%)	Engineering and related technologies (37.5%)	Management and commerce (24.6%)
Largest industry	Coal mining	Coal mining	School education
Largest industry of employment (%)	20.4	22.0	4.4
Occupation of employment (%)	Machinery operators and drivers (28.6%)	Machinery operators and drivers (18.8%)	Professionals (22.7%)
Unemployed (%)	4.1	3.3	5.9
Median weekly household income (\$)	1,458	1,692	1,237
Travel to work – one method (largest %)	Car, as driver 52.5	Car, as driver 67.4	Car, as driver 57.6
Volunteering (%)	12.8	19.0	16.9
Different address 5 years ago (%)	33.5	40.1	39.2
Born overseas (%)	0	12.9	31.4

3.8.3 Economy

During the most recent Census in 2011, the largest industry of employment in Warkworth was coal mining (20.4 per cent) with the largest occupational group being machinery operators (28.6 per cent) (refer to **Table 3.4**).

Living costs are higher in Warkworth when compared with the broader Singleton LGA and the state. At \$3,527, the median monthly mortgage repayment is approximately one and half times greater than in Singleton (\$2,000) and NSW (\$1,993). This may be due to the boundaries of the SA4 extending beyond the township itself and mortgages may be for rural properties rather than urban houses. Analysis of land ownership data indicates that there are currently no privately mortgaged lands within the Warkworth village. Again reflecting the high level of employment in the mining sector, median weekly household income levels as at the 2011 Census, are higher in Warkworth compared to NSW, although are lower than the average levels across the LGA.

3.8.4 Community Perceptions

Landholders expressed satisfaction with all interactions with Wambo to date. Residents now living in other localities who were interviewed also had long histories within the Warkworth area. For example, some previous residents of Warkworth, now living in Jerrys Plains, referred to their property as 'Warkworth Heights' as a comment on the parochial nature of the residents in the locality; and other interviewees noted that there are people who now live elsewhere across the Hunter Valley who still have strong connections to Warkworth, even though they do not live there or visit regularly.

Landholders contacted in Warkworth were aware of the Project, and some concerns included fire management, feral animal control and weeds (particularly prickly pear and tiger pear).

The landholders noted that there is not much of a sense of community in Warkworth any longer, as many of the landholders have left and it is now mostly a transient population. They also commented on the ongoing importance of the church and hall committees in the village and the role they play in maintaining the historic and remaining sense of community.

In terms of opportunities for Glencore/Peabody to assist with local community needs, the hall, the church in Warkworth and the Scouts / Cubs in Bulga were identified.

3.9 Maison Dieu

Maison Dieu is a small community on the boundary of the Singleton township, approximately 4 kilometres away from the Project Area.

3.9.1 Population

In 2011, Maison Dieu had a population of 162. The proportion of Aboriginal and Torres Strait Islander people was lower than in NSW and Singleton LGA. The median age of the population is 37 years with very low numbers of residents in the over 70 year age bracket, when compared to Jerrys Plains and broader NSW (refer to **Figure 3.13**).

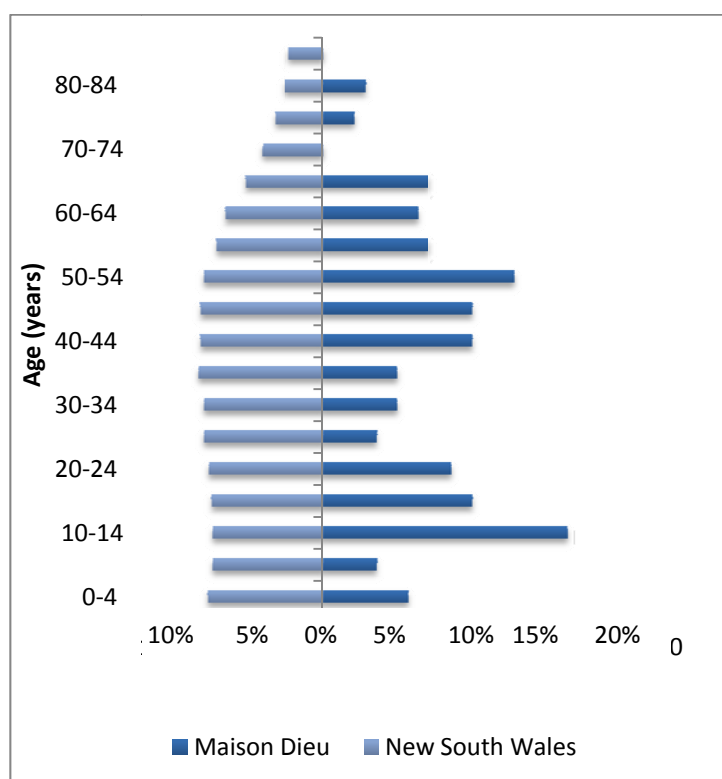


Figure 3.13

Age Profile Maison Dieu v. NSW (ABS, 2011)

A summary of key demographic statistics for Maison Dieu is provided at **Table 3.5**.

Table 3.5 Demographic Summary Statistics of Maison Dieu (2011)

	Maison Dieu	Singleton LGA	NSW
Population	162	22,694	6,917,658
Family composition (families with children %/ families without children %)	51.1/31.3	49.3/36.1	45.5/36.6
Aboriginal and Torres Strait Islander (%)	1.8	3.7	2.5
Marital status (married %)	62.9	51.5	49.4
Median age (years)	37	35	38
Herfindahl Index (%)	9.8	5.8	0.83
Occupied private dwellings	92.7	89.8	90.3
Tenure – owned (%)	44.2	30.7	33.2
Tenure – mortgaged (%)	25	39.7	33.4

	Maison Dieu	Singleton LGA	NSW
Tenure – rented (%)	30.8	27.3	30.1
Median weekly rent (\$)	240	260	300
Median monthly mortgage repayment (\$)	542	2,000	1,993
Attained non-school qualification (%)	31.5	33.3	37.0
Field of study (largest) (%)	Engineering and related technologies 38.2	Engineering and related technologies (37.5%)	Management and commerce (24.6%)
Largest industry	Coal mining	Coal mining	School education
Largest industry of employment (%)	20.0	22.0	4.4
Occupation of employment (%)	Managers 28.6	Machinery operators and drivers (18.8%)	Professionals (22.7%)
Unemployed (%)	3.8	3.3	5.9
Median weekly household income (\$)	1,583	1,692	1,237
Travel to work – one method (largest %)	Car, as driver 63.6	Car, as driver 67.4	Car, as driver 57.6
Volunteering (%)	27.5	19.0	16.9
Different address 5 years ago (%)	29.4	40.1	39.2
Born overseas (%)	3.6	12.9	31.4

3.9.2 Economy

The economy of Maison Dieu and the wider Singleton region has historically been based on mining and agriculture and there is less industrial diversity in the Maison Dieu SA1 region when compared with Singleton LGA and NSW, which is evident in the resulting high Herfindahl Index (9.8 per cent vs. 0.83 for NSW). Note that the Maison Dieu SA1 region does not include the Maison Dieu industrial area.

During the most recent Census in 2011, the largest industry of employment in Maison Dieu was coal mining (20.0 per cent) however in contrast with Singleton and other comparable small townships in the area, the largest occupation of employment was management roles (28.6 per cent) rather than machinery operators (refer to **Table 3.5**).

The cost of living in Maison Dieu is comparatively low when compared to the state, with high levels of income and low levels of accommodation costs. This trend is reflected in the wider Singleton area where rent and mortgage payments account for more than 30 per cent of income for approximately half the number of households, than in NSW. The median monthly mortgage repayment is only \$542; far lower than \$1993 per month for NSW or \$2000 per month for Singleton. The median weekly household income is also higher in Maison Dieu than in NSW. Housing prices are also low with the median price falling by 10.6 per cent between 2012 and 2015 (refer to **Figure 3.14**).

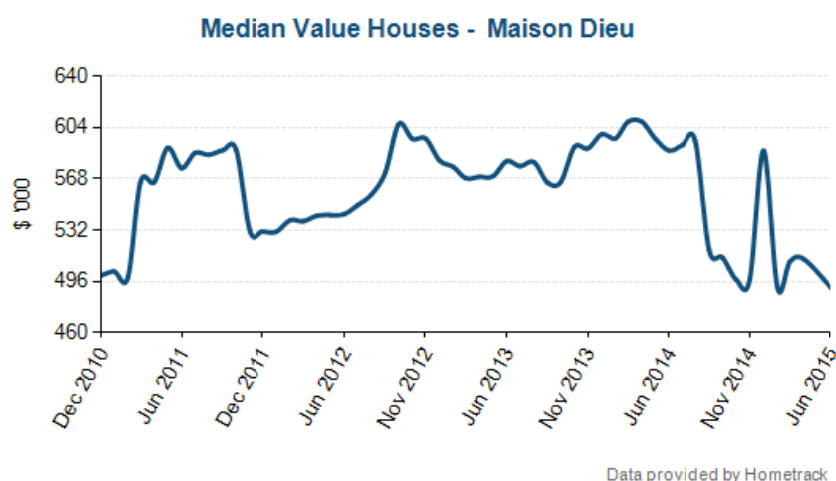


Figure 3.14

Median House Price over Time Maison Dieu (Hometrack, 2015)

3.9.3 Service Provision, Sense of Community and Community Values

There are no health/ medical or education services available in Maison Dieu with residents travelling to Singleton to access these services. Given the proximity of Maison Dieu to Singleton it is not unexpected that the level of non-school education is very similar. As is the case in Singleton, there is also a high concentration of those educated in the fields of engineering and related technologies in Maison Dieu (refer to **Table 3.5**).

Maison Dieu, as with other localities in the area, is considered less multicultural than NSW overall with only 3.6 per cent of the total population born overseas. People do not appear to move in and out of the area very frequently with only 29.4 per cent having lived at a different address five years ago (refer to **Table 3.6**).

Levels of volunteering in the community are reasonably high when compared to the state and broader Singleton, with those aged between 65 and 74 years the most active group; 50 per cent of that age category reportedly having volunteered in the last 12 months.

Table 3.6 Social Summary Statistics Maison Dieu

	Maison Dieu	Singleton	NSW
Volunteered in the last 12 months (%)	27.5	19.0	16.9
Different address 5 years ago (%)	29.4	40.1	39.2
Born overseas (%)	3.6	12.9	31.4

3.9.4 Community Perceptions

Lights and dust were considered the key issues with regard to existing operations, and while most were satisfied with how issues had been addressed in the past, one landholder felt that there was 'room for improvement' as dust levels were perceived to continually be high.

When asked about areas of improvement, two landholders nominated noise management and monitoring, one landholder noted 'working to weather conditions', and the other noted dust management.

Three of the landholders from Maison Dieu were aware of the Project, and there were no concerns about the impact on personal land use.

Three out of five of the landholders felt that the disadvantages of mining outweighed the advantages, with the following reasons provided:

- Concern about inflation impacting prices on consumer goods and services, noting that a supermarket in Singleton has the reputation for being the most expensive in NSW
- Concern about loss of agricultural land
- Concern about over-mining
- Concern that too few locals are being employed.

When asked about the idea of 'Social Licence to operate' there was a mixed response as follows:

- Two landholders had not heard of the term, though one assumed that it related to 'neighbourliness'
- Another landholder felt that it meant to *"deal fairly with employees, neighbours, community, everyone"*
- The other landholder felt that the term was meaningless as environmental compliance measures mean that mines are required to behave more ethically.

In terms of community strengths, a rural lifestyle, community spirit and cohesion were noted.

A number of local opportunities were identified where Glencore/Peabody VPA contributions could be of assistance, including creation of an emergency 'back-up' water supply and refurbishment of Maison Dieu Hall (although it is worth noting that another landholder felt that it was 'not worth fixing').

3.10 Bulga & South Wambo

Bulga is a small community in the Upper Hunter, approximately 20 kilometres southwest of Singleton against the escarpment of the Wollemi National Park. It is located 7 kilometres from the project site. This village, located on the banks of Wollombi Brook, was originally named “The Bulga” but was later abbreviated to Bulga, being an aboriginal word meaning ‘big mountain’. The village of Bulga comprises 152 homes and approximately 350 residents. The village is the hub for surrounding agricultural and rural residential holdings, including landholders to the north in the area between the Bulga Village and Wambo, referred to as South Wambo.

In addition to the residential areas, Bulga is also the regional headquarters for the Rural Fire Service and is the home of the Hunter Valley RFS Helicopter base and the National Parks and Wildlife Service office. The town has a police station, historic scout hall (the old school), a historic church, recreational grounds with tennis courts, a hotel, a service station and bottle store, community hall, orchards and olive groves, vineyards and a horse stud (Bulga Milbrodale Progress Association, 2016).

3.10.1 Population

In 2011, the town had a population of 358 with the proportion of Aboriginal and Torres Strait Islander people in the town being substantially higher than in NSW, Singleton LGA and across other neighbouring communities. It also had a slightly higher median age than in NSW, 41 versus 38 years respectively (refer to **Figure 3.15**).

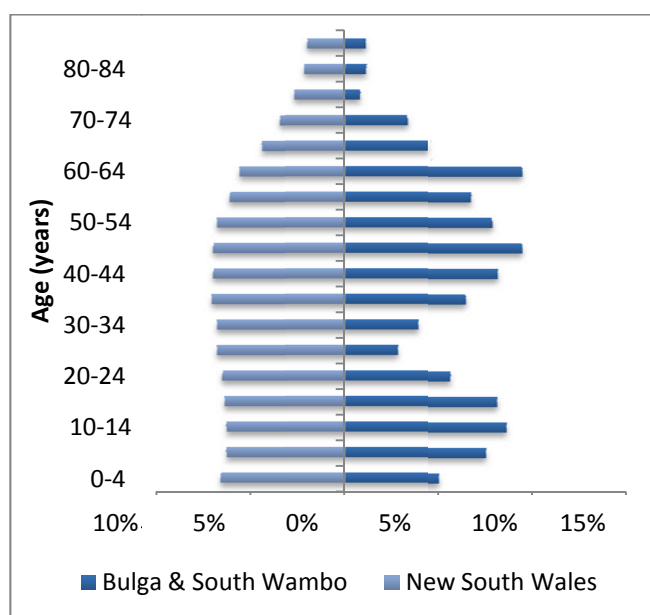


Figure 3.15

Age Profile Bulga & South Wambo v. NSW (ABS, 2011)

A summary of key demographic statistics for Bulga and South Wambo is provided in **Table 3.7**.

Table 3.7 Demographic Summary Statistics of Bulga & South Wambo (2011)

	Bulga & South Wambo	Singleton LGA	NSW
Population	358	22,694	6,917,658
Family composition (families with children %/ families without children %)	44.3/43.4	49.3/36.1	45.5/36.6
Aboriginal and Torres Strait Islander (%)	8.3	3.7	2.5
Marital status (married %)	61.5	51.5	49.4
Median age (years)	41	35	38
Herfindahl Index (%)	9.7	5.8	0.83
Occupied private dwellings	76.2	89.8	90.3
Tenure – owned (%)	31.2	30.7	33.2
Tenure – mortgage (%)	46.4	39.7	33.4
Tenure – rented (%)	22.3	27.3	30.1
Median weekly rent (\$)	200	260	300
Median monthly mortgage repayment (\$)	2,200	2,000	1,993
Attained non-school qualification (%)	31.0	33.3	37.0
Field of study (largest) (%)	Engineering and related technologies (32.3%)	Engineering and related technologies (37.5%)	Management and commerce (24.6%)
Largest industry	Coal mining	Coal mining	School education
Largest industry of employment (%)	21.1	22.0	4.4
Occupation of employment (%)	Machinery operators and drivers (19.7%)	Machinery operators and drivers (18.8%)	Professionals (22.7%)
Unemployed (%)	4.3	3.3	5.9

	Bulga & South Wambo	Singleton LGA	NSW
Median weekly household income (\$)	1,852	1,692	1,237
Travel to work – one method (largest %)	Car, as driver 70.5	Car, as driver 67.4	Car, as driver 57.6
Volunteering (%)	23.5	19.0	16.9
Different address 5 years ago (%)	25.4	40.1	39.2
Born overseas (%)	10.1	12.9	31.4

3.10.2 Economy

The economy of Bulga and the wider Singleton region has historically been based on mining and there is less industrial diversity when compared with the Singleton LGA and NSW, with Bulga having a Herfindahl Index of 9.7 per cent. The largest industry of employment in Bulga, at the last Census, was coal mining (21.1 per cent) (refer to **Table 3.7**).

The cost of living in Bulga is on balance to that across NSW, however median weekly household incomes and monthly mortgage repayments are higher in Bulga. The median price for a house in Bulga has fallen by 10.62 per cent over the past three years and was approximately \$456,812 in 2015 (refer to **Figure 3.16**).

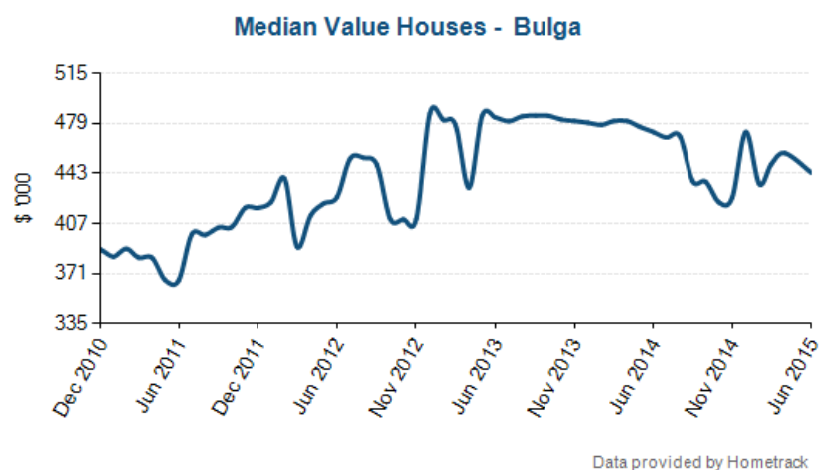


Figure 3.16

Median House Price over Time Bulga (Hometrack, 2015)

3.10.3 Service Provision, Sense of Community and Community Values

There are no health or medical services available in Bulga with residents travelling to Singleton to access these services. There are public primary schools located in Broke and Milbrodale.

Levels of non-school education in Bulga are very similar to those at Singleton as is the concentration of participation in engineering and related technology courses.

There were few people who reported to have been born overseas and few who had moved home in the last five years. However levels of volunteerism are higher when compared to the Singleton LGA and the state (refer to **Table 3.7**).

3.10.4 Community Perceptions

Three landholders were interviewed from Bulga, and the following feedback was gathered:

- All landholders were eager to see further reductions in dust and noise levels at existing operations.
- All were aware of the Project.
- One landholder was concerned about the rising number of feral animals (pigs) on their property.
- The advantages of mining were generally felt to outweigh the disadvantages.

In terms of opportunities for Glencore/Peabody to assist with the local community through its VPA contributions, youth services and providing employees time off to participate in voluntary services in the community, or otherwise encourage wider community participation, were identified.

Of particular relevance to the Bulga area is the Bulga Milbrodale Progress Association (BMPA), an organisation that has had a longstanding opposition to the Mt Thorley Warkworth mine, and continues to do so, noting the Mt Thorley Warkworth Project was approved in 2015.

3.11 Regional Community Issues

A review of local media has been undertaken to further identify, analyse and validate details regarding stakeholder perceptions and values over the period from 2012 to 2015, and this has been included as **Appendix B**. The review focused on regional media, including the Singleton Argus and the Newcastle Herald, along with more state based and national sources including AAP, ABC News, Sydney Morning Herald and the Daily Telegraph. Online specialist publications, such as Australian Mining and The Land, were also reviewed.

Analysis indicates an existing concern in the community on the impacts associated with the mining industry in the Hunter - especially with regards to its long term environmental and aesthetic impacts and impacts on industry sustainability. Commonly noted concerns included the flow of profits away from local communities, impacts of noise, dust, visual impact, increased traffic as a result of mining activities and the impact of mining on alternative industries, especially agriculture and the equine industry.

Recent media has also focused on the positive contributions of mining against a backdrop of the coal industry downturn, with noted contributions of mining primarily in the form of jobs and economic activity. There appears to be widespread concern from community members about the economic sustainability of small communities and townships in the Upper Hunter without the participation and support of the coal industry.

Key regional issues and opportunities emerging from the analysis include:

- Responding to the continued downturn in mining and ongoing mining related job losses in the Upper Hunter
- Addressing community sustainability and protecting core community values
- Ensuring employment and training opportunities for local people
- Fostering biodiversity, protecting the environment and natural capital of the area
- Balancing the long-term impacts to agriculture and benefits of mining in the region
- Enhancing infrastructure to meet increased demand (e.g. roads).

4.0 Workforce Profile

A Town Resource Cluster (TRC) analysis was undertaken to understand the social and economic linkages between the Wambo and United workforces and the broader community. The full TRC report including methodology and results is included as **Appendix A** to this report with findings from the report summarised below.

Findings from the TRC show strong socio-economic linkages between Wambo, United and a number of communities, particularly those towns and regional centres in closest proximity to the company's operations; Singleton, Maitland, Cessnock and Newcastle, which receive substantial economic benefit from the operations. Similarly, social impacts, as measured through community participation and social infrastructure use were also substantial, and again were focused on the communities closest to the operations.

In summary, the results of the survey indicate that the existing Wambo and United workforce:

- are most likely to reside in Singleton (24 per cent), Maitland (23 per cent), Cessnock (13 per cent), and Newcastle (11 per cent) (refer to **Figure 4.1**)
- directly contribute approximately \$13.26 million to various local, regional and state economies, with expenditure greatest in Singleton (\$3.5 million) followed by Maitland (\$2.8 million) and Newcastle (\$2.3 million) (refer to **Figure 4.2**)
- have an average length of employment at Wambo / United of 5.29 years, and an average length of time living in their current residential location totalling just over 18 years
- the majority of the sample are married (73 per cent) and there is also a high degree of home ownership (79 per cent)
- have a household member that participates in a community related group or activity (58 per cent of households), with the most common activities relating to sport and recreation, particularly team based sports (refer to **Figure 4.3**)
- generally use health infrastructure in the communities close by to where they reside; with the highest levels of overall participation in Singleton, followed by Maitland and Cessnock. Use of education facilities was also in similar locations, with Maitland and Singleton having the highest overall participation levels, followed by Newcastle and Cessnock (refer to **Figure 4.4** and **Figure 4.5**).

In relation to suppliers, survey data indicates: a relatively high level of reliance on Wambo (on average, just over one fifth of respective business income for those participating in the survey). Almost two-thirds of the suppliers surveyed indicated adequate capacity, and a desire to take on additional work with United and Wambo.

Overall, suppliers to United and Wambo are estimated to contribute approximately \$211 million within the Hunter Valley region, and an additional \$105 million to the broader economy. Of this total \$316 million, approximately \$66 million is attributed to services provided to United and Wambo specifically.

