

Appendix K

Social Impact
Assessment



Narrabri Underground Mine Stage 3 Extension Project

Environmental Impact Statement

Narrabri Underground Mine Stage 3 Extension Project

Social Impact Assessment

8 October 2020

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Executive Summary

Introduction

The Narrabri Mine is located approximately 25 kilometres (km) south-east of Narrabri and approximately 60 km north-west of Gunnedah within the Narrabri Shire Council (NSC) Local Government Area (LGA) of New South Wales (NSW). The Narrabri Mine is operated by Narrabri Coal Operations Pty Limited (NCOPL).

NCOPL is seeking a new Development Consent under the State Significant Development provisions of Part 4 of the NSW *Environmental Planning and Assessment Act 1979* for the Narrabri Underground Mine Stage 3 Extension Project (the Project).

The Project involves an extension to the south of the approved underground mining area to gain access to additional coal reserves within Mining Lease Applications 1 and 2, an extension of the mine life to 2044 and development of supporting surface infrastructure. Run-of-mine coal production would occur at a rate of up to 11 Million tonnes per annum, consistent with the currently approved limit.

The Project would allow for the continued employment of the existing operational workforce (up to approximately 520 full-time equivalent personnel). An estimated additional 20 full-time equivalent (FTE) workers would be required during development of the Project. This development workforce would be employed during multiple, short periods of development activity over the remainder of the mine life. This Social Impact Assessment (SIA) conservatively assumes that development activity, and the need for this additional workforce, would occur consistently over the life of the mine.

This SIA forms part of an Environmental Impact Statement (EIS) which has been prepared to accompany the Development Application for the Project. The Secretary's Environmental Assessment Requirements (SEARs) state the following requirement in regard to the SIA:

The EIS must address the following specific issues:

Social – including: an assessment of the social impacts of the project, prepared in accordance with the *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development (2017)*, including the likely impacts of the development on the local community, cumulative impacts (considering other mining developments in the locality), and consideration of workforce accommodation;

The *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development* (SIA Guideline) (NSW Government [Department of Planning and Environment], 2017a) outlines the requirements for undertaking the SIA component of the EIS. This SIA has been undertaken in accordance with the SIA Guideline.

Area of Social Influence

The area of social influence of the Project is considered to be the Narrabri LGA and Gunnedah LGA. This area of social influence was based on an assessment of the communities likely to be impacted by the Project and of the location of residence of the existing Narrabri Mine workforce.

Engagement to Support the Social Impact Assessment

The SIA has drawn on engagement activities to identify potential social impacts, including:

- individual meetings with 17 neighbouring landholders and landholders who requested discussions with the SIA team;
- meetings with the Narrabri Mine Community Consultative Committee (CCC), including presentations and discussions;
- an online and hard-copy community survey advertised through the *Narrabri Courier* and the *Namoi Valley Independent*;
- meetings with officers of NSC;

- meeting with officers of Gunnedah Shire Council;
- meetings with representatives of the Gomeroi people from the Narrabri Local Aboriginal Land Council and Gomeroi Narrabri Aboriginal Corporation;
- meetings with service providers – Rural Fire Service and NSW Health; and
- meeting with representatives from the Narrabri and District Chamber of Commerce.

Potential Positive and Negative Impacts

The Narrabri Mine is an existing mine approved to operate until 2031. Therefore, the Narrabri Mine (to 2031) is part of the existing social baseline. The SIA analysed the impacts related to the Project, including the proposed mine life extension to 2044 and the geographic extension to the south of the existing operation.

The potential positive impacts of very high, high and moderate significance identified in the SIA are:

- One positive impact of very high significance:
 - Maintained provision of jobs and training for local residents, including young people and Aboriginal and Torres Strait Islander people.
- Five positive impacts of high significance:
 - Continued community contributions supporting positive social outcomes, social infrastructure investments and/or community resilience improvements.
 - Ongoing opportunities for local business inputs and contracts.
 - Ongoing contribution to economic diversity and economic resilience.
 - Identification of previously unknown Aboriginal cultural heritage items/values resulting in their protection and preservation.
 - Ongoing opportunities for employment and training of Aboriginal and/or Torres Strait Islander people.
- Two positive impacts of moderate significance:
 - The Project may attract current non-local employees to move to the area of social influence, resulting in minimal population growth (up to 40 people – workers and their families) contributing in a small way to the stabilisation of the Narrabri LGA and Gunnedah LGA population supporting viability of existing service provision.
 - Continuation of training and employment at the Narrabri Mine may assist with maintaining young adult population which may otherwise decline further.

The potential negative impacts of very high, high and moderate significance (after proposed management measures) identified in the SIA are:

- No negative impacts of very high significance.
- One negative impact of high significance:
 - Continuation of existing amenity impacts for neighbouring landholders for additional 13-year period, including noise, air quality, light and odour impacts.
- Ten negative impacts of moderate significance:
 - Landholders newly affected by noise and/or visual amenity impacts from the extended Project area.
 - Small number of land acquisitions (approximately six properties) would lead to a small loss of farming families over time, in turn resulting in a change to localised community composition and loss of individual personal connections. A range of trends contribute to loss of farming families, however the Project would also contribute in a small way.
 - The Project maintains a change in the community's sense of place from agricultural activities to extractive industries. While this change has been underway for some years, the proposed 13-year mine life extension would contribute in a small way to an ongoing change to sense of place.