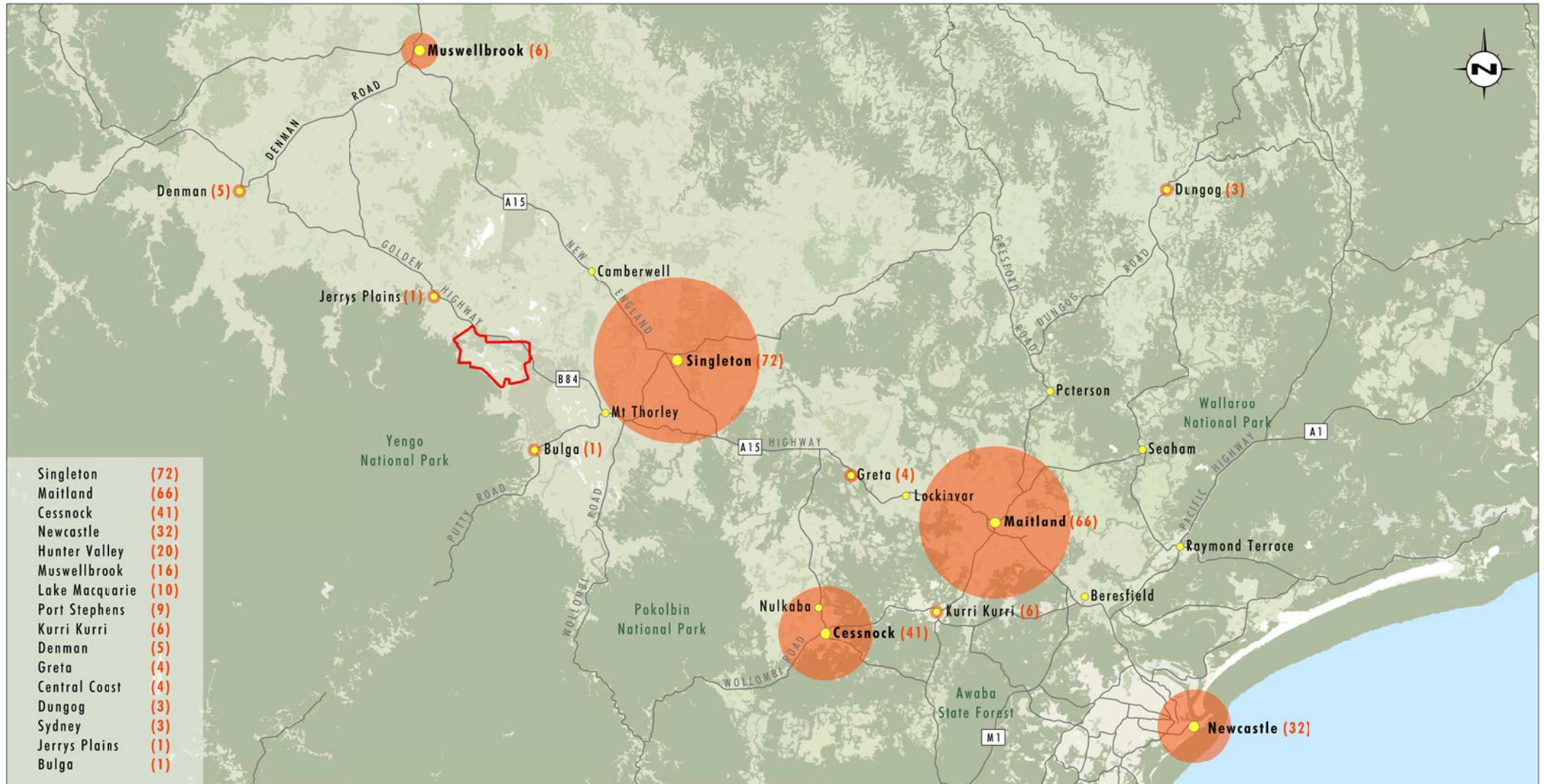


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km
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FIGURE 4.1

Employee Town of Residence

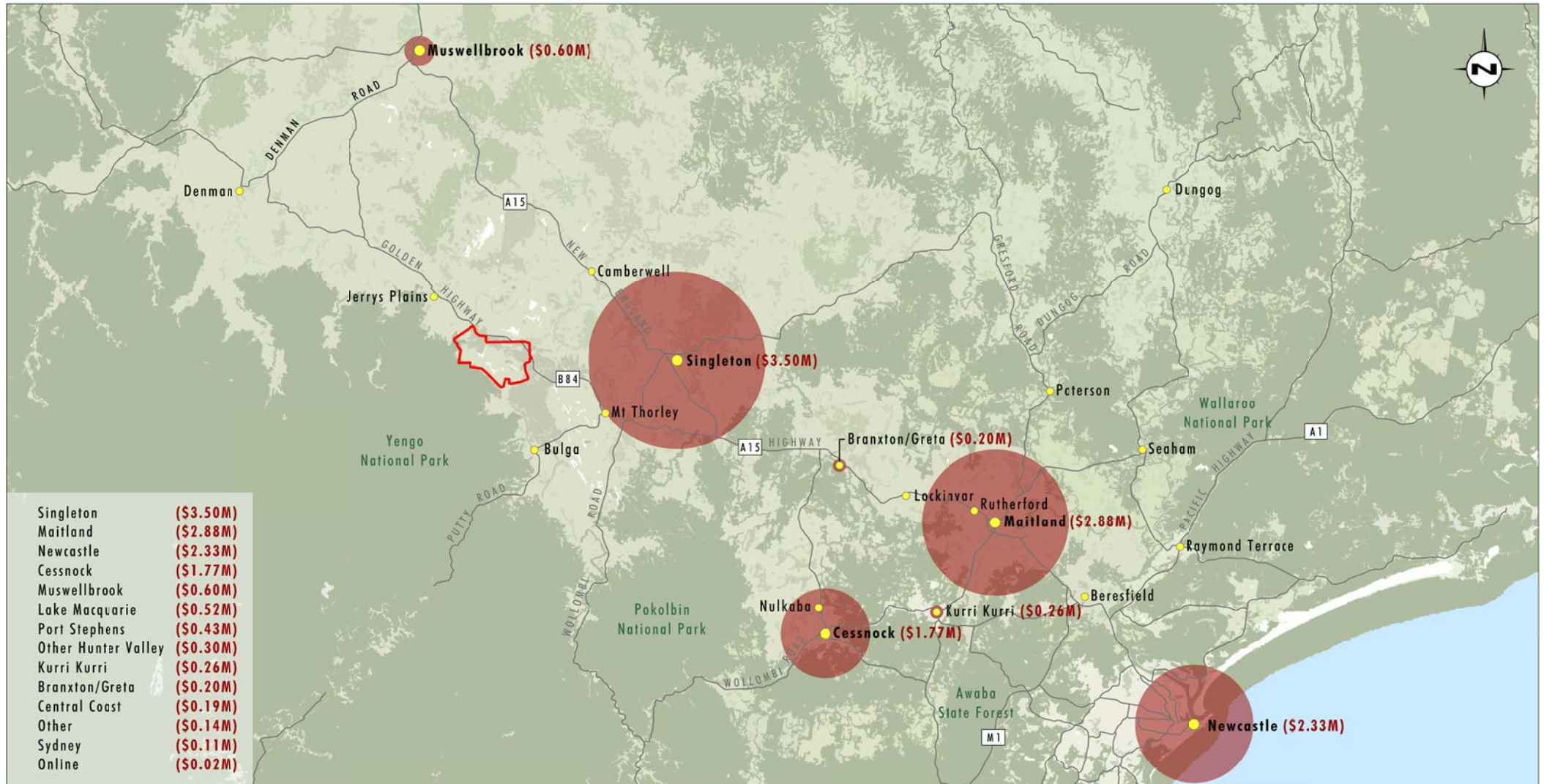


Image Source: Google Earth (2015)
Data Source: United (2015)

Legend

- Project
- Total Employee Household Expenditure

FIGURE 4.2
Employee Household Expenditure - \$Million

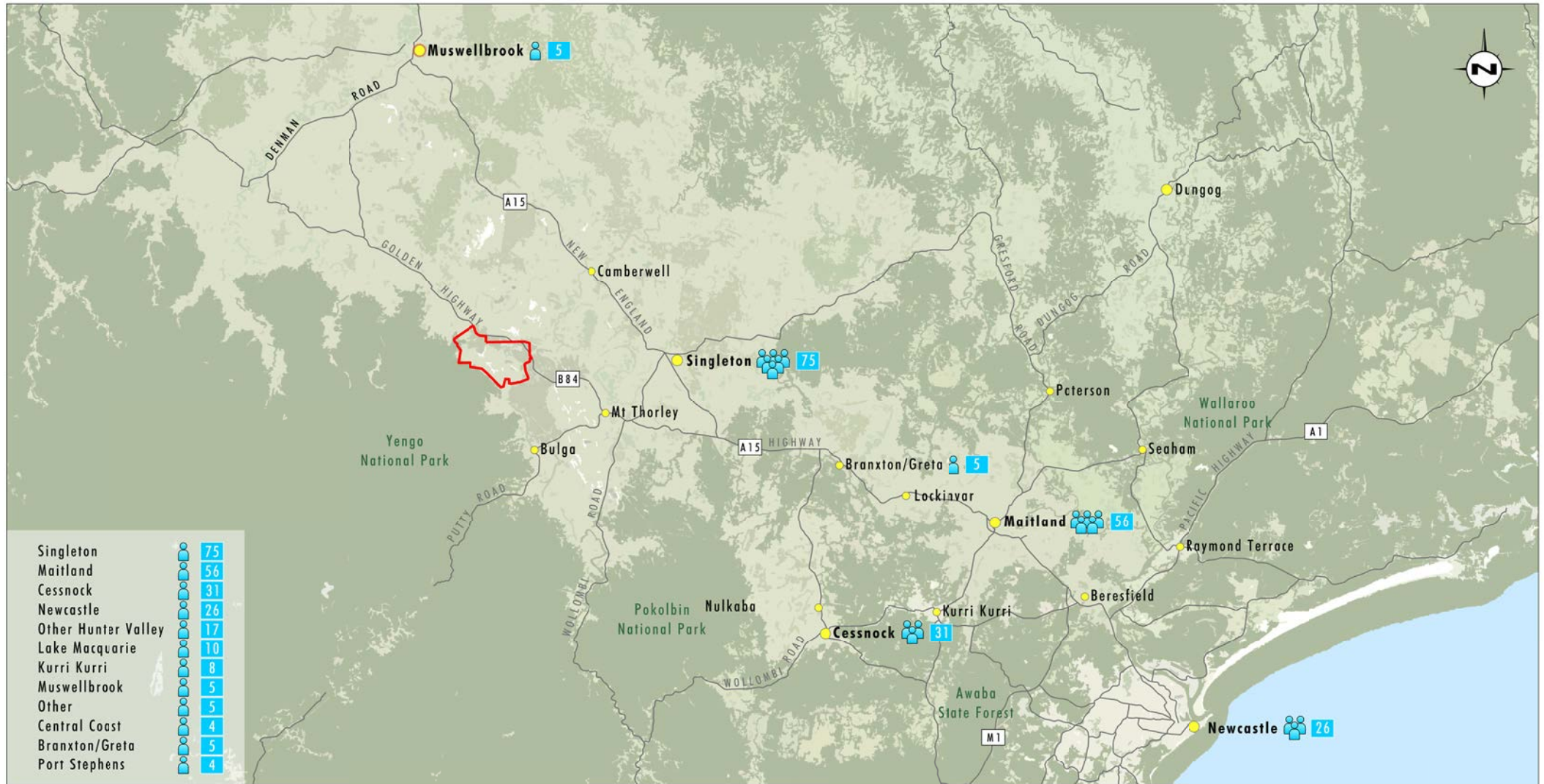


Image Source: Google Earth (2015)
Data Source: United (2015)

Legend

- Project
- 👤 Community Participation (Total Persons)

FIGURE 4.3

Employee Household Community Participation

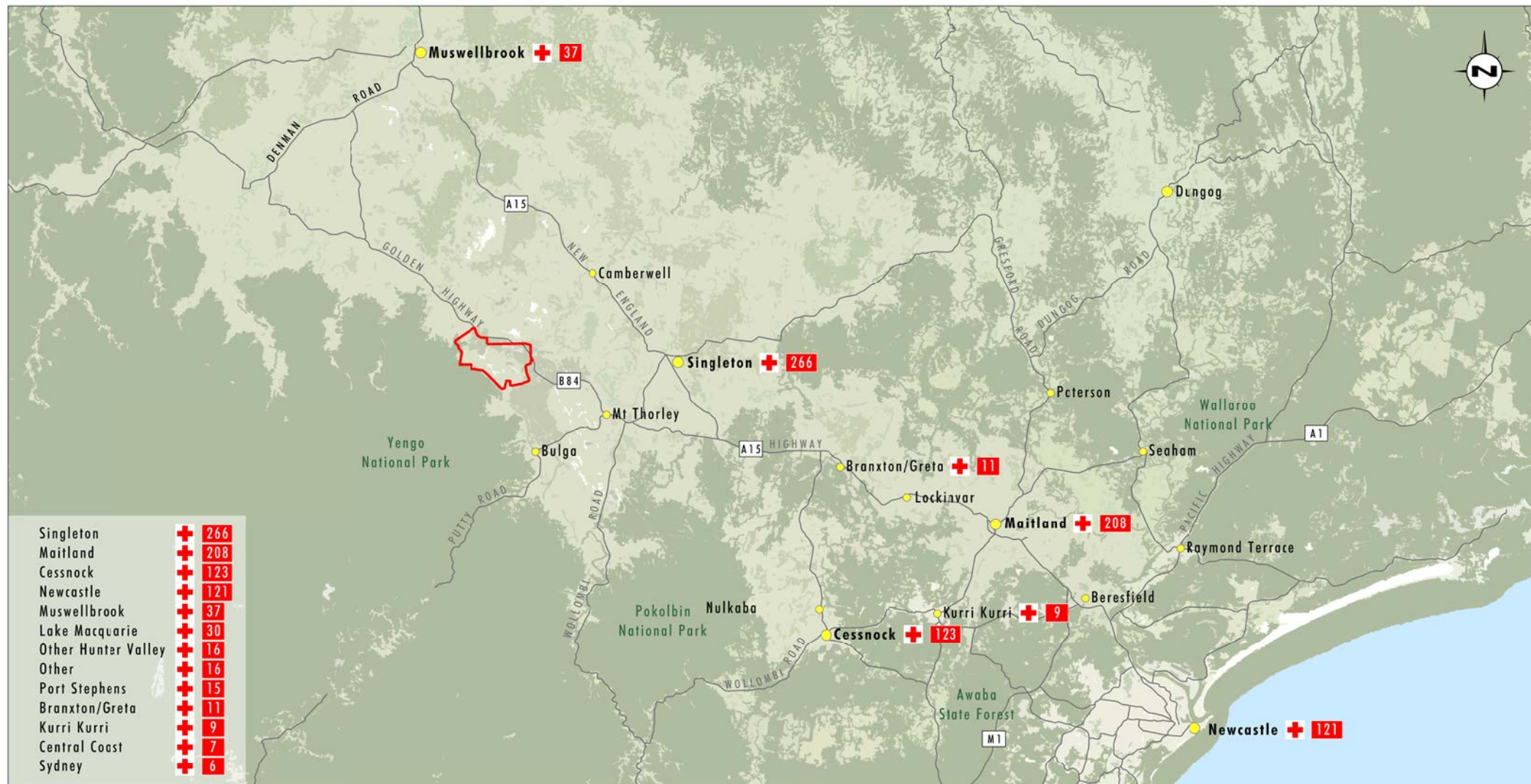


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km
1:600 000

Legend

- Project
- Use of Health Services (Total Persons)

FIGURE 4.4

Use of Health Services

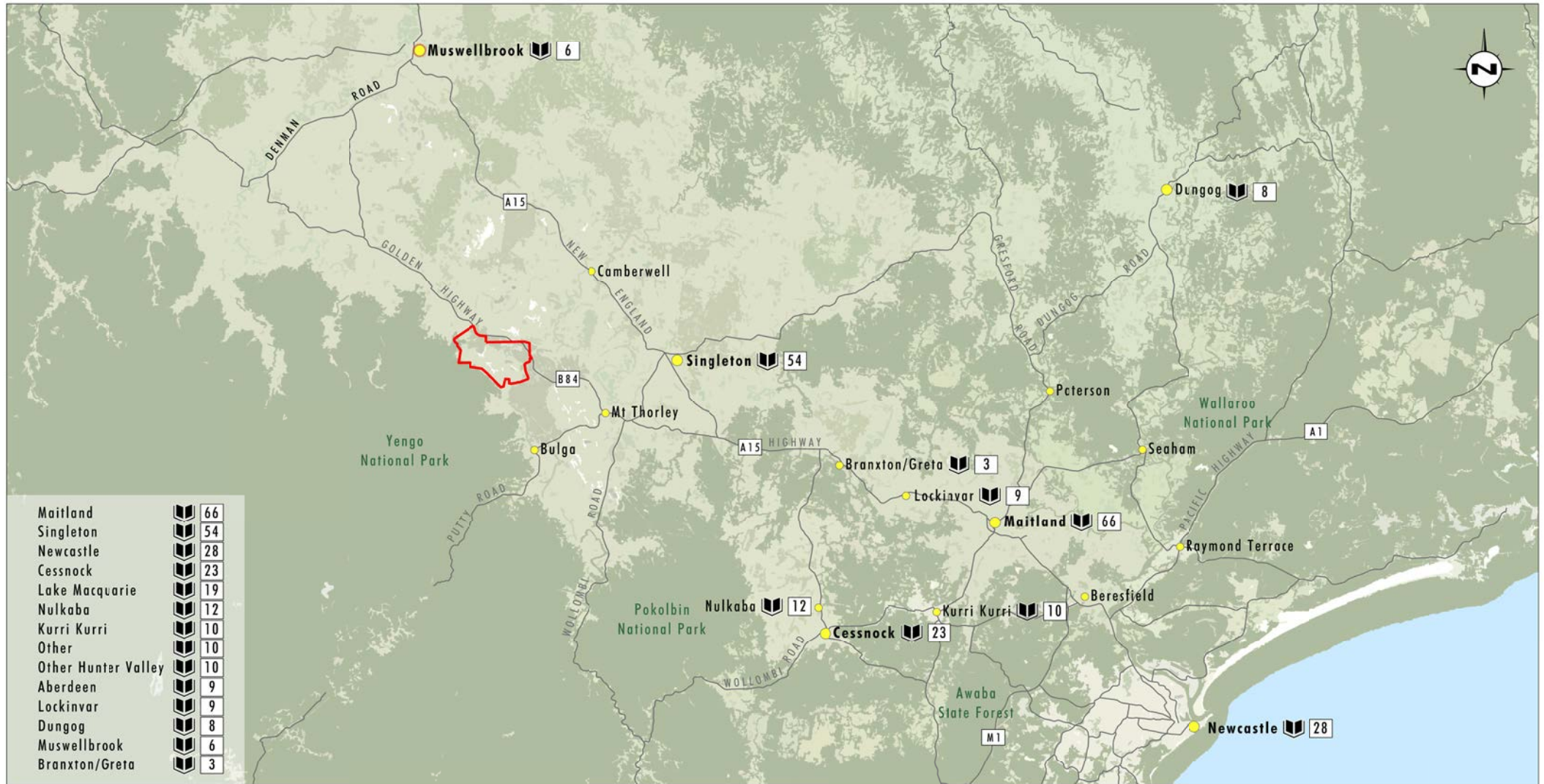


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km
1:600 000

Legend

- Project
- Education Attendance (Total Persons)

FIGURE 4.5

Education Attendance

5.0 Assessment of Social Impacts and Opportunities

Acknowledging the constantly changing nature of communities, the aim of the current assessment is to consider any changes to the baseline social environment as a result of the Project proceeding, noting that the existing United and Wambo mines are a part of that baseline environment. To do so, the SIOA integrates assessment of all the data presented throughout this document, including Project details, data relating to the existing community, and issues and concerns of local landholders and other key stakeholders to develop a layered picture of the potential social risks, impacts and opportunities that arise as the result of the Project.

Social risks extend beyond merely ‘technical’ risks (i.e. hazards), to include potential for ‘outrage’, that is people’s perceptions (including fears/aspirations) of the risk/hazard (Sandman, 1993). The integration of the outcomes of the hazard ranking with stakeholder perceived ranking of risks thus affords an integration of expert and local knowledge in impact assessment, and enables risk to be addressed holistically, leading to the development of more effective impact minimisation, mitigation, amelioration and enhancement strategies (refer to **Section 5.4**).

Impact themes have been separated into two broad categories: social amenity impacts and impacts relating to community sustainability, values and place. Social amenity impacts are those that relate primarily to the change in land use within the immediate locality, such as dust, noise, blasting, land management etc. These impacts are largely localised and nearby residents are usually the most significantly impacted. Impacts to community sustainability, values and place include impacts felt more widely, such as those due to population movements or changes to the economy, as well as less tangible and psychosocial aspects of change, such as the impacts of the stress of change, to how people value their homes and surroundings to the sustainability of communities as a whole (refer to **Table 5.1**)

Table 5.1 Assessed Impact Themes

Social Amenity Impacts	Impacts to community sustainability, values and place
Air quality (dust), including potential for health impacts	Population change
Noise	Impacts on housing availability and community infrastructure
Visual impacts	Economic impacts
Blasting	Sense of community
Traffic	Community sustainability
Land management and future land use	
Other environmental impacts, such as those to water, biodiversity and greenhouse gases	

Each assessed impact theme is presented in a social impact plot⁴, comparing the technical and stakeholder perceived risks assessed. The impact plot is used as a way of prioritising impacts based on a ranking of both technical and stakeholder perceived impact (i.e. hazard, and matters of importance to the community – perceived risk) using a scale of ‘low’, ‘medium’, or ‘high’.

Technical risks relate to the level of impact assessed by specialists within the EIS that have the potential to impact on the social fabric of the locality and wider region. Stakeholder perceived risks relate to the perception and experience of these technical risks within a given community. For example, while a technical risk may be considered low, if it is experienced in a subjectively significant way, further work to improve mitigation, management and communication of the risk would be required, even if the technical impact is predicted to be low. Each impact theme has been assessed within this SIOA considering:

- The importance of each theme for project stakeholders as identified through the consultation program, with the level of perceived stakeholder concern rated according to the following categories:
 - o High (red) - high level of current or potential for future concern
 - o Moderate (amber) – moderate level of current or potential for future concern
 - o Low (green) – low level of current or potential for future concern.
- The assessment of social risks and impacts, including review and analysis of relevant secondary data, and identification of any opportunities that arise within each theme
- The outcomes of specialist environmental studies that have implications for the SIOA
- Current and proposed mitigation and management measures to improve Project design and operation and social/community impact outcomes.

In addition to the technical and perceived stakeholder risks determined through the engagement program, analysis of Wambo complaints data (in the form of calls to the Wambo community hotline) for the period between 2011 and 2014 was also analysed. No relevant complaints were received at United during this time period, with the mine in care and maintenance. As detailed in **Figure 5.1**, the most commonly cited concerns were air quality / dust, noise, blasting and lighting.

⁴ Social Impact plots are a methodology developed by Coakes Consulting (2009) as a means of integrating social and technical perspectives of risk/impact in project development.

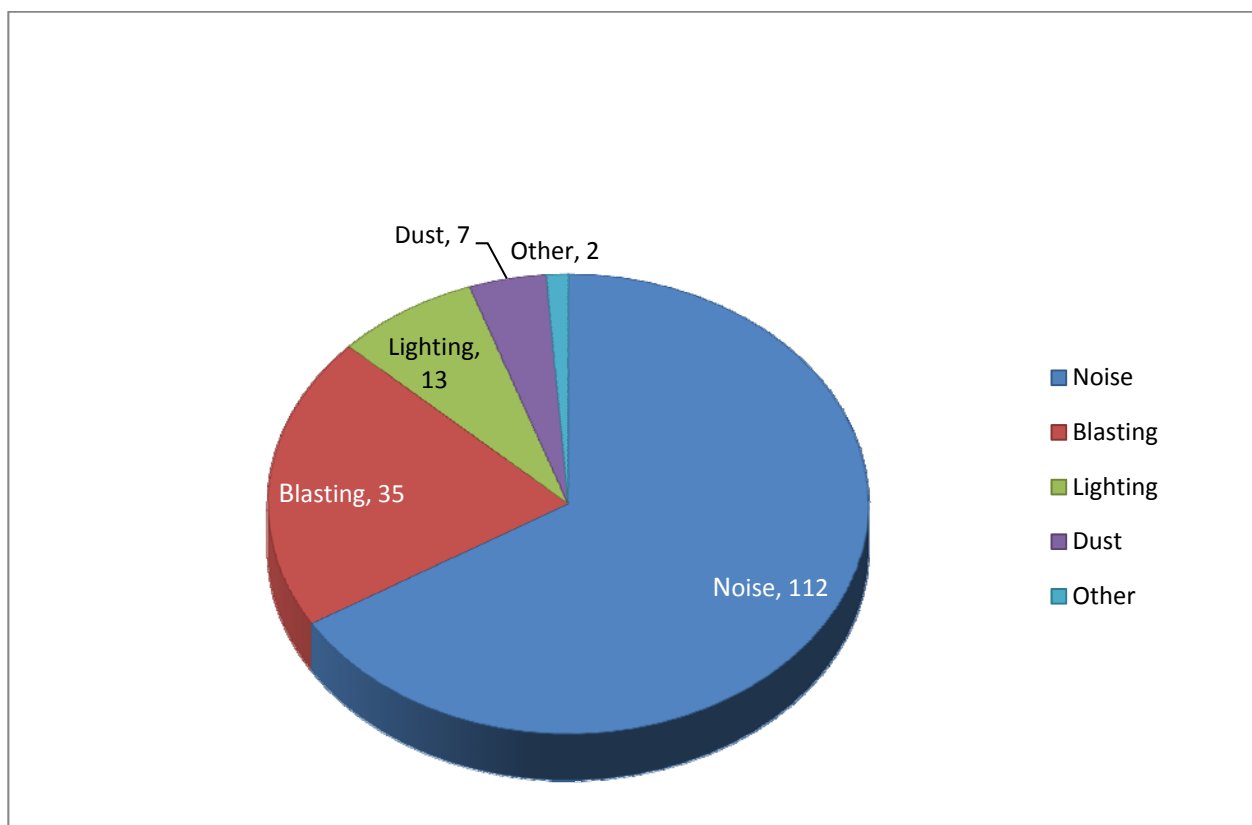
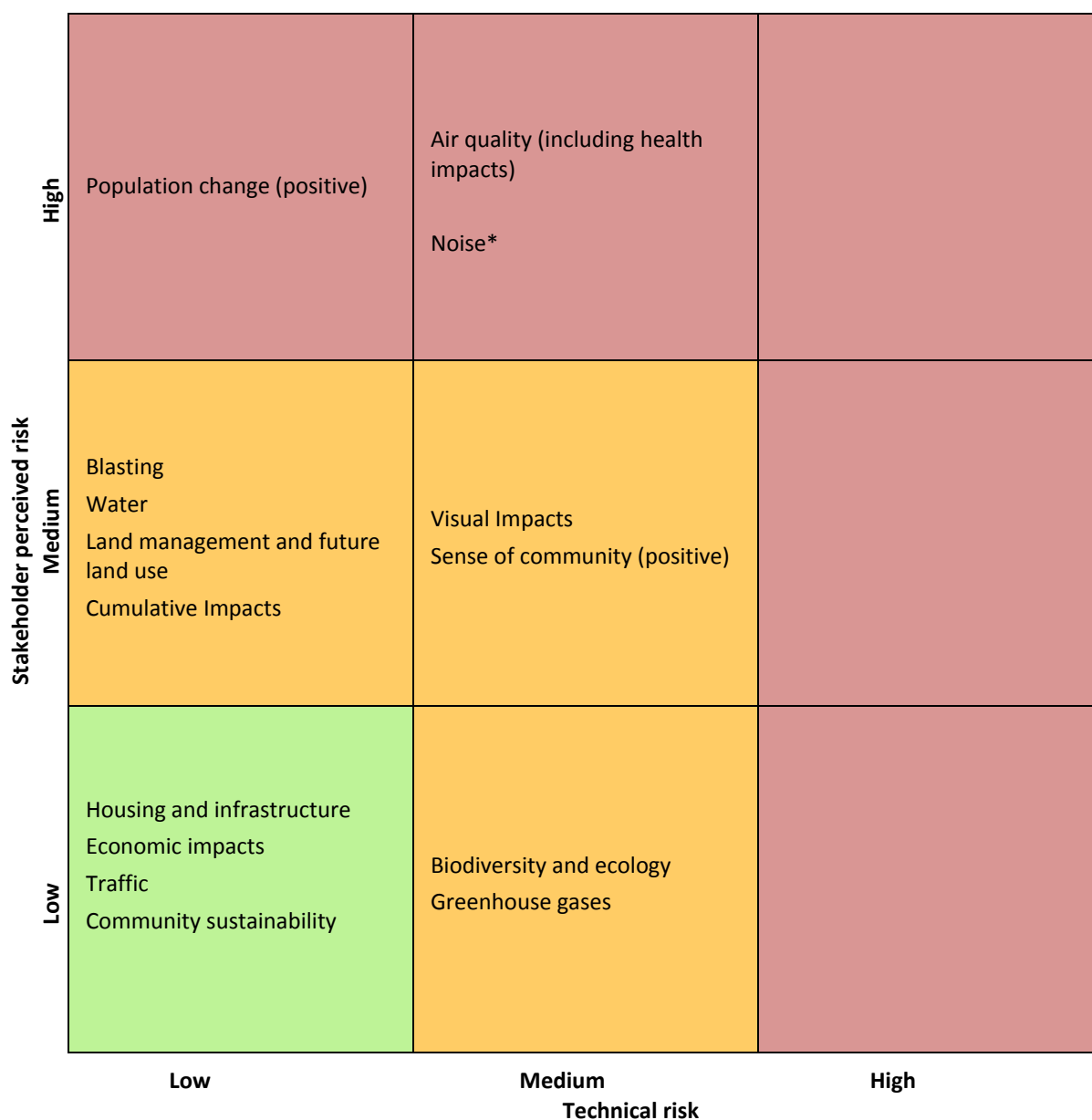


Figure 5.1

Complaints in relation to Wambo 2011 to 2014. Source: Wambo mine complaints 2011-14

This complaints data has been incorporated, alongside technical and stakeholder perceived risks, in the development of the social impact plot within **Figure 5.2** below.



* Note: Excludes residences that are expected to be granted acquisition rights

Figure 5.2

Social Impact Plot – Assessed Impacts

5.1 Impacts on Social Amenity

Social amenity is the inherent liveability or attractiveness of a social environment and is often a critical factor that affects people's quality of life. A number of Project aspects have been identified as potentially impacting social amenity, these include:

- Air quality impacts (in particular dust emissions)
- Noise impacts (including blasting)
- Visual impacts

- Blasting
- Traffic and road safety
- Land management and future land use
- Other environmental aspects.

5.1.1 Air quality

Air quality (dust) was identified by stakeholders (local and regional) as one of the issues of most concern. Existing operational issues relating to air quality were discussed as well as concerns that further Project development would result in increased air quality impacts. Consequently, this issue has been ranked as *high* from a stakeholder perspective (refer to **Table 5.2**).

There were very few formal complaints about air quality/dust via the community hotline, despite it being the most commonly cited concern amongst landholders in the community consultations. This is potentially due to dust being a cumulative issue, rather than an immediate issue like blasting. Stakeholders noted the inherent difficulties in assigning dust impacts to particular projects during interviews, given the presence of a number of mining operations in the area.

One of the most frequent concerns noted by stakeholders when discussing air quality was the perceived and experienced impacts to health. Of particular concern to landholders was the potential for – and for some the reality of – the impact of dust on respiratory and other health aspects of individuals and family members e.g. asthma, as well as potential impacts of the presence of dust in tank water.

While available data indicates that the estimated rates of respiratory system disease (including asthma and chronic obstructive pulmonary disease) are only slightly higher for adults across the Upper Hunter (ASR⁵ 27.5 per 100) than both NSW and Country NSW averages (ASR 25.5 per 100), figures are higher than NSW averages in Cessnock (ASR 32.4 per 100), Maitland (ASR 32 per 100), and Singleton (ASR 31.9 per 100) (PHIDU Social Health Atlas 2015).

Regional attention to air quality is also high, and is regularly discussed in regional news coverage. Initiatives such as the Upper Hunter Air Quality Monitoring Network (established in 2009), the Upper Hunter Valley Particle Characterisation Study and the website *Hunter Air and Health* (a community web resource aimed at providing a ‘one stop shop’ for data regarding air quality, industrial development and health) are just some of the key government, academic and community resources being directed to this issue. Recent concern has focused in the Lower Hunter and in Newcastle on the issue of covering coal train wagons, which has been picked up by local media.

The NSW Office of Environment and Heritage *NSW Air Quality Statement 2015* reports that ‘The Air Quality Index was in the very good, good or fair category for at least 95 percent of the time in the Sydney and Hunter regions’. The report notes that all Hunter stations met the PM₁₀ level goals of five days or less over the standard, with exceedances influenced by a state wide dust storm in May 2015, and there were nine days where exceedances of the PM_{2.5} standard were recorded across the Hunter, likely influenced by wood-fired heaters.

Given community concern, rigorous stakeholder interest and ongoing media attention regarding this issue, the perceived stakeholder risk regarding air quality impacts on health is also ranked as *high*.

⁵ Age Standardised Rate

Regarding the direct technical impact of the Project, modelling of cumulative air quality impacts including the impact of the Project, predicted that the relevant regulatory limits would be exceeded at the one remaining privately owned property in Warkworth. The property is already afforded acquisition rights under the Wambo mine development consent and Wambo train loading facility development consent due to being within the affectation zone of this mine (refer to **Section 5.1.3** for further details on acquisitions). Based on the predicted dust and noise impacts of the Project, in accordance with the NSW Governments Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (NSW Government 2014) it is expected that the owner of this will be afforded acquisition rights under the Project development consent should it be approved.

Mine owned residences located in Warkworth and other areas surrounding the Project Area are anticipated to experience exceedances of the air quality assessment criteria. These properties are mine owned as they are within the affection zones of the existing mines. United will consult with the owners, and as appropriate the tenants of these properties, to appropriately inform them about the predicted air quality impacts of the Project, over the life of the Project.

Based on analysis within the broader EIS, and the implications for the surrounding localities, air quality impacts have been ranked as having *high* technical risk for Warkworth, and *medium* for other local residents.

Table 5.2 Summary of Project impact – air quality

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Dust emissions – impact on social amenity	Local area	Local residents*	High	Medium

* Note: Excludes residences that are expected to be granted acquisition rights.

5.1.2 Noise

Noise was another key issue raised by local community stakeholders (refer to **Section 3.11**), and was consistently noted when discussing existing operations and the Project specifically. Neighbouring landholders were concerned about general operational noise and noise from blasting.

Noise was also the most common complaint received by Wambo over the 2011-14 period. A review of the minutes of CCC meetings indicated that all complaints were related to operational noise from the mine i.e. complaint from a nearby resident claiming that noise from the mine was excessive on a certain date. Consequently, the perceived impact of noise on social amenity is ranked as a *high* perceived stakeholder risk.

A detailed noise impact assessment was completed for the Project. The assessment identified that much of the immediately surrounding area is currently impacted by industrial noise, including impacts from the existing Wambo Open Cut which will become part of the Project. There are existing noise limits in place for Wambo, however, as per the process in the NSW Industrial Noise Policy (INP) (EPA, 2009) the noise impact assessment established the background noise conditions in absence of the existing mine noise to determine the target noise levels for the Project. These targets are generally lower than the existing noise criteria approved for Wambo. The noise impact assessment then predicted the noise impacts from the Project

alone and the cumulate noise impacts including the Project and all other surrounding mines and compared them to the relevant criteria. As part of the assessment process a range of management and mitigation measures were put in place to reduce noise impacts, with the predicted impacts on the community reducing substantially due to the incorporation of these measures into the Project design.

The noise impact assessment identified that seven properties would be significantly affected by noise, one in Warkworth and six near the Golden Highway just north of the Project Area. In accordance with DPE's Acquisition Policy these properties are likely to be provided with voluntary acquisition rights under any development consent granted for the Project. The noise impact assessment also found that 16 residences fall within the active noise management zone for the Project and will therefore have access to property based noise mitigation measures on request.

Noise emissions are considered to be one of the most substantial environmentally induced or social amenity impacts due to the Project and have been assessed as a *high* technical risk for residences in the Noise Affectionation Zone in Warkworth and adjacent to the north of the Project Area, and *medium* for other local residents (refer to **Table 5.3**). Consequently the mitigation and management strategies proposed to address this impact are comprehensive.

Table 5.3 Summary of Project impact – noise

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Noise emissions – impact on social amenity	Local area	Local residents*	High	Medium

* Note: Excludes residences that are expected to be granted acquisition rights.

5.1.3 Voluntary Property Acquisition

When a property is afforded voluntary acquisition rights under a development consent, it endows the owner of the property with the legal option to request that the proponent of a development purchase their property and binds the proponent to enter into negotiations to purchase the property at a fair and reasonable price. It *does not* mean that these properties must be acquired by the company or will be automatically acquired, in order for the Project to progress, it is at the discretion of the owner to request acquisition.

Further, if a property does become acquired, it is possible that it may continue to be occupied by residents (either by new tenants or by the original landholder) following its purchase by proponent. As such, acquisition 'rights' do not necessarily translate into an actual property purchase, and in turn, a property purchase does not necessarily translate into population change or decrease. Further consideration of how the acquisition rights proposed as part of the Project relate to aspects of community sustainability and sense of place are assessed further in **Section 5.2.6**.

5.1.4 Visual impacts

Visual amenity was raised as an issue of concern to local community stakeholders, with key issues relating to decreased amenity and impact on rural outlook. Impacts of lighting from night operations and beautification of the final landform were also raised by one or two stakeholders.

Local residents were offered the opportunity to receive information and provide feedback concerning the visual assessment outcomes at a *Final Landform and Rehabilitation In-focus* session. The session explored:

- How visual amenity is assessed from a technical perspective
- Existing examples of preferred and least preferred mine landform and rehabilitation
- Existing examples of preferred aspects of non-mine landform and vegetation
- Discussion of final landform and land use preferences for inclusion within the landscape strategy.

Visual amenity was raised as a concern by a number of landholders during this session in particular the changes to scenery in the area due to mining activities, and the glow of lighting from operations at night. In addition, there were 13 complaints received about lighting between 2011 and 2014, and most related to direct or stray lighting pointing in the direction of residences.

As a result, the perceived impact of visual impact is ranked as a *medium* stakeholder risk.

A visual assessment was also conducted with the following findings:

- the impact to visual amenity will be intensified at the south end of the Project Area, north of Bulga, with visibility of emplacement areas available from residential properties. Many of these residences currently have views of the existing Wambo Open Cut operations
- at the north end of the Project Area towards Jerrys Plains views of mining areas (from some locations) and overburden emplacement areas will be available. The key impacts in this area will occur as the Wambo Open Cut mines through an existing ridge and becomes more visible. This will occur as part of the currently approved mining operations at Wambo mine and not as a result of the Project. The proposed changes to mining as a result of the Project are not expected to substantially alter the range of visual impacts that will occur in this area. Views of the proposed United Open Cut will remain screened by the existing ridgeline
- views from some areas in Maison Dieu will be affected, noting that these impacts are consistent with visual impacts from existing operations
- prominent views of the mining operations will be available from portions of the Golden Highway that will run parallel to the Project Area. Existing views of the Wambo mine, United mine and Hunter Valley Operations South mine are currently available from the Golden Highway and the Project is not considered likely to change the overall nature of views from this section of the Highway.

As a result, the mitigated technical risk to visual amenity has been ranked as medium (refer to **Table 5.4**).

Table 5.4 Summary of Project impact – visual amenity

Project Aspect	Geographic scope	Stakeholders potentially impacted	Perceived Stakeholder risk	Mitigated technical risk
Visual changes – impacts to social amenity	Singleton LGA	Local residents and Commuters	Medium	Medium

5.1.5 Blasting

Blasting was identified as a key concern with regard to both existing operations, and the Project. Specific concerns included vibrations, air quality, potential impacts to stock and structural damage to residences and businesses. Two residents noted experiencing anxiety related to blasting due to potential impacts to property and personal items.

Blasting was also the second most common complaint made through the Wambo community hotline between 2011 and 2014. Blasting related complaints often referred to noise and vibration, with many residents complaining of blasts shaking houses, windows or sheds. However, in a number of cases this also referred to fumes generated from blasting.

The significance of blasting impacts to local residents generally decreases with distance from the Project Area. Consequently, the overall perceived impact of blasting for stakeholders is rated as *medium*.

A technical blasting report prepared for the EIS used a ground vibration and blast overpressure (also sometimes referred to as air blast) predictive model to assess the impact of proposed blasting on a range of receptors, including local residences. The report found that:

- Ground vibration and blast overpressure can be actively managed as part of the Project to comply with relevant criteria at all locations, however, the assessment found that managing blasts to the relevant criteria at the nearest non-mine owned residence located in Warkworth may be operationally impracticable. As discussed above, this residence currently has acquisition rights under the Wambo mine and train loading facility development consents and will be in the affectation zone for both dust and noise for the Project, and thus is expected to be granted voluntary acquisition rights under any development consent granted for the Project.
- The Project was predicted to meet the relevant criteria at all other private residences and at all infrastructure locations.
- Blast fume modelling found that in the event that any blast fume events occurred, the levels of fume predicted at sensitive receiver locations would be within the relevant air quality criteria. United has committed to a range of controls to appropriately manage the risk of blast fume occurring.
- Parts of the Golden Highway will pass within 500 metres of the Project and will need to be closed during blasting operations. Users of the highway are already impacted by road closures due to blasting at the nearby Hunter Valley Operations mine and are approved to be closed for the approved Wambo Open Cut up to once per day.

Given the impact level of blasting in Warkworth, the technical risk for this location has been rated as *medium* (refer to **Table 5.5**). As all other areas are compliant, the technical risk of blasting for other local residents is considered to be *low*.

Table 5.5 Summary of Project impact - blasting

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Blasting - impact on social amenity	Local s area Singleton LGA	Residents of Warkworth	Medium	Medium
		Other local residents	Medium	Low

5.1.6 Traffic and road safety

While traffic was a perceived impact of both existing operations and the Project, it was noted by only a small number of landholders (two landholders noted this issue when discussing the existing operations and two landholders noted it when discussing the Project). The theme that was raised in all cases related to a general increase in traffic.

Given these views, this impact has been ranked as *low* from a perceived stakeholder perspective.

As part of the EIS, a technical assessment of the actual impact of the Project on traffic on the road network was conducted. The assessment found no significant long term traffic impacts due to the Project, with the predicted traffic volumes within the existing capacity of the road network and key intersections. The proposed realignment of the Golden Highway will also be fully constructed before it is connected to the existing road and opened to seek to reduce as much as practicable the impacts on users of the Golden Highway.

The traffic assessment did reveal an existing safety issue with a right hand turn from the Golden Highway on to Wallaby Scrub Road (as was noted during one stakeholder interview). It is noted that Wallaby Scrub Road has been approved for closure as part of the Warkworth Mine Continuation Project owned by Coal and Allied. It is anticipated that the intersection will be closed during Year 1 of the Project.

Consequently, impacts of traffic as a result of the Project have been ranked as a *low* technical risk (refer to **Table 5.6**).

Table 5.6 Summary of Project impact – traffic

Project Aspect	Geographic scope	Stakeholders potentially impacted	Perceived Stakeholder risk	Mitigated technical risk
Traffic – impacts on social amenity and safety	Singleton LGA and local area	Local residents Travellers	Low	Low

5.1.7 Land management and future land use

Landholders identified issues associated with land management and rehabilitation as an area of considerable interest – both in terms of opportunities and risks/concerns. Concerns related to current land management practices included weed, pest and wild animal control on mine owned land. Issues also included the impact of nearby mining on domestic animals (e.g. blasting and noise impacts), and impact on water quality. There is potential for land management concerns to be amplified by further property acquisition by mining companies.

There was considerable interest in the discussion about the proposed land use for rehabilitated and mine owned lands after completion of the Project, with the majority of landholders indicating a preference for land to be returned to grazing and pastoral land. Feedback gathered from landholders suggests a strong desire for clarification and communication on this issue.

Stakeholders also noted concerns in relation to the ongoing management of mine owned buffer lands. The purchase of agricultural land surrounding the existing operation and other nearby operations to be leased to third parties for management was considered controversial. While some stakeholders believed some previous lease processes to be unfair, others noted that without long term security of tenure, some tenants on mine owned properties (by Wambo and other mining companies) were perceived to have not invested in their farm nor managed the land well, leading to land degradation and an overall loss of agricultural productivity. Given the scale of buffer and other mine owned lands in the locality, the loss of people working the land and decrease or change in persons within mine owned properties was considered by some stakeholders as a loss to the wider cohesiveness and long term sustainability of the community (refer to **Section 5.2.6**).

Due to the frequency of comments regarding land management received during consultation, this issue has been ranked as a *medium* perceived stakeholder risk.

An agricultural assessment has been undertaken as part of the wider EIS, as has planning for the rehabilitation of the post mine landform and United has considered the above feedback in development of the proposed final land use and rehabilitation strategy for the Project. Following review of these documents, the technical risk to current land management is considered to be *low* (refer to **Table 5.7**).

Table 5.7 Summary of Project impacts – Land use and management

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Land management and future land use	Local area Singleton LGA	Local Landholders and Other Land users Regional stakeholders Other mine sites	Medium	Low

5.1.8 Other environmental aspects

A range of other environmental aspects are also considered within the broader EIS. These include potential impacts to surface and groundwater, biodiversity, and greenhouse gases and climate change. Issues relating to these aspects of the Project were discussed during landholder interviews. The relevance of each of these aspects is summarised below.

5.1.8.1 Water

A number of landholders raised concerns regarding the impact of existing operations on water resources, with most discussion focusing on the cumulative impact of coal mining on ground and surface water quality and supply. Other water related concerns included salinity and lower than normal volumes in natural and man-made water bodies.

Technical assessments of surface and groundwater systems were conducted as part of the EIS, with the report indicating that there will generally be minimal impact on water resources as a result of the Project with the proposed management and mitigation measures in place. Issues to note include:

- There is a proposed change to the catchment of Waterfall Creek which will see a minor increase (approximately 20 minutes) in the potential inundation time on the Golden Highway during a Probable Maximum Flood event. In the event of Probably Maximum Flood, in the current situation (i.e. without the Project) there would be considerable damage to the Golden Highway which would likely become un-useable and therefore a minor increase to inundation duration is considered negligible.
- There is one registered private bore that is predicted to experience drawdown impacts as a result of groundwater drawdown associated with the Project. This bore is damaged and is not currently operational. The model predicts the bore would experience a maximum 6.7 metres decline in groundwater levels, with the Project predicted to account for 6.1 metres of drawdown during active mining. Following mining the groundwater levels are predicted to recover and the maximum drawdown post-mining is predicted to be 3.1 metres below 2015 groundwater levels, of which the Project accounts for 1.8 metres of water level drawdown. It is therefore predicted the bore, if repaired, will remain usable, but with a reduced peak pumping capacity due to the predicted decline in water level. It is noted that the bore is located on a property within the predicted noise affectation zone for the Project and that this property is likely to have voluntary acquisition rights should the Project be approved. Whilst this property remains in private ownership the bore will be monitored and if there is any material impact on serviceable water supply from this bore, United will consult with the property owner to determine appropriate alternate water supply arrangements.
- The model predicts that a second private bore (GW060750) will also experience an impact due to the Project, however, the Project contribution will be less than 2 metres and therefore does not trigger the AIP minimum impact criteria. The maximum decline in groundwater levels at this bore will be 4.3 metres, with the Project predicted to account for 0.5 metre of drawdown during active mining. Following mining the groundwater levels will recover and the maximum drawdown post-mining is predicted to be 1.7 metres below 2015 groundwater levels, of which the Project accounts for 1.6 metres of water level drawdown.

Consequently, water has been ranked as a *medium* perceived stakeholder issue and a *low* technical risk (refer to **Table 5.8**).

5.1.8.2 Biodiversity

Consultation with landholders did not identify the conservation of biodiversity as a key area of concern. When ecology or biodiversity was raised by landholders it was usually discussed in the context of an overall need to have respect for the natural environment and in relation to concerns regarding general environmental degradation, land management and rehabilitation of the post mining landscape. Concern was focused on the loss of agricultural land and the increase in habitat for agricultural pest species such as kangaroos. As noted previously, there was a strong desire for mined land to be returned to agricultural use upon completion of the Project.

Consequently, biodiversity has been ranked as a *low* perceived stakeholder risk.

From a technical perspective the potential impacts on biodiversity are a key issue due to the presence of threatened vegetation communities and species in the Project Area. A detailed assessment of the potential impacts of the Project on biodiversity has been undertaken, a detailed biodiversity impact mitigation strategy and a detailed biodiversity offset strategy have been developed.

With the proposed mitigation and offset strategies, the technical biodiversity risk has been ranked as *medium* (refer to **Table 5.8**).

5.1.8.3 Greenhouse gases

Climate change and greenhouse gases were not widely discussed during stakeholder consultations, with neighbouring landholders not raising the issue at all outside wider discussions about climate change. Accordingly, greenhouse gas has been ranked as a *low* stakeholder perceived risk.

It is noted, however, that while community consultation undertaken as part of the SIOA did not raise issues regarding Project related greenhouse gas emissions, the Project is situated within the context of ongoing wider concern regarding greenhouse gases and their links to climate change, with a key focus on new or expanding coal mining operations.

Greenhouse gas emissions will be mitigated through ongoing energy efficiency initiatives and through optimising fuel usage and productivity. This includes reducing the fuel usage through effective mine design, considering energy usage as a key driver in the procurement of new equipment and scheduling activities so that equipment and vehicle operation is optimised, reducing energy consumption and consequently reducing greenhouse gas emissions. Glencore also has a broad product stewardship program in place to work with key stakeholders regarding greenhouse gas impacts.

Consequently, considering the global action underway to seek to reduce overall greenhouse gas generation at a global level whilst still meeting the expanding demand for energy, the impact of greenhouse gases has been ranked as a *medium* mitigated technical risk (refer to **Table 5.8**).

Table 5.8 Summary of Project impact – environment

Project Aspect	Geographic scope	Stakeholders potentially impacted	Perceived stakeholder risk	Mitigated technical risk
Impact on Ecological values	Local area Singleton LGA Hunter region (bio-region)	Local residents Regional stakeholders Environmental NGOs Government agencies	Low	Medium
Impact on Water (ground and surface)	Local area Singleton LGA Hunter Catchment Hunter Region	Local residents Water users Wider community	Medium	Low
Greenhouse gases	Global	Residents Business Government	Medium	Medium

5.2 Community Sustainability, Values and Place

The following section describes the potential impacts of the Project on the sense of community, social cohesion, community connectedness (to people and place) and overall community sustainability, as a result of the Project. There are two core drivers for these changes; being population change, which influences a range of factors such as housing, infrastructure and economic sustainability; and the more intangible or psychosocial aspects of the Project within affected stakeholders. These impacts include those such as changes to the character of a locality, people's lifestyles, fears and aspirations.

5.2.1 Population change

Changes to population are a fundamental impact within SIOA, given that the size, diversity and behaviours of a community are underpinned by its population and characteristics. Population change is usually described as a first order social impact which has the potential to create a number of second order social impacts such as impacts on community infrastructure and services, change in sense of community and social cohesion.

It is generally regarded in the SIOA literature that a Project can influence population change by impacts emerging from three main factors:

- An influx of construction workers
- A change to the current operational workforce

- Acquisition of residential land in proximity to the operations.

There are anticipated to be up to a peak of 250 new operational employees and up to a peak of approximately 120 construction related employees required as part of the Project. The peak 250 operational employees will join a continuing workforce of 250, resulting in a total peak operational workforce of approximately 500 persons. Peak operational employee numbers are anticipated for the first six to seven years before decreasing to a total of approximately 450 persons. Construction has an anticipated duration of three years, with the peak occurring in years one and two. The assessment assumptions around operational and construction workforces are summarised in **Table 5.9**.

Table 5.9 Assessment assumptions and differences between construction and operational workforces

Construction Workforce	Operational workforce
Temporary workforce. While they may relocate to an area for the duration of construction they either leave afterwards, or their connection to the Project ceases at that time.	Long term, assumed for the life of approved operations.
Do not require long term accommodation, and likely to seek housing in tourist accommodation (e.g. motels) or short term rentals on the open market, usually close to the project on which they are engaged.	Require long term accommodation, assumed within purchased or rented properties (i.e. not within tourist accommodation or other temporary accommodation options).
Families of construction personnel often remain within existing long term accommodation, and do not move into an area for the duration of the project's construction period if construction workers need to relocate for work.	Families of typical operational personnel are assumed to move with incoming employees into an area if workers need to relocate for their new jobs.
Infrastructure impacts constrained to health care, policing, transport, water supply, garbage collection, sewerage, linear infrastructure etc.	Infrastructure impacts not as constrained. In addition to that required by construction workforces, operational personnel (and their families) require provision for childcare, youth and family services, open spaces and family friendly recreational activities etc.
May be considered a 'service population', similar to transient workers or peak tourist populations, that utilise infrastructure but may not use or contribute to infrastructure in the same way that resident populations will do.	May be considered a 'resident population' for infrastructure planning and contributions through rates etc.

In addition, the assessment considers whether or not new workers are anticipated to come from outside the local area and will need accommodation, or if they are already living close enough to operations to commute from home; the family size and structure of these employee families, as well as these families additional needs. These have been assessed in a series of different scenarios, from a 'lowest impact' scenario, where there are no population flows into the region to service the project to a 'highest' impact, where no employees or contractors or employees are sourced locally, and all of them are required to move into the region from further away.

Assuming consistent employment practices, the Project related workforce is anticipated to be demographically similar to the existing workforce, and required data to facilitate modelling has been gathered through the TRC analysis summarised in **Section 4**. As noted above, the modelled workforce consists of:

- Total peak construction workforce of 120
- Total peak operational workforce, consisting of 500
- Workforce from existing operations of 250
- New workforce to be recruited as part of the project of 250.

Presentation of the different scenarios modelled is provided in **Table 5.10**.

Table 5.10 Workforce modelling scenarios

	100% local (lowest change)	80% local	50% local	20% local	0% local (highest change)
Construction					
Approximate construction workforce to be recruited from outside the local area	0	24	60	96	120
Operational					
Approximate operational workforce to be recruited from outside the local area	0	50	125	200	250
Total persons moving into the area (operational workforce plus families)	0	175	438	700	875

In relation to the total population of the Singleton LGA and surrounding region, the technical impact of the possible quantum of incoming persons is assessed as *low*.

Given the stabilisation of the mining related economy following the decline in coal price during 2013-2014 (refer to **Section 3.5.2**), it is difficult to predict the potential uptake of recruitment locally. Ongoing redundancies, such as those associated with the cessation of mining activities at Drayton South, are indicative of a suitably trained and available workforce ready to commence employment at the Project. However consultations with representatives at three recruitment agencies who specialise in mining operations and maintenance workforces have indicated that there is not currently a ready and waiting pool of trained workers. On the contrary, recruitment agency representatives indicate that there is a shortage of trained mining operators, and that as redundancies have occurred, some workers have chosen to leave the industry.

Noting that population growth due to the Project is limited within the neighbouring localities due to the lack of potential for land releases and subdivision, interviewed landholders and community group representatives were generally positive regarding potential growth at the micro scale. One of the key areas of interest is in relation to local employment, specifically employment of people who live in, or are related to people who live in, Jerrys Plains. As such stakeholder perceived concern is assessed as *high (positive)* within **Table 5.11**.

Glencore has indicated a desire to maximise local recruitment. Strategies to assist are presented in **Section 5.4**. The TRC analysis indicates that 72 per cent of the current Wambo and United workforces were recruited locally. Nonetheless, noting the difficulty in estimating an available workforce, the highest change scenario has been assessed further below.

Impacts associated with changes in population include impacts to housing availability and infrastructure capacity, economic growth and, where significant, changes to sense of community and community sustainability. It is considered that the numbers of persons potentially moving into the area for the Project are unlikely to affect changes to sense of community or community sustainability at a regional or LGA scale of analysis. Potential changes to these aspects at a township or micro level of analysis are discussed more fully in **Section 5.2.5**. Impacts to housing availability, infrastructure capacity and economic growth are presented in **Section 5.2.2** to **Section 5.2.4**.

It is noted that there are anticipated to be approximately seven properties that are likely to be afforded voluntary acquisition rights following current DPE policy should the Project be approved. There is potential that some residents may stay on a lease-back arrangement, or other tenants may potentially be sought. Detailed consideration of this is provided in **Section 5.1.3**. It is considered that acquisitions due to the Project are not likely to substantially change the overall population or demographic characteristics and warrant no further assessment in this regard.

Table 5.11 Summary of Project impacts – Population Change

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Population Change	Singleton LGA Wider region	Regional stakeholders	High (positive)	Low

5.2.2 Housing availability and infrastructure capacity

5.2.2.1 Housing availability

Housing availability and infrastructure capacity was discussed with stakeholders, however, it was noted by interviewees that there is a perception of sufficient capacity within existing housing markets and infrastructure. As such stakeholder perceived concern is assessed as being *low*.

An assessment of available housing for purchase or rent was undertaken using data from SQM Research (2015). Given the likely availability of housing from the data analysed, it was assumed that all incoming employees will relocate to the Singleton LGA as a substantially more conservative measure, even though the TRC indicates that employees will likely be more dispersed through surrounding LGAs.

Housing available for purchase or rent in the Singleton LGA (Postcode 2330) is presented in **Figure 5.3** and **Figure 5.4** respectively. Temporary/motel accommodation in Singleton LGA for construction workers has been taken from ABS (2015) *86350 Tourist Accommodation, NSW Small Area Data*. There was a maximum occupancy rate of 52 per cent for facilities in the Singleton LGA 2014-2015⁶, where there are approximately 290 rooms. This timeframe corresponds with the maximum construction workforce phase for a recent Project at the nearby Bulga Coal mine. Conservative estimates of available housing at the anticipated time of Project commencement were made based on the data available, as presented in **Table 5.12**.



Figure 5.3

Approximate Housing Availability in Postcode 2330 – Purchase

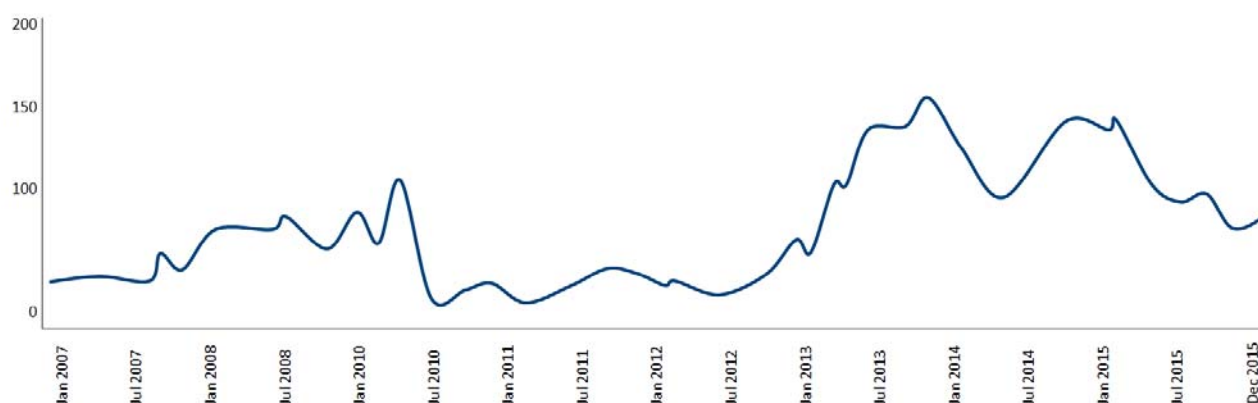


Figure 5.4

Approximate Housing Availability in Postcode 2330 – Rental

⁶ ABS data collection methods changed 2013-2014, with longitudinal analysis of older data is subject sampling error and consequently was not undertaken.

Table 5.12 Conservative Estimates of Accommodation Available in Singleton LGA

Category of accommodation	Number of properties/rooms
Purchase	500
Rental	50
Temporary/Motel	130

Additional research was undertaken to assess the potential for cumulative impacts due to the simultaneous development of State significant or other substantial operations being taken into consideration.

Assessments for projects currently being assessed or recently approved, including Rix's Creek, Bylong Coal, Mount Thorley, Warkworth and Hunter Valley Operations were reviewed, as well as consideration of the new Huntlee town currently being developed. It is considered that there are unlikely to be any substantial cumulative impacts. Should the timing of construction of multiple large scale projects coincide, it is considered that the connectivity provided to the region by the Hunter Expressway is likely to ameliorate any potential for construction related impacts, as there is ready access to surrounding LGAs which collectively have substantial accommodation options.

Overall it is considered that there is more than sufficient vacant accommodation predicted to cater for the incoming operational workforce. If all new operational workers were to move into the area at once, and all chose to live within the Singleton LGA, there is predicted to be an uptake of approximately 60 percent of housing for purchase and 105 percent of housing for rent. Employment will peak early then decline slowly with a staggered arrival of families and many will chose to live outside the Singleton LGA – approximately 70 per cent if consistent with the existing workforce. Consequently, there is considered to be a *low* impact to housing availability or the housing market due to the Project.

With regard to potential impacts to other LGAs due to the incoming population, research indicates that there is likely to be sufficient housing, and it is considered that there is sufficient flexibility within the housing market for any localised shortages to be made up in regions where there is higher capacity.

Applying the same assumptions to the construction workforce, the influx of an approximate 120 workers would require an uptake of 69 per cent of the temporary accommodation and rental houses/units available within the Singleton LGA for the peak periods of construction. Noting the flexibility of the temporary accommodation market similar to the housing market above, there is considered to be a *low* impact to temporary accommodation (including short term rental accommodation) as a result of the Project as shown in **Table 5.13**.

Table 5.13 Summary of Project impacts – Housing and Infrastructure

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Housing and Infrastructure	Singleton LGA Wider region	Regional stakeholders	Low	Low

5.2.3 Community Infrastructure and Services

A project's impact on community infrastructure and services is often one of the more tangible social impacts of a project to the wider community and is considered a secondary order impact largely influenced by population change. Project factors that can impact community services and infrastructure include:

- changing demand due to an increase in temporary or permanent population
- changing behaviours of users, such as workforce rosters determining patterns of peak service utilisation, and/or
- direct impacts on physical infrastructure during project construction and/or operation.

Incoming construction and operational workforces (and their families) will require infrastructure and services to be provided. Given the overall levels of population increase and the availability of existing accommodation and housing stock, there is unlikely to be any additional community infrastructure or services required to cater for the incoming population.

The incoming workforce, especially the operational workforce and their families are anticipated to increase overall participation in local community life through volunteering, schools, sporting and community groups and informal social networks. These broader influences within the wider community are discussed further in relation to community sustainability in **Section 5.2.6**.

5.2.4 Economic Impacts

The positive economic impacts associated with the presence of United and Wambo in the region were raised consistently by landholders and regional stakeholders during consultation. Key benefits were identified as the generation of local employment, opportunities for local commercial contracts, social investment (i.e. funding for community groups, programs and/or infrastructure, as well as work in kind or volunteering programs) and flow on effects of existing and continued employee and supplier expenditure.

These perceptions are supported by findings from the TRC-Analysis completed for the SIOA (refer to **Appendix A**) which identified strong positive economic benefits and other socio-economic linkages between the Project and wider communities and geographic centres. Extrapolating from the TRC Analysis, an increase of 250 operational roles, whether or not the workforce is hired locally, is equivalent to an approximate spend of \$9.21 million annually, as shown in **Table 5.14**. Note that this is workforce spending only and is exclusive of the operational mine expenditure.

Table 5.14 Anticipated additional employee expenditure⁷

	Existing total workforce spend (Million dollars)	Calculated - Additional operational workforce spend (Million dollars)	Calculated – total project operational workforce spend (Million dollars)
Singleton	\$3.50	\$2.43	\$4.86
Maitland	\$2.88	\$2.00	\$4.00

⁷ Note that 250 personnel are coming across from existing to Project operations and as such total Project operational workforce spend is not equivalent to the sum of existing plus additional workforce spend.

	Existing total workforce spend (Million dollars)	Calculated - Additional operational workforce spend (Million dollars)	Calculated – total project operational workforce spend (Million dollars)
Newcastle	\$2.33	\$1.62	\$3.24
Cessnock	\$1.77	\$1.23	\$2.46
Muswellbrook	\$0.60	\$0.42	\$0.84
Lake Macquarie	\$0.52	\$0.36	\$0.73
Port Stephens	\$0.43	\$0.30	\$0.59
Other Hunter Valley	\$0.30	\$0.21	\$0.42
Kurri Kurri	\$0.26	\$0.18	\$0.36
Branxton/Greta	\$0.20	\$0.14	\$0.28
Central Coast	\$0.19	\$0.14	\$0.27
Other	\$0.14	\$0.10	\$0.20
Sydney	\$0.11	\$0.07	\$0.15
Online	\$0.02	\$0.01	\$0.03
Total	\$13.26 M	\$9.21 M	\$18.41 M

Economic assessment of the Project has been undertaken and is included as Appendix 19 of the EIS. The Economic Assessment concluded, that overall, the Project is expected to generate net benefits and is also expected to generate increased economic activity and employment within the NSW community. The Project will have a positive economic impact for the region and the State of NSW.

5.2.5 Sense of Community

Sense of community is a psychological concept related to the experience of community over and above the structure of a community; people's perception and understanding about how they relate to a given group. Coakes (1995) discusses many different elements of sense of community including the need for shared value, social interaction and connection to a common structure (e.g. geography, gender, culture). Changes to a sense of community can come about through many factors, including population changes as well as changes to land uses, such as development of mining operations like the Project.

Large scale population changes can have significant impacts to the sense of community within a particular place (Burge 2004). In the current Project context, it is considered that the level of population change associated with the Project is not large enough to substantially impact the sense of community within the neighbouring localities or within the wider LGA or region. Nonetheless, there may be smaller changes that are only noticeable at a micro level of analysis. For example, the highest impact scenario modelled in

Section 5.2.1, where there is a total of 875 persons moving into the region, would result in significant informal contribution to local community organisations and schools, in addition to use of infrastructure. As within **Table 5.15**, extrapolating the results of the TRC Analysis, it is anticipated that there will be up to 174 additional persons within community and/or sporting groups, 598 visits to doctors and other healthcare providers annually, and 186 additional students within education institutions across the Hunter and more broadly. Note that this is a theoretical scenario and can only be considered broadly representative of the potential scale of change across the region should all new employees and contractors move into the area.

Table 5.15 Projected employee family impacts/contributions

	Number of additional workers and/or family members participating in sport and/or community groups	Number of additional healthcare attendances by workers and families	Number of additional persons within education facilities of workers' household/ children
Singleton	52	185	37
Maitland	39	144	46
Cessnock	21	86	16
Newcastle	18	81	19
Hunter Valley	12	11	7
Muswellbrook	4	26	4
Lake Macquarie	7	21	13
Other	21	44	42
Total	174	598	186

At a more local level, each of the localities profiled has an individual sense of community. A sense of community within each locality was garnered through the interviews, and consideration of the different values people have for the area across different community capitals - social, economic, natural, human and physical capitals.

5.2.5.1 Jerrys Plains

Jerrys Plains has a defined sense of community as a regional village within the Singleton LGA, and is recognised as such through its inclusion within the Singleton Council Villages Planning Study (2014). Highly valued aspects of Jerrys Plains noted by interview participants included:

- Jerrys Plains School, as a significant local hub
- the heritage of the town as an agricultural centre, including the equine and dairy industries
- the surrounding landscape, between the escarpment into Wollom National Park and the Hunter River

- agricultural production values of river flat lands
- the relationships between residents and the small town atmosphere
- community facilities in the town, including the School of Arts hall, playground, tennis courts and CWA park, as well as commercial facilities such as the service station, tavern, vet clinic and previously the post office.

Alongside the civic pride felt by many of the Jerrys Plains interviewees, there were two negative aspects noted, being a perception of parochialism in the town and a residual division originally caused by differences of opinion in relation to the proposed development of the Doyles Creek mine. The parochialism discussed with some interviewees is summarised in the sentiment that ‘unless your parents were born in Jerrys Plains you’ll never be a local’, with this being perceived as a sense of division within the town between people who have been there a long time and new comers to the area. Some interviewees also lamented relationships broken during the proposal processes of Doyles Creek mine, which ceased following the cancellation of the exploration licence owned by NuCoal, due to identification of corruption by the Independent Commission Against Corruption (ICAC).

In relation to the Project, many interview participants were both apprehensive and hopeful about the role of Glencore in the community. Residents are familiar with mining impacts and many interviewees either worked in the mining industry, were related to someone who worked in the industry, or were hopeful of gaining employment within the industry. Some interviewees expressed a hope for a mutually beneficial relationship should the Project proceed, and this is considered a key opportunity for Glencore as discussed further in **Section 5.4**.

5.2.5.2 Warkworth

As noted in **Section 3.8**, the locality of Warkworth has been in decline as a rural community locality over the last decade as long term residents have left, community needs have changed and owner occupied dwellings have been progressively purchased due to nearby mining activities. Key aspects of identified community value that remain in the locality include:

- St Phillip’s Anglican Church, which hold a fortnightly service
- Warkworth Community Hall, where irregular events are held, such as the annual Christmas Carols service
- the Jim Johnstone oval and rest area
- the privately operated Hunter Valley Gliding and Shooting Clubs.

Interviews with landholders and other stakeholders in the area indicate that there is not a cohesive sense of community within Warkworth at the current time. However, the locality still holds significance to many previous residents and their families who now live elsewhere. This nostalgic significance of Warkworth is not anticipated to be significantly impacted by the Project. The predicted noise, dust and blasting impacts to Warkworth may change the overall levels of residence occupation in the locality, however it is considered that this will not substantially change the value of the area to non-residents. In addition, while the locality will be impacted, it is not anticipated to be of such a magnitude to require the closure or cessation of current activities at the church, community hall or oval.

It is also noted that significant noise and dust impacts are currently experienced in Warkworth, and additional incremental impacts are predicted for the locality as a result of the recently approved Warkworth Mine Extension Project.

Recognition of the value of Warkworth to previous residents is considered an opportunity for the Project as discussed further in **Section 5.4**.

5.2.5.3 Maison Dieu

As a satellite community to Singleton town, separated from the Project by the Hunter River, it is not anticipated that the Project will have any significant impact on the sense of community in Maison Dieu. Key values in the locality include:

- Current and past dairying industry. The specific characteristics of the locality mean that there is a purity of water quality, ensuring that dairying activities located in the area are certified as Johnes disease free by an approved veterinarian on an ongoing basis, which is of significant economic and industrial value to the wider dairy industry in NSW and Australia
- The wider agricultural production values and history of the locality, especially on river flat lands.

Being located nearby Rix's Creek, Hunter Valley Operations and Mount Thorley Warkworth mines means that residents are familiar with mining activities and the Project is not anticipated to significantly change these values.

5.2.5.4 Bulga/South Wambo

The few residents within the Bulga/South Wambo locality interviewed noted a previous sense of community with Warkworth that has since declined due to reduced access across the now Wambo site. Key values noted include:

- the RFS and other facilities within Bulga town
- the pastoral and agricultural values of landholdings
- importance of river water through Wollombi Brook.

As a significant landholder in the locality, Wambo, including the underground operations that are not part of the Project, is an important community member and consultation with the residents in the Bulga / South Wambo region is ongoing. It is considered that the Project will not significantly impact the sense of community within Bulga / South Wambo as there will be little substantive change in impacts for neighbouring and nearby residents, and the sense of community is strongly linked to the township of Bulga, which is unlikely to be significantly impacted by the Project, although there may be opportunities for mutual benefit that arise out of the Project as discussed further in **Section 5.4**.

5.2.5.5 Impacts to archaeological and historical heritage

As part of the EIS for the Project an Aboriginal Cultural Heritage Assessment, Aboriginal Archaeological Values Assessment and a Historic Heritage Assessment were undertaken. As a result of the survey and test excavation results, the majority of sites (95 per cent of all 128 sites) have been assessed as having low scientific significance. In most cases this is because the sites are low density artefact scatters or isolated finds located in landforms with thin A horizon soils where further subsurface archaeological deposits are unlikely. (Oz Ark, 2015). The Aboriginal Cultural Heritage Assessment (ACHC, 2016) found that the

surrounding area is of higher significance to many members of the Wonnarua community, however, the sites and/or places within the Project Area were considered to be of lower significance.

In terms of historic heritage, there are a few notable structures in the locality of particular historic / heritage value. For example the Wambo Homestead, currently owned by Wambo, is listed on the NSW State Heritage Register. Management of Wambo Homestead has been accounted for as part of existing operations and impacts, and there are no foreseeable changes to this arrangement through the Project. In addition, part of a historic 'dog-leg' fence which is partially located within the Project Area will be removed as part of the Project. Management and mitigation actions and opportunities for future conservation are discussed further in **Section 5.4**.

Some interviewees noted the local significance of Wambo Homestead, the dog-leg fence and other structures, but did not consider that potential impacts due to the Project as highly significant.

Overall in relation to the sense of community within each of the localities, it is considered that there is a perception that the Project may provide opportunities for improvement to the sense of community, largely driven by opportunities in Jerrys Plains. As such the stakeholder perceived impact is considered *medium (positive)*. This potential for benefit is considered to be possible to actualise through the ongoing development of a mutually beneficial relationship with neighbouring landholders and the township of Jerrys Plains, and as such is considered to also have a technical 'risk' of *medium (positive)* as outlined in **Table 5.16**.

Table 5.16 Summary of Project impact – Sense of Community

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Sense of Community	Local area Singleton LGA	Local residents Wider community	Medium (positive)	Medium (positive)

5.2.6 Community sustainability

As defined by Hempel (1999), a sustainable community is one in which:

"...economic vitality, ecological integrity, civic democracy, and social well-being are linked in a complementary fashion, thereby fostering a high quality of life and a strong sense of reciprocal obligation among its members."

Given the differences between the four main localities that comprise the study as outlined in **Section 3.0**, it is necessary to contextualise community sustainability through a discussion of the key points as they relate to each location. Analysis conducted as part of the SIOA has indicated the following:

- Jerrys Plains is the most internally sustainable community of the neighbouring localities, with a fairly stable economic base in the mining and agricultural industries, with low unemployment and living costs. Home ownership and residential mobility levels were in line with NSW levels. Community participation levels (volunteering) were higher than NSW averages, and post secondary education levels were over a third higher than the NSW average. Based on this, Jerrys Plains can be considered to have a high level of community sustainability, given the scale of the locality.

- The localities of Warkworth, Maison Dieu are considered to be more closely linked with the broader community sustainability of the LGA and region than with any independent sense of community or sustainability. Bulga/South Wambo is also considered to be more closely linked with the township of Bulga to the south. This is not to hide their importance as rural residential and active farming regions within the Singleton LGA, but to note that their sustainability is closely connected to that of the wider region.
- The wider Singleton LGA is considered to have a substantial level of community sustainability. There is an ongoing importance of the mining industry and active, ongoing development of other industry sectors, combined with a high level of connectedness to the wider region. Potential impacts to community sustainability at this level are considered to be positive at the current point in time, due to the increase in jobs and economic growth.

Consequently, the technical risk to community sustainability as a result of the Project is considered *low*, and the perceived stakeholder risk is also ranked as a *low* as discussed within **Table 5.17**.

Table 5.17 Summary of Project impact – community sustainability

Project Aspect	Geographic scope	Stakeholders impacted	Perceived stakeholder risk	Mitigated technical risk
Community sustainability	Local area	Local Residents Wider community	Low	Low

5.2.7 Cumulative impacts

Much of the discussion in relation to the Project with community stakeholders has been undertaken in light of the cumulative impacts of mining more generally. Given the proximity of the Project and local community to various other mining operations, additional discussion of cumulative impacts is relevant and necessary.

Consideration of cumulative impacts has been ongoing within the locality and broader region for some time. This has led to the development of regional level regulatory frameworks within which the Project fits. These frameworks include:

- adherence to State and Commonwealth Government biodiversity offset policies – providing for offsetting of biodiversity impacts to mitigate cumulative impacts at a regional scale
- the Hunter River Salinity Trading Scheme – to provide for sustainable salt levels in the Hunter River
- Water Sharing Plans for the key water sources with relevance to the Project – to provide for the sustainable use of the State’s water resources and ensure adequate water for environmental flows
- cumulative air quality modelling approaches and the Upper Hunter Air Quality Monitoring Network – to provide data regarding regional dust levels to assist government to make informed decisions about future development and policy related to air quality
- corporate partnerships within the region to encourage skills development and mutually beneficial outcomes across the industry and wider community, including the Upper Hunter Mining Dialogue process

- the Upper Hunter Strategic Land Use Plan, the Synoptic Plan: Integrated landscapes for coal mine rehabilitation in the Hunter Valley – to maintain important agricultural areas and resources
- other regional planning documentation, such as the current draft *Hunter Strategic Plan*.

Given the slowing of the mining sector in the Hunter Valley over the last four years, focus on cumulative social impacts has shifted from housing and infrastructure shortages to capitalising on the strengths of the region, notably the continuing mining sector, to leverage further and diverse economic growth. The current Project therefore provides opportunities for continued economic progress for local areas, such as those neighbouring the Project. Nonetheless, cumulative environmentally induced or social amenity impacts remain significant for those who experience the reality of living in proximity to multiple mining operations, such as in the vicinity of the Project. As such, the stakeholder perceived impact of cumulative impacts is considered to be *medium*.

The development of the Project will contribute to cumulative amenity impacts, many of which are addressed through the wider regional frameworks. The assessed technical risk also ranked as *medium* primarily on the basis of dust, noise, visual and biodiversity impacts, as indicated within **Table 5.18**.

Table 5.18 Summary of Project impact – Cumulative impacts

Project Aspect	Geographic scope	Stakeholders impacted	Perceived stakeholder risk	Mitigated technical risk
Cumulative impacts	Local area Wider region	Local Residents Wider community	Medium	Medium

5.3 Social Impact and Opportunity Assessment Summary

The social risks assessed in **Sections 5.1** and **5.2** are summarised in **Table 5.19** which outlines the Project aspect, geographic scope, impacted stakeholders and mitigated technical risk for each assessed Project risk factor. It is noted that following DPE's Voluntary Land Acquisition and Mitigation Policy (2014), seven significantly noise impacted private residences and one significantly dust impacted residence (also affected by noise) are likely to be afforded acquisition rights as part of any development consent for the Project. The analysis in **Table 5.19** focuses on the impacts on the community outside of the seven residences expected to be granted acquisition rights.

Table 5.19 Impact Assessment Summary

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Dust emissions – impact on social amenity	Local area	Local residents*	High	Medium
Noise emissions – impact on social amenity	Local area	Local residents*	High	Medium

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Visual changes – impacts to social amenity	Singleton LGA	Local residents and Commuters	Medium	Medium
Blasting - impact on social amenity	Local s area Singleton LGA	Residents of Warkworth	Medium	Medium
		Other local residents	Medium	Low
Traffic – impacts on social amenity	Local area	Local residents Travellers	Low	Low
Land management and future land use	Local area Singleton LGA	Local Landholders and Other Land users Regional stakeholders Other mine sites	Medium	Low
Impact on Ecological values	Local area Singleton LGA Hunter region (bio-region)	Local residents Regional stakeholders Environmental NGOs Government agencies	Low	Medium
Impact on Water (ground and surface)	Local area Singleton LGA Hunter Catchment Hunter Region	Local residents Water users Wider community	Medium	Low
Greenhouse gases	National	Residents Business Government	Low	Medium
Population Change	Singleton LGA Wider region	Regional stakeholders	High (positive)	Low
Housing and Infrastructure	Singleton LGA Wider region	Regional stakeholders	Low	Low

Project Aspect	Geographic scope	Stakeholders impacted	Perceived Stakeholder risk	Mitigated technical risk
Sense of Community	Local area Singleton LGA	Local residents Aboriginal stakeholders Wider community	Medium (positive)	Medium (positive)
Community sustainability	Local area	Local Residents Wider community	Low	Low
Cumulative impacts	Local area Wider region	Local Residents Wider community	Medium	Medium

* Note: Excludes residences that are expected to be granted acquisition rights.

5.4 Management and Mitigation

This section provides a summary of the predicted social impacts/risks associated with the Project, in particular those that have been rated as a medium (or greater) impact in **Section 5.0**. The Project will negotiate a Voluntary Planning Agreement (VPA) with Singleton Council which will afford opportunities for the Project to contribute to programs designed to improve or address local community issues and perceived impacts through financial contributions to Singleton Council. Local community improvements have been highlighted in the Singleton Council Community Strategic Plan 2014, and further discussion will be held around prioritising the use of contributions in local areas around the project, as well as in the broader LGA.

The existing United Stakeholder Engagement Plan will be revised to incorporate the social strategies and management actions proposed to be implemented as part of the Project and will guide the implementation and evaluation of the social aspects of the Project and other United activities. The Stakeholder Engagement Plan will also be revised to include a framework to monitor the effectiveness of the proposed strategies in mitigating negative social impacts and/or enhancing positive social impact over time.

Table 5.20 summarises the key strategies that are recommended for United to implement, in order to address key impacts associated with the Project.

Table 5.20 Summary of strategies to address Project related impacts

Impact / Opportunity area	Strategies
Air quality (dust)	United will develop and implement an Air Quality Management Plan for the Project. The Plan will outline the range of proactive and reactive dust control strategies to be implemented as part of the Project. The controls to be implemented include the following key measures: • Proactive air quality management involving the planning of activities in advance of potentially adverse conditions, including: ○ implementation of a system to provide relevant personnel with a daily forecast of expected dust conditions in the vicinity of the operation ○ discussion of the weather conditions and dust considerations at daily pre-shift meetings ○ modifying the planned mining activities, as appropriate, to minimise dust impacts. • Reactive air quality management measures including modification or suspension of activities in response to identified triggers including: ○ visual conditions, such as visible dust from trucks above wheel height. Visual conditions will be established from both observations by site personnel and from a camera network to be established on site to cover the main dust sources of the operation ○ meteorological conditions, such as dry, windy conditions, with winds blowing towards sensitive receptors ○ ambient air quality conditions (that is, elevated short-term PM₁₀ concentrations). • Development of an Air Quality Monitoring Program for the Project that supports the proposed proactive and reactive air quality management system. The monitoring program will be designed to allow evaluation of the effectiveness of the air quality management system and compliance with air quality operating conditions. United will implement Glencore blasting procedures relating to fume management as part of the Project, including a pre-blast review of weather conditions so as to avoid blasting in adverse conditions. A site specific Blast Management Plan will also be developed and implemented during operations. United will develop and implement a Spontaneous Combustion Management Plan for the Project which will provide guidelines for eliminating or minimising the risk of incidents as a result of spontaneous combustion. United will inspect and as necessary clean, drinking water tanks every 2 years for all private residences and Joint Venture owned residences within 4 kilometres of the mining area for the Project. In addition to the measures provided within the air quality impact assessment, it is also recommended that United undertake regular communication with local community regarding air quality measurements.

Impact / Opportunity area	Strategies
Noise	United will develop and implement a Noise Management Plan for the Project. The Noise Management Plan will detail the implementation of monitoring and management controls to be utilised to manage noise impacts associated with the Project. United commits to the implementation of the following key proactive noise management measures: • Incorporation of reasonable and feasible noise attenuation on key items of plant and equipment that will be re-used from the current Wambo Open Cut operations or other controls achieving the same overall noise outcome. • Incorporation of reasonable and feasible noise attenuation measures on new plant and equipment that has the potential to contribute to the Project's noise level. • Using 'silent horns' to communicate with trucks and smart broadband 'Quacker' reversing alarms. • The inclusion of bunds in strategic locations along haul roads, where practicable, to shield trucks and equipment on exposed sections of the haul road ramps. • Locating key haul roads below ground surface or behind topographical features to maximise shielding to surrounding receiver areas, where practicable. • Designing emplacement areas to create sheltered dumping locations that can be used during adverse weather conditions where feasible and practicable. • Managing the drop height of the first load into truck bodies to minimise impact noise from the material. United will implement reasonable and feasible receiver based noise mitigation measures which may include measures such as double glazing, insulation or air conditioning to residences located within the Active Noise Management Zone upon written request. United will implement an appropriate continuous Noise Monitoring Program.

Impact / Opportunity area	Strategies
Visual	To assist in minimising the visual impacts of the Project, United will implement the following controls: • progressive rehabilitation of disturbed areas with a particular focus on overburden emplacement areas, to reduce the duration of visible soil exposure, including the use of temporary rehabilitation as appropriate • subject to the agreement of RMS and relevant landholders, additional roadside tree planting will be undertaken along the existing Golden Highway to screen views of the Project • incorporation of roadside tree planting into the detailed design for the realigned section of the Golden Highway to assist in screening views of the Project from the road • consultation will be undertaken with potentially affected landholders in the Moses Crossing and South Wambo areas regarding the potential for additional tree screening / landscaping to minimise the visibility of the Project • ongoing management of mobile lighting to reduce the impacts of lighting at night, positioning lights so they are not pointing off site, and are shielded by walls, overburden emplacement areas and/or vegetation where practicable. • all fixed lighting associated with the Project will be installed and maintained in accordance with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.
Blasting	A series of onsite and other management protocols will be observed as per Appendix 10 of the EIS. In addition to these, management practices that may impact the general community will include periodic road closures as discussed within Section 6.7.6 of the EIS. United will offer all private landholders located within two kilometres of the Project extraction areas a property inspection prior to the commencement of blasting for the Project in order to establish the condition of private structures. It is also recommended that United implement a blast notification process so that the community can stay informed of upcoming blasts.
Traffic and road safety	United will prepare a detailed concept design for the proposed realignment of the 2 kilometres section of the Golden Highway west of Comleroi Road, in consultation with RMS. United will prepare a detailed concept design for the proposed intersection of the Golden Highway realignment and Comleroi Road, in consultation with RMS and Singleton Council. The realigned section of the Golden Highway will be constructed prior to closure of any section of the Golden Highway. United will prepare and implement a Construction Traffic Management Plan prior to construction of the Project commencing to minimise the effect of construction related traffic and works on the Golden Highway realignment.

Impact / Opportunity area	Strategies
Land management	In order to minimise impacts on agricultural resources and to promote sustainable landscape management, the following practices are recommended: • management strategies for feral animals and noxious as will be detailed in a Biodiversity Management Plan for the Project • fit for purpose boundary fencing between mine owned lands and properties • continued engagement with local communities with regard to land management practices. Should actively farmed properties be acquired, such as those to the north of the Project Area, it is recommended that tenants that have an interest in actively and sustainably farming the land be more highly considered. For properties that are mine owned, it is recommended that where practicable in light of predicted impacts, residences remain occupied with lands sustainably managed in order to minimise opportunity for weed and pest impact and to maximise agricultural productivity. As rehabilitation of the site progresses, it is recommended that agricultural land is incorporated into the final land use strategy, where practicable. Two voids will be left upon completion of the Project. It is recommended that final land use options (including voids) be considered in consultation with community needs. Specifically, it may be of use to provide case studies of use of final voids from other completed projects.
Other environmental impacts	A number of measures will be incorporated in the Project design and management plans to minimise impacts to groundwater and surface water, greenhouse gases, heritage and biodiversity as described within Sections 6.0 and 8.0 of the EIS.
Heritage	The Dog-leg fence will be subject to a detailed survey and photographic/archival recording in accordance with Heritage Division, OEH guidelines <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (2006) prior to any impact as a result of the Project. In addition to the detailed recording, an interpretation strategy will be developed for the Dog-leg fence. United will update and implement an Aboriginal Cultural Heritage Management Plan for the Project. The Plan will be prepared in consultation with the RAPs and will include the Aboriginal Cultural heritage management measures to be implemented as part of the Project. These management measures will be based on the proposed measures outlined in the EIS. Salvage (excavation, analysis and collection) of the 128 sites to be impacted by the Project will be undertaken as per the recommendations of the Archaeological Values Assessment Report.

Impact / Opportunity area	Strategies
Population change	It is unlikely that the Project will have a significant impact on population change and consequently the capacity of existing infrastructure or provision of services in the surrounding localities, as such no mitigation measures have been proposed.
Engagement practice	It is recommended that United continue to engage proactively with the neighbouring and wider community. Methods preferred by interview participants include: • regular updates via email or website • phone contact where applicable • regular community information sessions /BBQs. Content of ongoing consultation activities has been requested in relation to: • employment opportunities and processes • anticipated and actual impacts experienced locally • meeting notices • updates on general operations. It is also recommended that minutes and other relevant materials from Community Consultative Committee (CCC) meetings be actively shared.

A number of opportunities exist that may have positive effects on the local communities surrounding the Project Area (refer to **Section 5.2** for further detail). These areas of opportunity will be reviewed and considered for implementation as an outcome of the Voluntary Planning Agreement process or as part of the Stakeholder Engagement Plan. Opportunities including those identified by local residents and the relevant mechanism for evaluation are presented in **Table 5.21**.

Table 5.21 Areas of Community Contribution Opportunity

Opportunity	Relevant Mechanism for Evaluation
Jerrys Plains	
Effluent dumping facility for recreational vehicles.	VPA
Youth services, such as sports and school programs.	Glencore community involvement program
Ongoing engagement and curriculum development with Jerrys Plains School, such as school excursions of nearby mine/Project operations.	Glencore community involvement program
Improving public spaces, including beautification of the main streets, funding for playground equipment, shade and seating in parks.	VPA

Opportunity	Relevant Mechanism for Evaluation
Community service infrastructure and facilities, including measures such as the reinstatement or other beneficial use of the post office, sewer line connection, weather station.	VPA
Provision of a medical service (such as a nurse who does weekly visits, or installation and maintenance of an Automatic External Defibrillator – AED in an accessible location).	Glencore community involvement program
Offering of community courses (such as first aid or fire safety).	Glencore community involvement program
Installing town signage.	VPA
Regular cleaning of dust impacted water tanks for nearby residences.	United has committed to undertake this as discussed in Section 6.19 of the EIS.
Ongoing community BBQs.	SEP
Warkworth	
Contribution to maintenance of Jim Johnstone oval.	VPA
Maintenance of Warkworth community hall.	VPA
Development of a booklet that documents the history and heritage of Warkworth to be kept in the Singleton Library, so that important stories and heritage of Warkworth are not lost.	SEP

6.0 Monitoring and Evaluation

A key aspect of any social impact assessment is the development of a framework to monitor a project's impact over time – often referred to as a social impact management plan. United will collect social data to monitor commitments made in the social impact assessment namely:

- Key areas of predicted Project impact, including:
 - o perceived and experienced social impacts, through consultation with neighbouring and other nearby landowners, to monitor if experienced impacts are in line with predicted impacts
 - o periodic review and evaluation of management practices on mine owned land, including buffer land around the Project.
- Changes in the local social and economic context through the collection of relevant census and social indicator data at appropriate levels of analysis across the study areas
- Monitoring of the social and economic contributions of the operation in the community through recurring implementation of workforce and supplier surveys (e.g. TRC-Analysis):
 - o It is also recommended that a follow up survey of the new operational workforce be undertaken to determine the workforce flows of local and incoming workers to the site, in order to inform future assessments.
- Evaluation of actions and investments to assess the outcomes of key projects and programs arising from:
 - o Commitments made within this SIOA
 - o Any wider community development or partnership programs at an operational or corporate level
 - o Voluntary Planning Agreement (VPA) for the Project.
- Development of a program for monitoring any other social impacts predicted in the current assessment and identification of any unforeseen social impacts, should they occur
- Consideration of SIOA outcomes in the preparation of the site specific engagement strategy so that relevant stakeholders, including neighbouring and nearby landholders, are properly informed regarding current and future operations.

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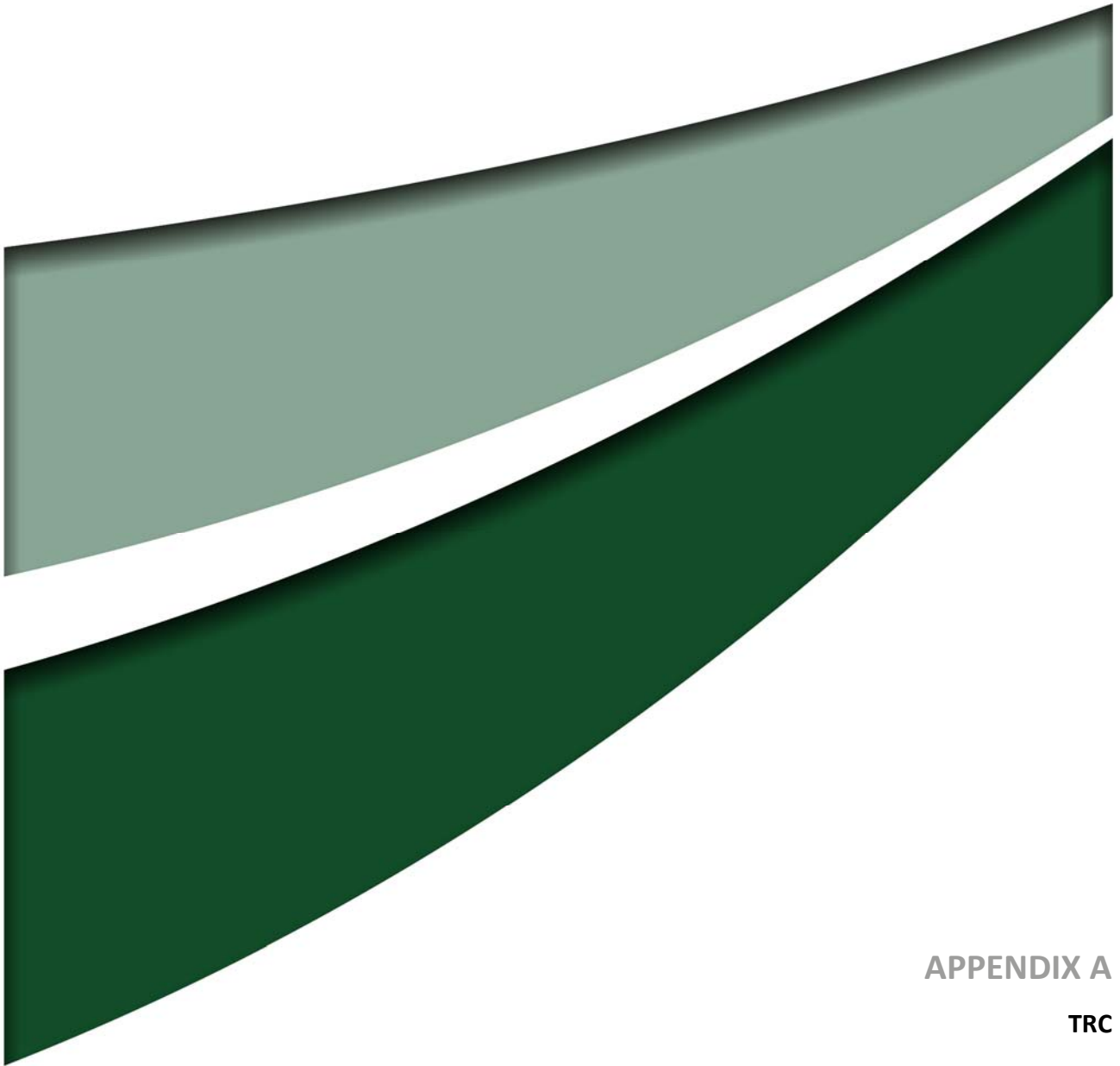
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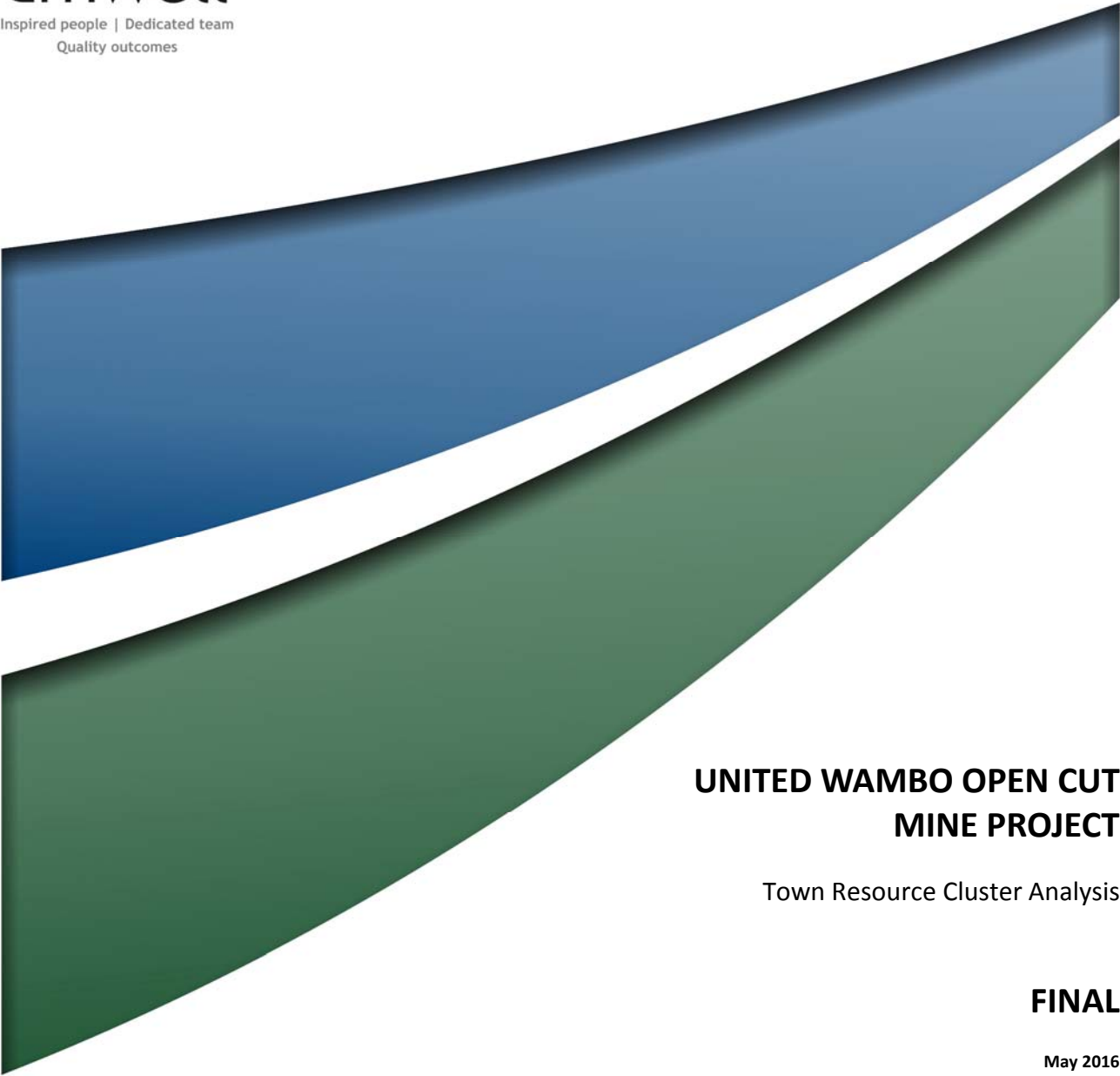
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APPENDIX A

TRC



UNITED WAMBO OPEN CUT MINE PROJECT

Town Resource Cluster Analysis

FINAL

May 2016

UNITED WAMBO OPEN CUT MINE PROJECT

Town Resource Cluster Analysis

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
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Quality Management System.

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1.0 Introduction

To determine the potential social impacts of the United Wambo Open Cut Coal Mine Project (the Project) on the Singleton and surrounding area, Umwelt (Australia) Pty Limited (Umwelt) was commissioned to undertake a Social Impact and Opportunities Assessment (SIOA) for the Project. This report presents the findings of the Town Resources Cluster (TRC) Analysis component of the SIOA.

Town Resource Cluster Analysis (Fenton, Coakes, and Marshall, 2003) uses detailed workforce survey data to assess the socio-economic linkages that exist between natural resource projects and communities through direct (e.g. employment) and indirect contributions (e.g. employee household expenditure and use of services) of the company's current operations and the proposed project. These contributions or impacts are experienced not only in areas close to an operation but also some distance away. For example, communities in other regional locations or other states may experience some benefit from a mining project through indirect flow-on effects, such as employee household expenditure (e.g. spending occurring in regional centres) or employment by suppliers to the project (e.g. if a large supplier has its main office and employs many staff in another location).

This report summarises TRC findings relating to the United and Wambo's operations generally, and draws upon workforce data gathered from employees across United and Wambo's operations.

1.1 Method

The data for undertaking the TRC analysis was obtained via surveys of United and Wambo employees and contractors; hereafter referred to as the workforce.

1.2 Survey Development and Implementation

The employee survey was comprised of 31 questions designed to capture:

- number of employees
- town of residence
- annual household expenditure
- use of health services
- attendance at education facilities
- participation in community activities and groups.

The employee survey was provided as an electronic copy and distributed internally as a hard copy to the United and Wambo workforce. The survey was completed during working hours (e.g. during shift changes) and survey responses were received as hard copies.

The supplier survey consisted of 18 questions relating to:

- location of suppliers' head and local offices
- number of supplier employees
- business expenditure by suppliers
- suppliers' estimated business reliance on the United and Wambo operations.

The supplier survey was undertaken online, with a link and instructions provided to 220 supplier organisations that currently service the United and Wambo operations.

1.3 Participants and Sampling

As shown in **Table 1.1**, 319 (70 per cent) of the total 458 workforce completed a survey. In addition, 111 (31 per cent) of the 360 suppliers to United and Wambo also completed a supplier survey, achieving large sample sizes relative to total employee and supplier numbers and reliable datasets with low error margins.

Statistics Summary:

A **Population** refers to an actual group of persons that the survey sample is representing. The two 'populations' of the current report refer to all the employees and contractors at United / Wambo, and to all the suppliers to United / Wambo.

A **sample** refers to a given subset of the population that is being analysed. In this case the sample is all the survey respondents.

The **Confidence Level** refers to how confident you can be that results measure what they claim to measure and are *reliable*.

An **Error Margin** refers to *how accurate* the measurement actually is.

For Example:

If 70% of participants in a survey (a **sample**) respond 'yes' to a question, and there is a **confidence level** of 95 per cent, and an **error margin** of 6 per cent; we can say that *we are 95 per cent sure that 64 to 76 per cent of the whole **population** would answer 'yes' to that question.*

Additionally, to present a **number** that represents the population (instead of a **percentage**) we can **estimate missing data** by extrapolating the average of survey results.

For the current report a multiplier of **1.4357** has been used to extrapolate from the total **employee sample** to the **population** i.e. 319 (the sample) x 1.4357 = 458 (the population).

Table 1.1 Sample Characteristics

	Sample	Population	Representation	Error margin (95 per cent confidence) ¹
United Employees	5	8	63%	+/- 28.69%
Wambo Employees	247	350	63%	+/- 3.39%
Contractors to Wambo	56	100	56%	+/- 8.73%
Missing	11	-	-	
Total Employees	319	458 ²	70%	+/- 3.03%
Suppliers	111	360 ³	31%	+/- 7.75%

1: An error margin of under 10 per cent is generally considered to be a sufficiently high response rate within social research.

2: Based on employee numbers supplied by United and Wambo.

3: Based on supplier lists supplied by United and Wambo.

Explanatory notes regarding statistical terms and calculations informing the analysis are included in the Sidebar on the previous page for further reference.

2.0 Results

2.1 Employees and Contractors

2.1.1 Profile

Table 2.1 summarises the key characteristics of the United and Wambo workforce, based on survey data. Most employees were employed full time (84.3 per cent), and the average length of time working for the United and Wambo group was 5.29 years.

Almost two-thirds of employees (73 per cent) were married, and 15 per cent of workers were single. Workers' wages and combined household income is discussed in **Section 2.1.3**.

Further characteristics of the overall Wambo and United workforce are summarised in **Table 2.1**.

Table 2.1 Characteristics of Employees

Characteristics	Survey percentage (%) or number (#)
Employment status	
Permanent full-time	84.3 %
Permanent part-time	0.6%
Casual	11.9%
Length of time working for the mining industry	
Mean (years)	12.9
Length of time working for United and Wambo	
Mean (years)	5.29
Employed previously in the mining sector	
Percentage	81.8%
Highest level of school education	
Year 10 or below	54.5%
Year 11	14.4%
Year 12	31.1%
Not specified	2.2%
Additional qualifications	
Trade/TAFE certificate	56.7%

Characteristics	Survey percentage (%) or number (#)
Degree/ Diploma	21.2%
Other	5%
Not Specified	17.1%
Proportion that relocated to the area to work with United and Wambo	
Percentage	28.3%
Home ownership	
Has a mortgage	63.3%
Renting	15.4%
Owns the property	16.9%
Other	0.6%
Not specified	3.8%
Length of time in town or suburb of residence	
Mean (years)	18.26
Median (years)	10
Number of people in household	
Mean number of people	3.5
Proportion of single males in sample	
Percentage	14.2%
Family structure	
Married	73%
Single	15.4%
Divorced	4.7%
Separated	2.8%
Widowed	0.9%
Not specified	3.1%

2.1.2 Town of Residence

The United and Wambo workforce live in a number of locations surrounding the operations (refer to **Table 2.2**). As presented in **Table 2.2** and **Figure 2.1**, most respondents lived in or near Singleton (24 per cent), followed by Maitland (23 per cent), Cessnock (13 per cent) and Newcastle (11 per cent).

Table 2.2 Employee's Town of Residence Based on Survey Data

	Employees		Contractors		All Employees*	
Singleton	61	21%	11	4%	72	25%
Maitland	57	19%	9	3%	66	23%
Cessnock	33	11%	8	3%	41	14%
Newcastle	20	7%	12	4%	32	11%
Hunter Valley	18	6%	2	1%	20	7%
Muswellbrook	15	5%	1	<1%	16	<6%
Lake Macquarie	8	3%	2	1%	10	4%
Port Stephens	5	2%	4	1%	9	3%
Kurri Kurri	3	1%	3	1%	6	2%
Denman	5	2%	-	-	5	2%
Greta	4	1%	-	-	4	1%
Central Coast	4	1%	-	-	4	1%
Dungog	3	1%	-	-	3	1%
Sydney	2	1%	1	<1%	3	1%
Jerrys Plains	1	<1%	-	-	1	<1%
Bulga	1	<1%	-	-	1	<1%
TOTAL**	240		53		293	

* Figures do not total the sample size of n=319 due to some surveys being incorrectly completed.

** Figures do not add up to 100% due to rounding.

Respondents were also asked if they relocated to the area to take up employment with United and Wambo, with 28.3 per cent of the workforce having relocated for this purpose.

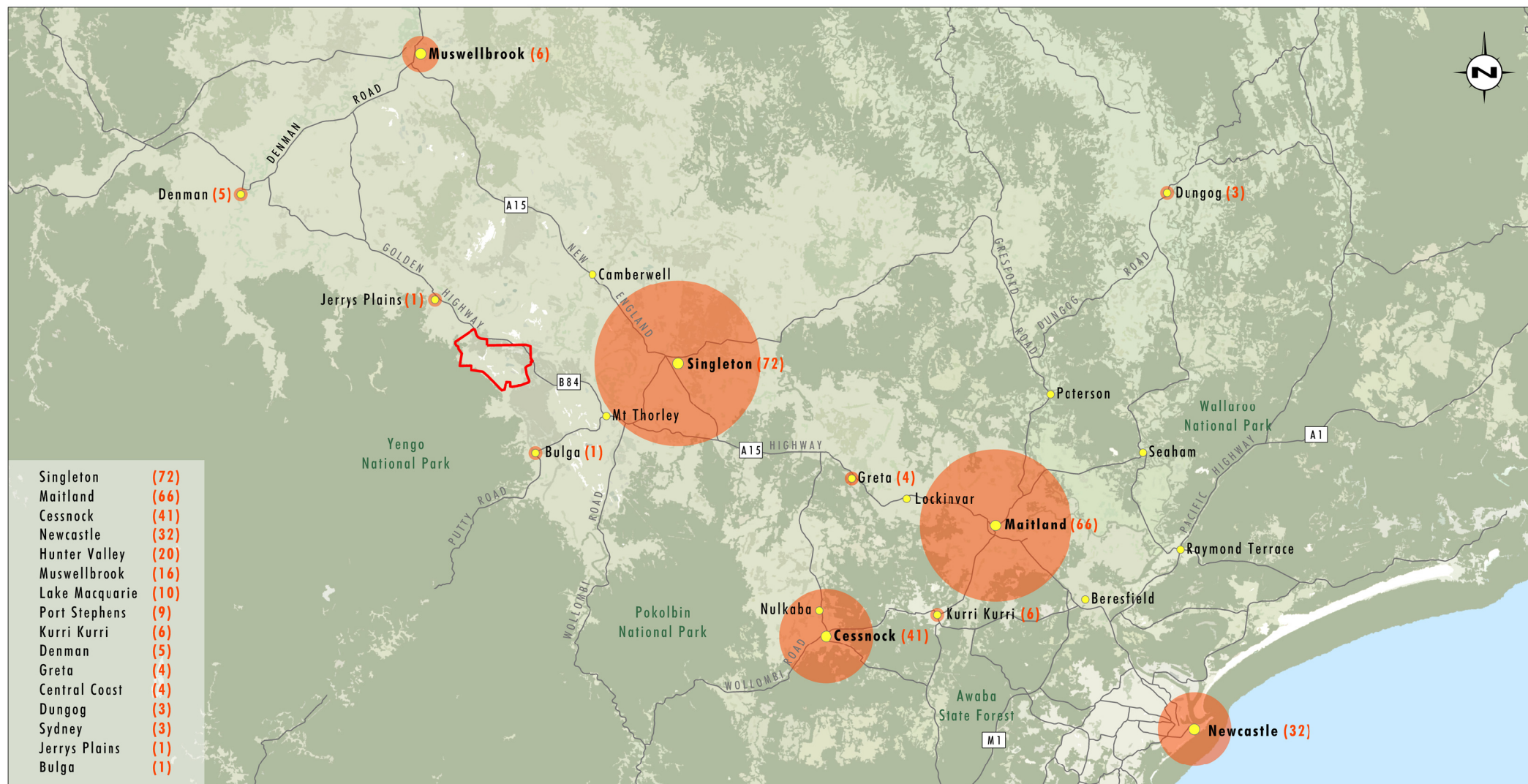


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km

Legend

- Project
- Number of Employees

FIGURE 2.1

Employee Town of Residence

2.1.3 Annual Income and Household Expenditure

2.1.3.1 Household Income per Week

Survey respondents were asked to estimate their annual personal income before tax, and their annual total household income before tax. The median personal income per year was \$126,500, and the average was \$131,671. When asked if there was anyone else in their household who earned an income, 58 per cent of workers reported additional household members in the workforce, with a median income per household of \$180,000. The average household income was \$181,933.

2.1.3.2 Household Expenditure by Location

Survey respondents were asked to identify the locations in which they spend money on household goods and services, and then estimate the proportion of their spending that occurs in each town. Using this information, combined with estimates of household income described in **Section 2.1.3.1** and level of household expenditure provided within the ABS (2010) *Household Expenditure Survey 2009-2010*, the amount of employee household expenditure occurring in each location can be calculated.

Household expenditure of the United and Wambo workforce was estimated using reference to the ABS Household Expenditure Survey, which ranks all households by income, and then categorises these into five equal groups, or quintiles, each comprising 20 per cent of the population. Average weekly expenditure is provided for each quintile. All employee household incomes were within the fourth and fifth income quintiles. Expenditure for employees within the fourth quintile was \$1,279 and within the fifth quintile was \$1,603 (ABS 2010). This expenditure excluded some items that had no connection to the local economy, such as housing costs.

Respondents' estimates of the percentage of spending occurring in each town were then used to extrapolate an estimated total employee expenditure on household goods and services per town. Results for each town and total extrapolated employee income are presented in **Table 2.3** and **Figure 2.2**.

Total household expenditure was highest in Singleton, Maitland, Newcastle and Cessnock which together accounted for approximately \$10.48 million or 79 per cent of spending estimated for all employees.

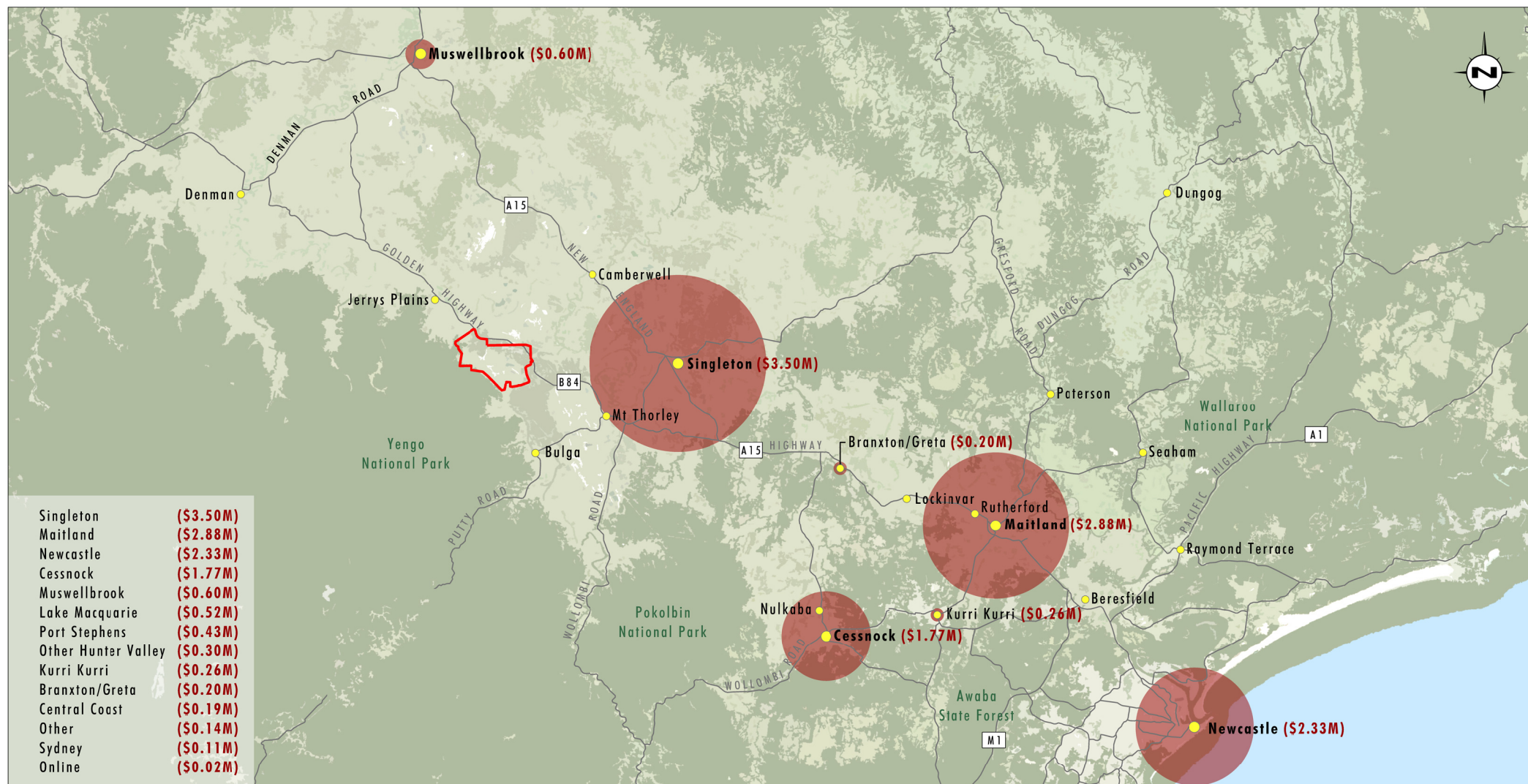


Image Source: Google Earth (2015)
Data Source: United (2015)

Legend

- Project
- Total Employee Household Expenditure

FIGURE 2.2

Employee Household Expenditure - \$Million

Table 2.3 Total Employee Household Expenditure by Location

Location	Sample Household Expenditure (\$ million)	Total Household Expenditure (\$ million)
Singleton	\$2.44	\$3.50
Maitland	\$2.01	\$2.88
Newcastle	\$1.63	\$2.33
Cessnock	\$1.23	\$1.77
Muswellbrook	\$0.42	\$0.60
Lake Macquarie	\$0.36	\$0.52
Port Stephens	\$0.30	\$0.43
Other Hunter Valley	\$0.21	\$0.30
Kurri Kurri	\$0.18	\$0.26
Branxton/Greta	\$0.14	\$0.20
Central Coast	\$0.14	\$0.19
Other	\$0.10	\$0.14
Sydney	\$0.07	\$0.11
Online	\$0.01	\$0.02
Total	\$9.23	\$13.26

2.1.4 Household Participation in Community Groups and Activities

Employees were asked to identify how many people in their household participated in social, sport, hobby, or local community groups and activities. Approximately 58 per cent of respondents indicated that at least one member of their household participated in such activities or groups. These respondents were then asked to identify the nature and location of these activities.

Table 2.4 and Figure 2.3 displays the number of respondents and their family members that participate in community activities and groups, by location. The most common activities related to sport and recreation, and in particular sport and recreation activities that occur in a team or club environment. Singleton and Maitland tended to be the most common locations for activities, which is to be expected given that these are the locations where employees and their families tend to reside.

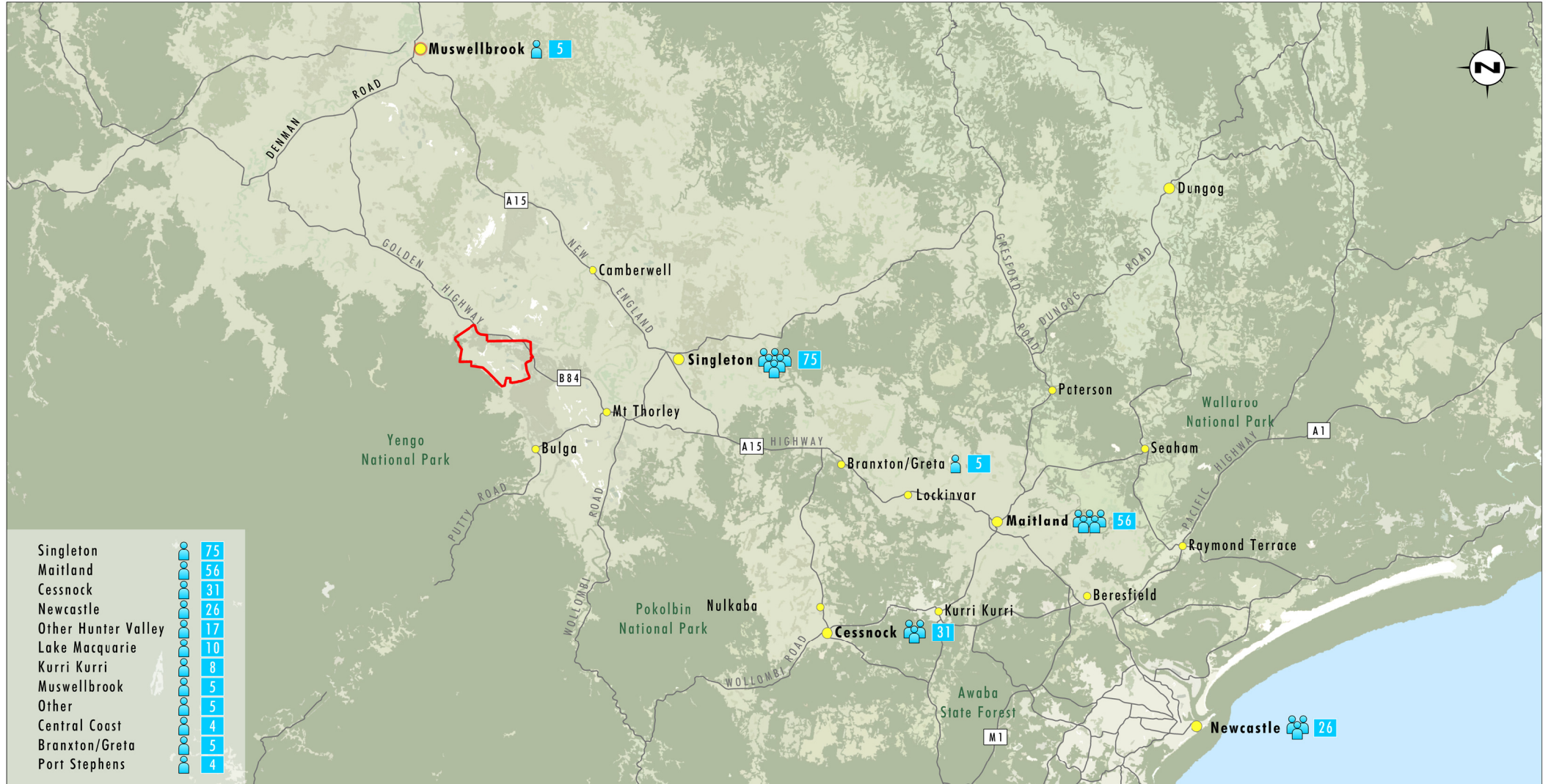


Image Source: Google Earth (2015)
Data Source: United (2015)

Legend

- Project
- 👤 Community Participation (Total Persons)

FIGURE 2.3

Employee Household Community Participation

Table 2.4 Number of Respondents and their Family Members Participating In Activity/Group, By Location

	Sport and recreation	Community groups	Volunteer emergency services	Other	Youth/school groups	Arts and culture	School parents' association
Singleton	60	4	4	-	3	2	2
Maitland	44	4	1	-	1	2	4
Cessnock	26	1	2	1	1	-	-
Newcastle	18	4	2	-	2	-	-
Other Hunter Valley	17	-	-	-	-	-	-
Lake Macquarie	6	2	-	-	1	-	1
Kurri Kurri	5	-	1	1	1	-	-
Muswellbrook	5	-	-	-	-	-	-
Other	4	-	1	-	-	-	-
Central Coast	4	-	-	-	-	-	-
Branxton/Greta	4	1	-	-	-	-	-
Port Stephens	3	-	-	-	-	-	1
TOTAL	196	16	11	2	9	4	8

2.2 Use of Community Services

2.2.1 Health Services

Employees were also asked to identify the types and locations of health services that they or their family members utilise. As shown in **Table 2.5** and **Figure 2.4**, health services tended to be accessed in the main locations of employee residence, and the most common services accessed included doctors, dentists, hospitals, and physiotherapists.

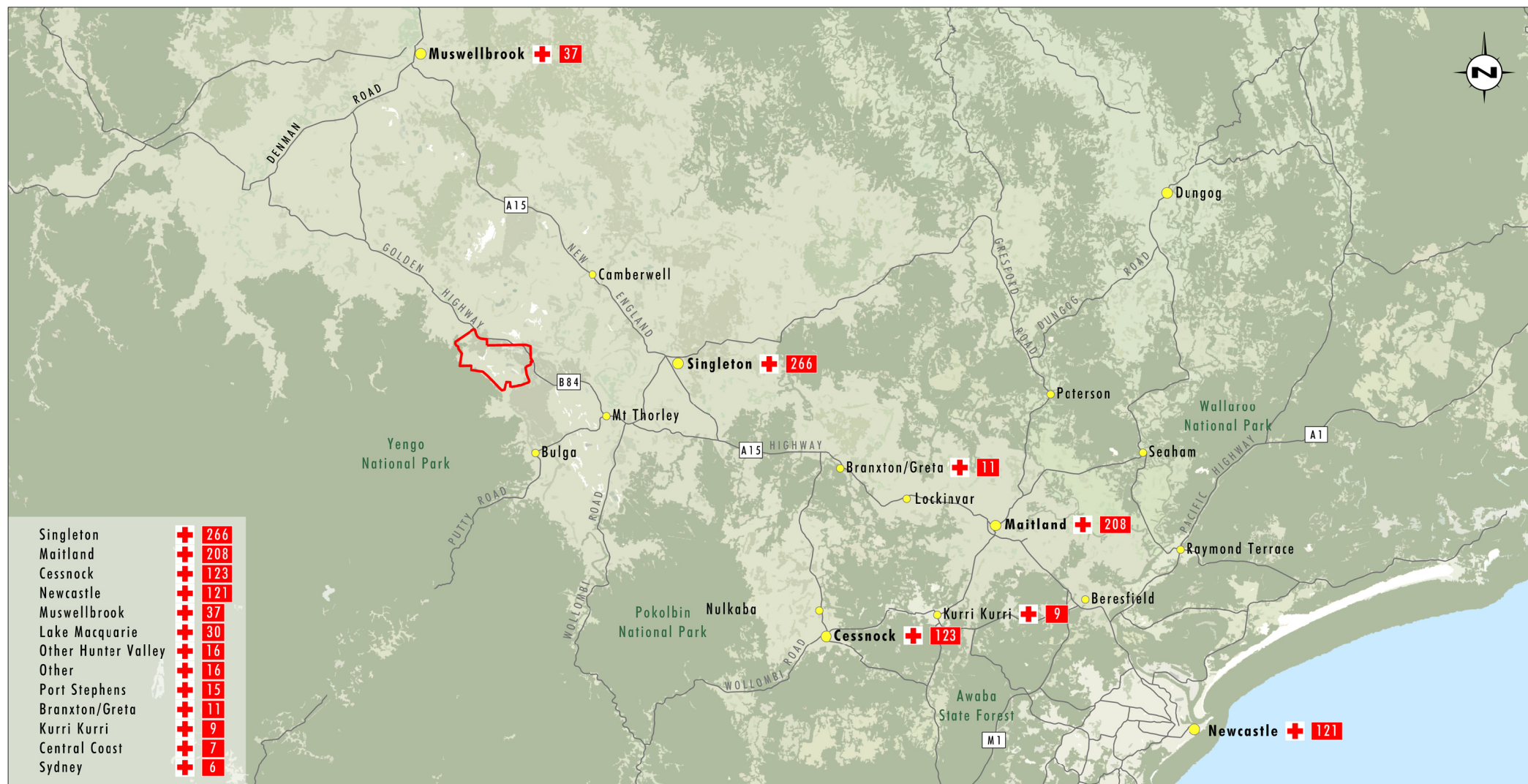


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km

Legend

- Project
- Use of Health Services (Total Persons)

FIGURE 2.4

Use of Health Services

Table 2.5 Number of Employees' Family Members Using Health Services, by Type and Location

	Doctor/GP	Dentist	Hospital	Optometrist	Physiotherapist	Chiropractor	Community Health Centre	Specialist (other)
Singleton	66	60	47	33	32	20	7	1
Maitland	48	53	46	27	15	15	4	-
Cessnock	37	30	21	11	10	11	2	1
Newcastle	27	22	30	10	14	11	2	5
Other Hunter Valley	10	1	2	-	2	-	1	-
Lake Macquarie	15	7	1	4	1	-	1	1
Kurri Kurri	3	3	1	1	1	-	-	-
Muswellbrook	11	9	7	5	3	1	1	-
Other	4	8	1	3	-	-	-	-
Central Coast	2	4	-	-	1	-	-	-
Branxton/Greta	10	-	-	-	-	-	1	-
Port Stephens	4	5	1	1	1	1	2	
Sydney	1	3	-	2	-	-	-	-

Respondents were also asked to estimate the frequency with which they or their family members use health services. As shown in **Table 2.6**, frequency varied depending on the type of service. For instance, doctor visits tended to be more regular than optometrist visits.

Table 2.6 Frequency of Health Service Use

	Weekly	Fortnightly	Every 1 - 3 months	Every 4-6 months	Yearly	As required	Never
Doctor/ GP	-	-	57	87	33	45	-
Dentist	-	-	8	75	85	22	1
Hospital	1	1	-	23	37	58	13
Optometrist	-	-	3	13	56	19	5
Physiotherapist	6	6	18	20	13	15	12
Chiropractor	3	3	14	13	8	12	17
Community Health Centre	-	-	1	7	3	6	20
Specialist (other)	3	3	4	1	-	-	-

2.2.2 Educational Institutions

Respondents living with children, other family members and/or flatmates were asked to indicate the locations where they accessed schools, universities, preschools and child care services, if applicable. Results are presented in **Table 2.7** and **Figure 2.5**.

Most household members attending an educational institution were reported as accessing these services in Maitland, Singleton, Newcastle and Cessnock.

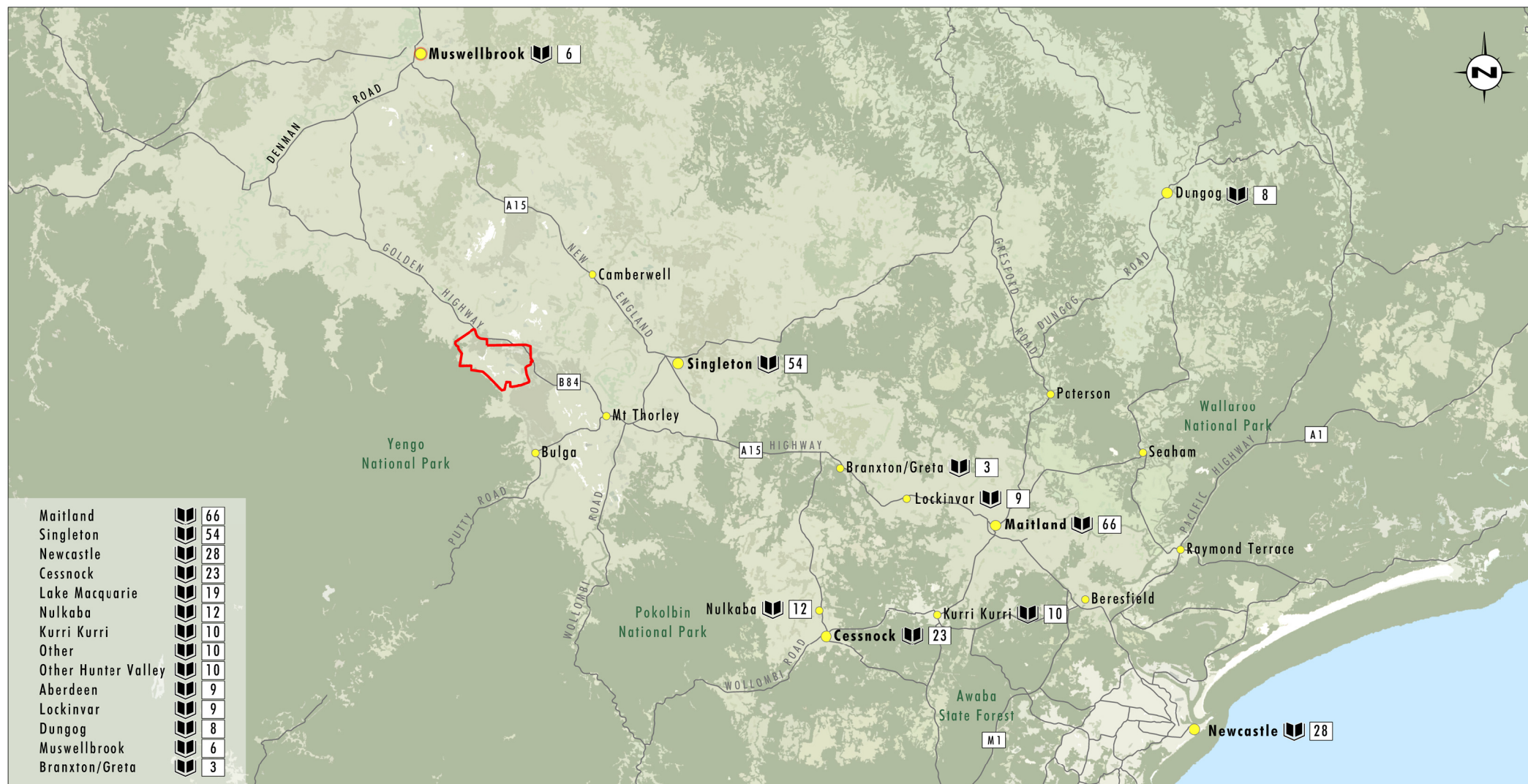


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km

Legend

- Project
- Education Attendance (Total Persons)

FIGURE 2.5

Education Attendance

Table 2.7 Number of People in Respondents' Households Attending Educational Institutions/Child Care Facilities, By Town

Location	Total Employees
Maitland	66
Singleton	54
Newcastle	28
Cessnock	23
Lake Macquarie	19
Nulkaba	12
Kurri Kurri	10
Other	10
Other Hunter Valley	10
Aberdeen	9
Lochinvar	9
Dungog	8
Muswellbrook	6
Branxton/Greta	3
TOTAL	267

2.3 Suppliers

2.3.1 Office Location

Suppliers were asked to indicate the town in which their business' main office was located. As shown in **Table 2.8** and **Figure 2.6**, the most common locations were Singleton and Maitland, followed by Rutherford, Muswellbrook and Newcastle. In addition, 11 per cent (n=13) had a local office in the Hunter Valley including at Mt Thorley (n=5), Rutherford (n=5), Beresfield (n=1), Tomago (n=1) and Muswellbrook (n=1).

The average length of time in operation for suppliers was 24.5 years, with a median time of 22 years.

Table 2.8 Location of Suppliers' Main Offices

Location	Number of suppliers' offices (sample)	Percentage of suppliers (sample)
Singleton	57	50%
Maitland	32	28%
Rutherford	7	6%
Muswellbrook	7	6%
Newcastle	6	5%
Mt Thorley	5	4%
Wauchope	3	3%
Sydney	3	3%
Illawarra / Port Kembla	3	3%
Scone	2	2%
Lithgow	1	1%
Currumbin (QLD)	1	1%
Beresfield	1	1%
Lismore	1	1%
Port Macquarie	1	1%
Coffs Harbour	1	1%
Tamworth	1	1%
Total	132	N/A

Note: Multiple responses permitted; therefore the sum of percentages exceeds 100 per cent.

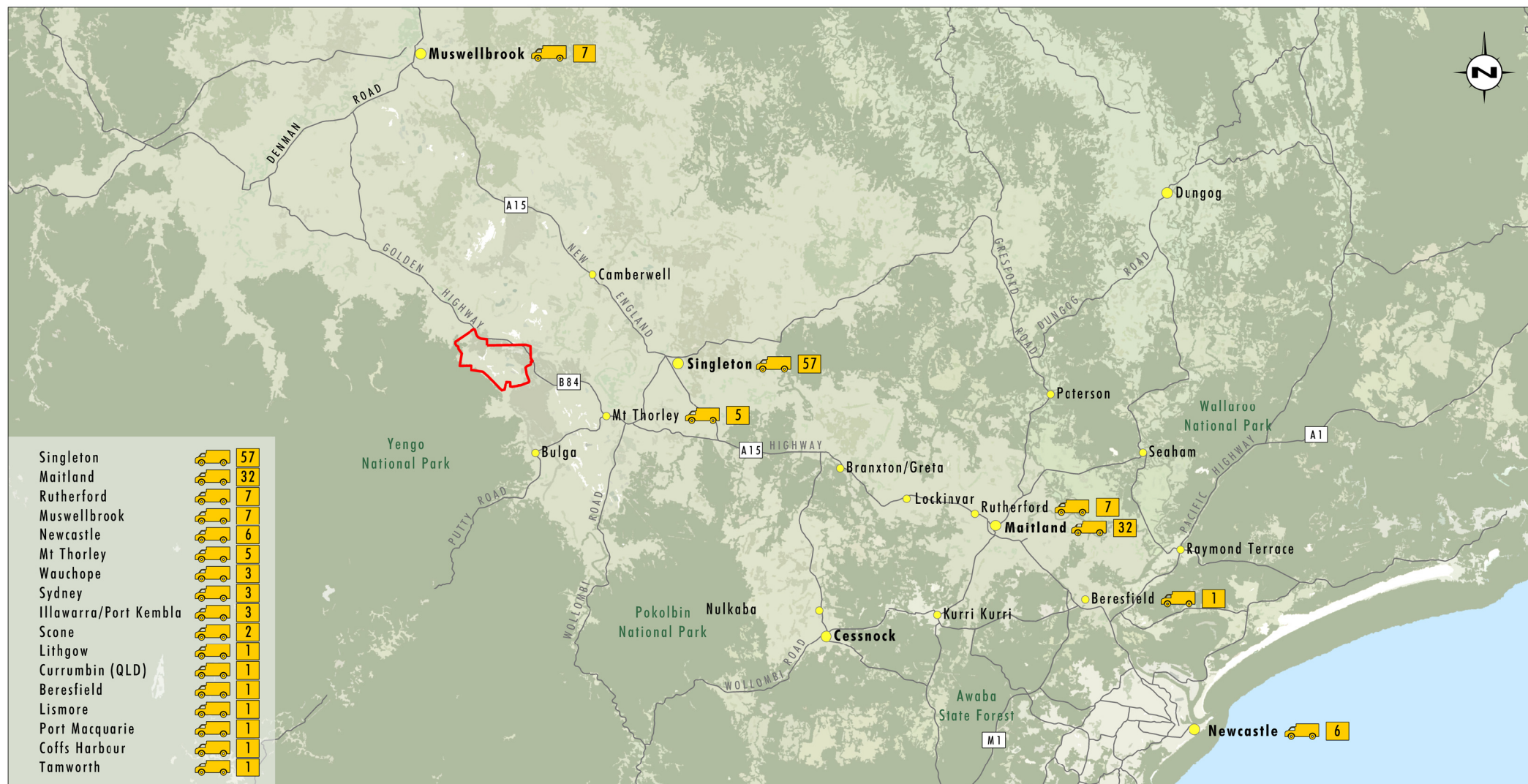


Image Source: Google Earth (2015)
Data Source: United (2015)

0 10 20 30 km

Legend

- Project
- 🚚 Total Suppliers Offices

FIGURE 2.6

Suppliers Office Locations

2.3.2 Number and Location of Employees

The average number of employees per supplier (including full-time, part-time and casual) was over 35 employees, with a median of 11 employees. The mean is influenced by the fact that there were some large employers within the sample. For example, the largest employer had at least 840 employees. The median should therefore be considered more reflective of what is a 'typical' number of employees.

Suppliers were also asked to indicate the towns in which their employees live, including the number of employees living in each town. These findings are presented in **Table 2.9**. The majority of supplier employees resided in Singleton, Maitland and Newcastle. There were also a large number of employees that lived outside of the Hunter region recorded as 'other' in the table below. When extrapolated to all suppliers, from the data supplied it is estimated that there are at least 3,883 employees across all suppliers.

Table 2.9 Suppliers' Employees' Town of Residence

LGA	Employees (Sample)	Percent of all employees	Employees* (estimated total)
Singleton	659	18%	2135
Maitland	611	17%	1979
Newcastle	306	9%	991
Cessnock	184	5%	596
Muswellbrook	171	5%	554
Sydney	113	3%	366
Bulga	34	1%	110
Jerry's Plains	18	1%	58
Other	1481	41%	3826
Total	3577	100%	10615

* These figures have been estimated using the total base number of suppliers n=360.

2.3.3 Business Income

A total of 50 respondents reported their estimated total business income for the past financial year, with estimates ranging between \$100,000 and \$210 million.

The average total reported revenue was \$12.9 million. However, income estimates were not distributed normally and therefore the mean is influenced by a number of very large values. As such, in the following analysis, the median revenue of \$2.85 million has been used as an appropriate figure for all supplier survey respondents and an estimate of business income for all suppliers, to ensure that the analysis provides conservative estimates of overall business expenditure.

2.3.4 Location of Business Expenditure

Respondents were asked to estimate the proportion of their business revenue that was spent on goods and services relating to their business activities (excluding wages), and identify where this money is spent. Respondents' responses were then extrapolated across all suppliers to give an estimate of total supplier expenditure, as presented in **Table 2.10**.

While the table below provides an estimate of business expenditure in the local towns, a small number of the businesses surveyed had extremely high business income which may lead to an overestimation of the total expenditure in the towns above. For example, one surveyed business estimated a total income of \$210 million. The results of the above expenditure estimates should therefore be interpreted with caution.

Table 2.10 Location and Amount of Suppliers' Expenditure

Location	Business expenditure (sample) (\$ million)	Percent Expenditure	Estimated Total Expenditure (\$ million)
Singleton	\$35.41	25%	\$114.73
Newcastle	\$27.97	19.5%	\$90.62
Other	\$26.44	18.5%	\$85.67
Sydney	\$21.10	15%	\$68.36
Maitland	\$20.52	14%	\$66.48
Muswellbrook	\$5.32	4%	\$17.24
Cessnock	\$2.53	2%	\$8.2
Jerrys Plains	\$1.36	1%	\$4.41
Bulga	\$1.06	0.5%	\$3.43
Branxton	\$0.79	0.5%	\$2.56
Total	\$142.5	100%	\$461.7

Note: The analysis above is based on 50 respondents that provided sufficient information relating to (a) percentages of expenditure, by town, and/or (b) an estimate of goods and services expenditure, as a proportion of overall business revenue and assumed as representative of all respondents. Revenue for all businesses was assumed to be the median business revenue, as described above. In addition, percentages have been rounded up or down accordingly for use in this table. Estimated total expenditure has been calculated based on the total suppliers figure of n=360.

As shown in **Table 2.10**, most business spending by suppliers occurs in Singleton, Newcastle, Sydney, Maitland and 'other' locations. 'Other' unspecified locations accounts for the third highest business spend of suppliers in the survey.

The average proportion of business revenue spent on goods and services was 41 per cent. This means, that on average, suppliers spent around \$1.2 million per annum on goods and services.

2.3.5 Suppliers' Business Dependency on Mining

Suppliers were asked to detail the percentage of their business that was dependent on the mining industry, and on average suppliers who answered the question indicated that 74 per cent of their business was dependent on the mining industry, (median of 85 per cent, as many were entirely dependent on mining). Respondents were also asked about their business growth and 57 per cent felt their business was stable, 27 per cent felt their business was declining and 16 per cent felt their business was growing.

Suppliers were then asked to nominate the percentage of their business that was dependent on United, Wambo, Glencore or Peabody. The following **Table 2.11** details the mean and median scores for nominated percentages, as well as the perceived size of their contract with each business.

Table 2.11 Estimates of percentage of business that is directly reliant on Wambo and United and size of contract

Company	Average	Median	Size of contract
United	4%	2%	Small (7), Medium (2)
Wambo	17%	10%	Small (27), Medium (10), Large (9)
Other Glencore	32%	30%	Small (15), Medium (12), Large (18)
Other Peabody	9%	7%	Small (14), Medium (6),

2.3.6 Business Expenditure with a Direct Reliance on United and Wambo

Suppliers' business expenditure that is directly reliant on United and Wambo was estimated using the business expenditure figures described in **Section 2.3.2** and **Section 2.3.4**, in combination with the estimates of business dependence described in **Section 2.3.5** and presented in **Table 2.12**.

Table 2.12 Estimates of Suppliers' Business Expenditure that is directly reliant on Wambo/United

Location	Business expenditure (sample) (\$ million)	Percent Expenditure	Estimated Total Expenditure (\$ million)
Singleton	\$7.44	25%	\$16.51
Newcastle	\$5.87	19.5%	\$13.04
Other	\$5.55	18.5%	\$12.32
Sydney	\$4.43	15%	\$9.84
Maitland	\$4.31	14%	\$9.57
Muswellbrook	\$1.12	4%	\$2.48
Cessnock	\$0.53	2%	\$1.18
Jerrys Plains	\$0.29	1%	\$0.63

Location	Business expenditure (sample) (\$ million)	Percent Expenditure	Estimated Total Expenditure (\$ million)
Bulga	\$0.22	0.5%	\$0.50
Branxton	\$0.17	0.5%	\$0.37
Total	\$29.93	100%	\$66.43

2.3.7 Capacity to Expand and Further Opportunities with United and Wambo

Suppliers were also asked to indicate their capacity to take on additional work. Over two thirds of the sample (62 per cent) indicated that they had capacity to do so. Additionally, supplier respondents were asked if they believed there would be future opportunities for business with United and Wambo. Just under half of the sample (48 per cent) stated that they either believed there would be future opportunities, or that they hoped that such opportunities would arise.

3.0 Conclusion

Findings from the TRC show strong socio-economic linkages between Wambo, United and a number of communities, particularly those towns and regional centres in closest proximity to the company's operations; Singleton, Maitland, Cessnock and Newcastle which receive substantial economic benefit from the operations. Similarly, social impacts, as measured through community participation and social infrastructure use were also substantial, and again were focused on the communities closest to the operations.

In summary, the results of the survey indicate that the existing Wambo and United workforce:

- are most likely to reside in Singleton (24 per cent), Maitland (23 per cent), Cessnock (13 per cent), and Newcastle (11 per cent).
- directly contribute approximately \$13.26 million to various local, regional and state economies, with expenditure greatest in Singleton (\$3.5 million) followed by Maitland (\$2.8 million) and Newcastle (\$2.3 million).
- have an average length of employment at Wambo / United of 5.29 years, and the average length of time living in their current residential location totalling just over 18 years. The majority of the sample were married (73 per cent) and there was also a high degree of home ownership (79 per cent).
- have a household member that participates in a community related group or activity (58 per cent of households), with the most common activities relating to sport and recreation, particularly team based sports.
- generally use social infrastructure and participate in community life in the communities close by to where they reside; with the highest levels of overall participation in Singleton, followed by Maitland and Cessnock. Use of education facilities was also in similar locations, with Maitland and Singleton having the highest overall participation levels, followed by Newcastle and Cessnock.

In relation to suppliers, survey data indicates: a relatively high level of reliance on Wambo (on average, just over one fifth of respective business income for those participating in the survey). Almost two-thirds of the suppliers surveyed indicated adequate capacity, and a desire to take on additional work with United and Wambo.

Overall, suppliers to United and Wambo are estimated to contribute approximately \$211 million within the Hunter Valley region, and an additional \$105 million to the broader economy. Of this total \$316 million, approximately \$66 million is attributed to services provided to United and Wambo specifically.



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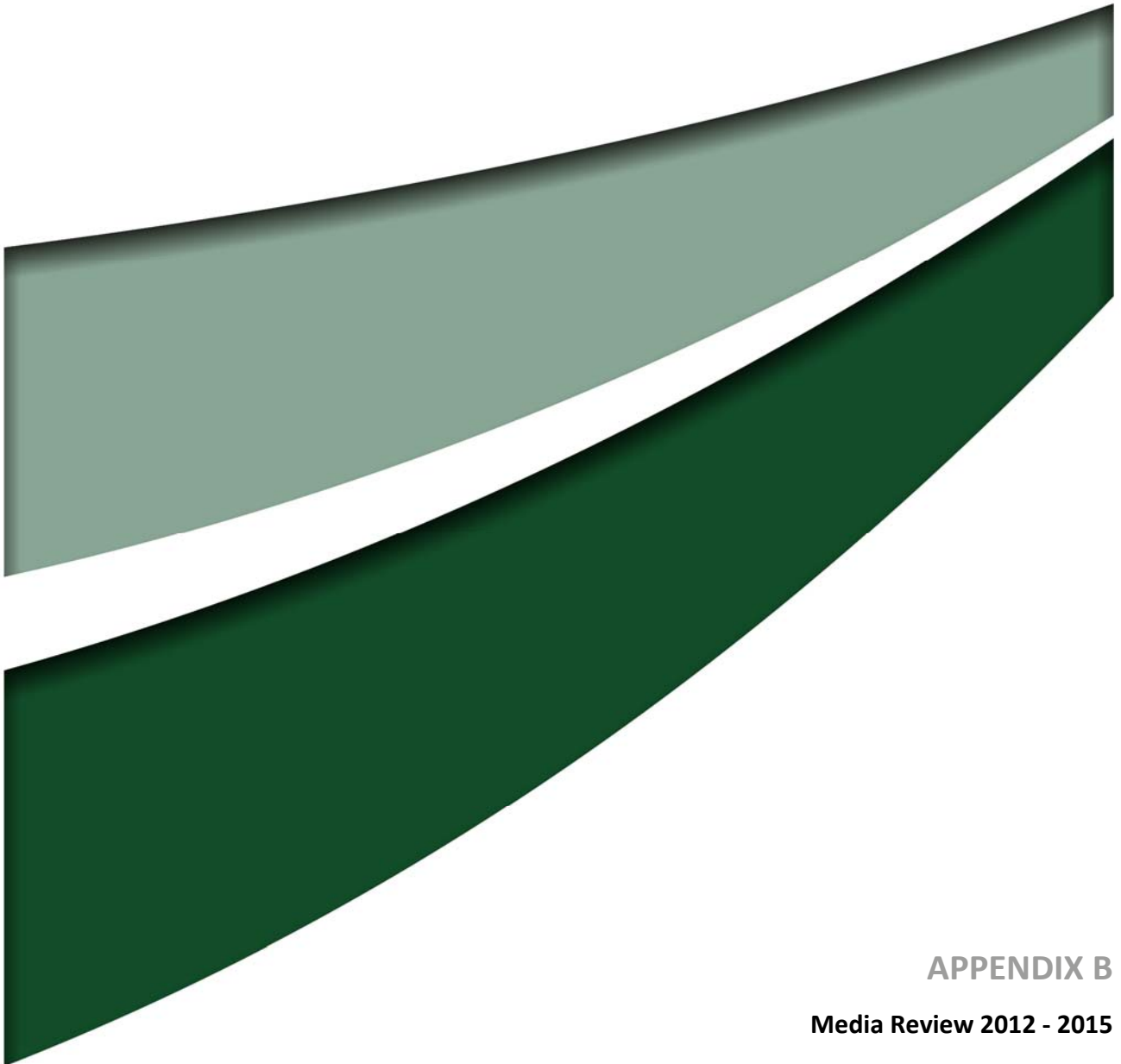
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APPENDIX B

Media Review 2012 - 2015

Appendix 2 - Media Review 2012 - 2015

Date	Article	Content and Positioning
14/1/2016	EPA takes action over Wambo coal mine dam breach near Warkworth	Article details the EPA's investigation into the breach of a dam wall at Wambo. Also notes the delayed response of Peabody Energy in informing the EPA of the incident.
	Newcastle Herald	Tone of article = negative
13/1/2016	Wambo Coal Mine in Hunter investigated by Environmental Protection Agency over dam wall collapse	Article details the delayed response from Peabody Energy in informing the EPA after the collapse of a dam wall amid a period of heavy rain.
	Sydney Morning Herald	Tone of article = negative
5/1/2016	Donation benefits hospital	Rio Tinto's Mount Thorley Warkworth mine donates \$5,000 to Singleton Hospital and the Singleton Cancer Appeal.
	Singleton Argus	Tone of article = positive
	Wambo Coal fined over offensive blast fumes	Article details how Wambo Coal was fined for emitting an offensive odour from blast fumes. Includes negative feedback from local residents.
27/08/2015	Newcastle Herald	Tone of article = negative
27/07/2015	Major boost for Singleton region	Article details how the Cancer Council NSW has remained in operation in Singleton due to a \$20,000 donation from the Bloomfield Group.
	Singleton Argus	Tone of article = positive
30/06/2015	Bulga battle divides Hunter mining country	Article describes how residents of a Hunter Valley village have pleaded with assessors not to allow a coal mine expansion they say will make their homes uninhabitable and devastate their lives.
	News.com	Tone of article = negative
	Coal industry safety group says too many miners killed on way to/from work	Singleton-based Coal Services, a coal industry safety group, is concerned about the number of road accidents involving workers in the Hunter Region.
26/06/2015	ABC News	Tone of article = negative
	50 jobs to go at Wambo coal mine	50 jobs to go from Wambo Coal due to cost cutting by Peabody.

Date	Article	Content and Positioning
11/06/2015	Newcastle Herald	Tone of article = negative
1/06/2015	Warkworth coal under threat from new ecological listing	The article details how the federal listing of 400 acres of critically endangered forest may threaten the approvals process for the Mt Thorley-Warkworth expansion project, after new information was presented at a public consultation meeting in Singleton
	Australian Mining	Tone of article = neutral
8/05/2015	Miners' union slams 'disgraceful' job cuts at Mount Owen mine	The article describes how the miners' union is fighting 70 redundancies at the Mount Owen mine in the Hunter Valley in response to Glencore reducing its Australian production.
	ABC News	Tone of article = negative
5/04/2015	Rio Tinto wins planning nod for controversial Warkworth coal mine	Rio Tinto has won its bid to extend its Mount Thorley-Warkworth coal mine in the Upper Hunter, with the Planning Assessment Commission recommending it proceeds
	Sydney Morning Herald	Tone of article = negative
1/04/2015	Hunter Woodland facing extreme risk of extinction due to mining, housing and agriculture	Article regarding the clearing of woodlands in the Hunter Valley post colonization, outlining continued risks due to expansion of housing and industry in the region. Key issues identified as habitat loss, weed invasion and inappropriate fire regimes.
	ABC News	Tone of article = negative.
30/03/2015	Open cut coal mine rehabilitation effort at Rix's Creek will restore grazing capacity in future.	Article outlines the possible positive impacts of mine site rehabilitation on agriculture, using the Rix's Creek Operations as an example.
	ABC: NSW Country Hour	Tone of article = positive
27/03/2015	Hunter Valley shafted over coal mine risk: Major horse breeder could invest in Victoria instead.	Article indicating that prospective industry investors may be avoiding the Hunter Valley due to encroachment of mines into agricultural lands.
	The Daily Telegraph	Tone of article = negative.

Date	Article	Content and Positioning
24/03/2015	Hunter region demands mining safeguards	Article outlining calls from the Hunter Thoroughbred Breeders Association and the Hunter Valley Wine and Tourism Association to ban coal and coal seam gas operations within 10 kilometres of critical industry.
	AAP	Tone of article = negative.
12/03/2015	Hunter's mining communities to celebrate contribution of coal	The gloom surrounding the current state of the coal industry is being put to one side as the Hunter Valley stages its inaugural coal festival
	ABC News	Tone of article = positive
28/02/2015	Revealed: Major new coal mines planned for the Hunter Valley	The article outlines a leaked report which shows that major mining companies are preparing plans for as many as 16 new or expanded coal mines in the NSW Upper Hunter Valley
		Key issues identified as biodiversity loss and social and community impacts
	The Sydney Morning Herald	Tone of article = negative
10/02/2015	\$1m wall to shield coal train noise	Residents in the Upper Hunter town of Glenridding are pleased that work will start on a 285-metre long wall to shield against coal train noise.
	ABC News	Tone of article = positive
17/01/2015	Big coal crowds out cattle	Coal companies own nearly 350,000 hectares in some of the State's most productive farming and grazing districts
	The Land	Tone of article = negative
15/12/2014	Coal communities in NSW's Hunter Valley trying to survive the mining slowdown	The article describes how approximately 30,000 jobs have been lost from the mining industry across Australia recently and 4,000 in NSW. Young people are being made redundant in the Singleton region. Key issues identified as reduced economic opportunities
	ABC News	Tone of article = neutral
4/05/2014	King Coal : 10 years on	Article regarding cumulative impacts of Hunter mining industry generally.
	Newcastle Herald	Tone of article = negative.

Date	Article	Content and Positioning
8/04/2014	Rix's Creek plans to expand	Movement away from Singleton Heights – decrease of impacts to township over time.
	Singleton Argus	Continuation of employment for Rix's Creek, as well as potentially Bloomfield.
		Key issues identified as air quality, noise, vibration and ecology.
		Tone of article = neutral/positive
8/04/2014	Three generations remain loyal to Bloomfield	Human interest piece profiling McKerrow family who have had three generations working with Rix's Creek.
	Singleton Argus	Comments from employees regarding family friendly hours; and comments from management regarding policy to employ family members resulting in low staff turnover and good continuity of corporate knowledge.
		Tone of article = positive
15/03/2014	Staying at Camberwell	Article about Camberwell local resident Wendy Bowman talking about the challenges of living near to coal mines, including dust and competition for land use.
	Singleton Argus	Tone of article = negative
17/12/2013	Rix's Creek digs deep	Article regarding Rix's Creek employees fundraising for Cancer Council and also the Maitland relay for life, with further commentary about Rix's creek history and status as a 'small family owned company' which doesn't 'fit the profile of a typical mining company'
	Singleton Argus	Tone of article = positive
3/09/2013	Rix's Creek truck stop	Article regarding opening of new government funded Rix's Creek rest area on New England Highway which had been constructed as the previous one that to be moved due to regular blasting closures associated with Rix's Creek Mine.
	Singleton Argus	Tone of article = positive re truck stop, neutral re local mine
1/09/2013	Ashton Coal Camberwell court case begins	Article regarding Hunter Environment Lobby's legal bid to overturn the approval of Ashton Coal's South East Open Cut coal mine in Camberwell, on grounds of impact to Glennies Creek, dust and noise.
	Newcastle Herald	Tone of article = negative
26/01/2013	Cancer Council opens doors	Article regarding opening of Cancer Council office in the Upper Hunter, including announcement of a \$34,032 donation by Rix's Creek Charity Golf Day.

Date	Article	Content and Positioning
	Singleton Argus	Tone of article = positive
13/10/2012	Bloomfield celebrates 75 th anniversary as family-owned coal mine	Article detailing Bloomfield anniversary attended by 1000 people, and differentiating Bloomfield as a “stark contrast” and “alternative supply” to “the coal industry’s more familiar corporate profile of large multinational companies and fly-in fly-out workers”.
	Newcastle Herald	Tone of article = positive.
13/07/2012	Chamber links business to coal	Article regarding Singleton Chamber of Commerce’s efforts to facilitate local procurement in mining, featuring commentary regarding Bloomfield management’s presentation to the Chamber which noted Bloomfield’s preference for local procurement, with examples of hydraulic hosing, takeaway food, fencing and environmental consultants, as well as support for community projects.
	Singleton Argus	Tone of article = positive



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