- Continuation of existing tension between community members related to the socio-economic changes within these communities; tension and competition between Narrabri and Gunnedah residents to capture the benefits of mining; and community tensions related to the perceived threat to sense of place being the change from traditional agricultural activity to inclusion of mining.
- Increase to overall greenhouse gas emissions (Scope 1, 2 and 3) due to mine life extension contributing to social impacts related to global climate change.
- Impacted landholder aspirations driven by concerns about the saleability of nearby properties.
- Landholders stress and anxiety from the Project, due to concerns for future property values associated with proximity to mining activity, and uncertainty about the mine's future expansion.
- Disruption, stress and anxiety experienced by landholders whose property is acquired as a result of the Project (approximately six acquisitions).
- Community anxiety about climate change.
- Community anxiety about the ongoing security of groundwater supply.

Management Measures

Management measures would be implemented to address the social impacts identified, focusing on the impacts identified as being of very high, high and moderate significance. Four key strategies were identified to deliver the proposed management measures, each with multiple actions:

- **Community and Stakeholder Engagement:**
 - EO1: Continue to provide relevant information about Narrabri Mine operations and Project to the community.
 - EO2: Continue to provide opportunities for engagement between nearby landholders and NCOPL to encourage trusted relationships.
 - EO3: Build the relationship between NCOPL (and mining generally) and the community to improve community cohesion.
 - EO4: Ongoing engagement between NCOPL and tourist accommodation providers to monitor demand from non-local contractors and ensure it continues to be met by camps and does not impact tourist industry.
 - EO5: Ongoing engagement with other major project proponents to minimise cumulative impacts.
- **Employment and Procurement Management:**
 - EPO1: Prioritise local residents in employment decisions.
 - EPO2: Continued availability and promotion of employment opportunities for people without any qualification or training.
 - EPO3: Maintain and increase the proportion of women employed at NCOPL.
 - EPO4: Maintain and increase the proportion of Aboriginal people employed at NCOPL.
 - EPO5: Encourage non-local workers to move to local area.
 - EPO6: Maintain engagement with local business community.
 - EPO7: Prioritise local businesses in procurement decisions.
 - EPO8: Prioritise Aboriginal-owned businesses in procurement decisions.
- **Feedback and Complaints Management:**
 - CO1: Continue existing complaints handling procedures with improvements.
 - CO2: Continue existing CCC procedures while encouraging diversity of CCC membership (Indigenous/non-Indigenous, male/female, community networks).

- Community Investment:
 - CIO1: Develop program of ongoing community investments.
 - CIO2: Ongoing engagement with local government and community regarding community investments.

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Acronyms and abbreviations

ABS	Australian Bureau of Statistics
ASGS	Australian Statistical Geography Standard
ASR	Age-standardised rate
CSG	Coal seam gas
DIDO	Drive In, Drive Out
EIS	Environmental Impact Statement
FIFO	Fly In, Fly Out
FTE	Full-Time Equivalent
GP	General Practitioner
GSC	Gunnedah Shire Council
ha	Hectares
km	Kilometres
LGA	Local Government Area
M	Million
ML	Mining Lease
MLA	Mining Lease Application
Mtpa	Million tonnes per annum
NCOPL	Narrabri Coal Operations Pty Ltd
nfd	Not further defined
NSC	Narrabri Shire Council
NSW	New South Wales
PHIDU	Public Health Information Development Unit (now part of Torrens University Australia)
SA1-4	Statistical Area Level 1 – Statistical Area Level 4 (ABS ASGS)
SIA	Social Impact Assessment
SR	Standardised ratio
UCL	Urban Centre/Locality (ABS ASGS)

Section 1 Introduction

1.1 Project Introduction

The Narrabri Mine is located approximately 25 kilometres (km) south-east of Narrabri and approximately 60 km north-west of Gunnedah within the Narrabri Shire Council (NSC) Local Government Area (LGA) of New South Wales (NSW) (Figure 1-1). The Narrabri Mine is operated by Narrabri Coal Operations Pty Limited (NCOPL), on behalf of the Narrabri Mine Joint Venture, which consists of Whitehaven Coal Limited's (Whitehaven's) wholly owned subsidiary Narrabri Coal Pty Ltd (77.5 per cent [%]), Upper Horn Investments (Australia) Pty Ltd (7.5%), J-Power Australia Pty Limited (7.5%), Posco International Narrabri Investment Pty Ltd (5%) and Kores Narrabri Pty Limited (2.5%).

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1.2 Surrounding Context

The Narrabri Mine is located approximately 25 km south-east of Narrabri (approximately 25 minutes [mins] travel time by vehicle) and approximately 60 km north-west of Gunnedah (approximately one hour drive) (Figure 1-1). The smaller town of Baan Baa is located approximately 10 km to the south-east of the Narrabri Mine (approximately eight min drive) and Boggabri is approximately 25 km further to the south-east than Baan Baa (approximately 20 min drive).

The Namoi River is located at a distance of approximately 3 km to 5 km to the east of the eastern boundary of the Project area, and is part of the Barwon catchment of the Murray-Darling basin. It runs north-west toward Narrabri from the Narrabri Mine. Agricultural uses adjoin the site to the north, east and south, with a variety of farm holdings on both sides of the Namoi River.

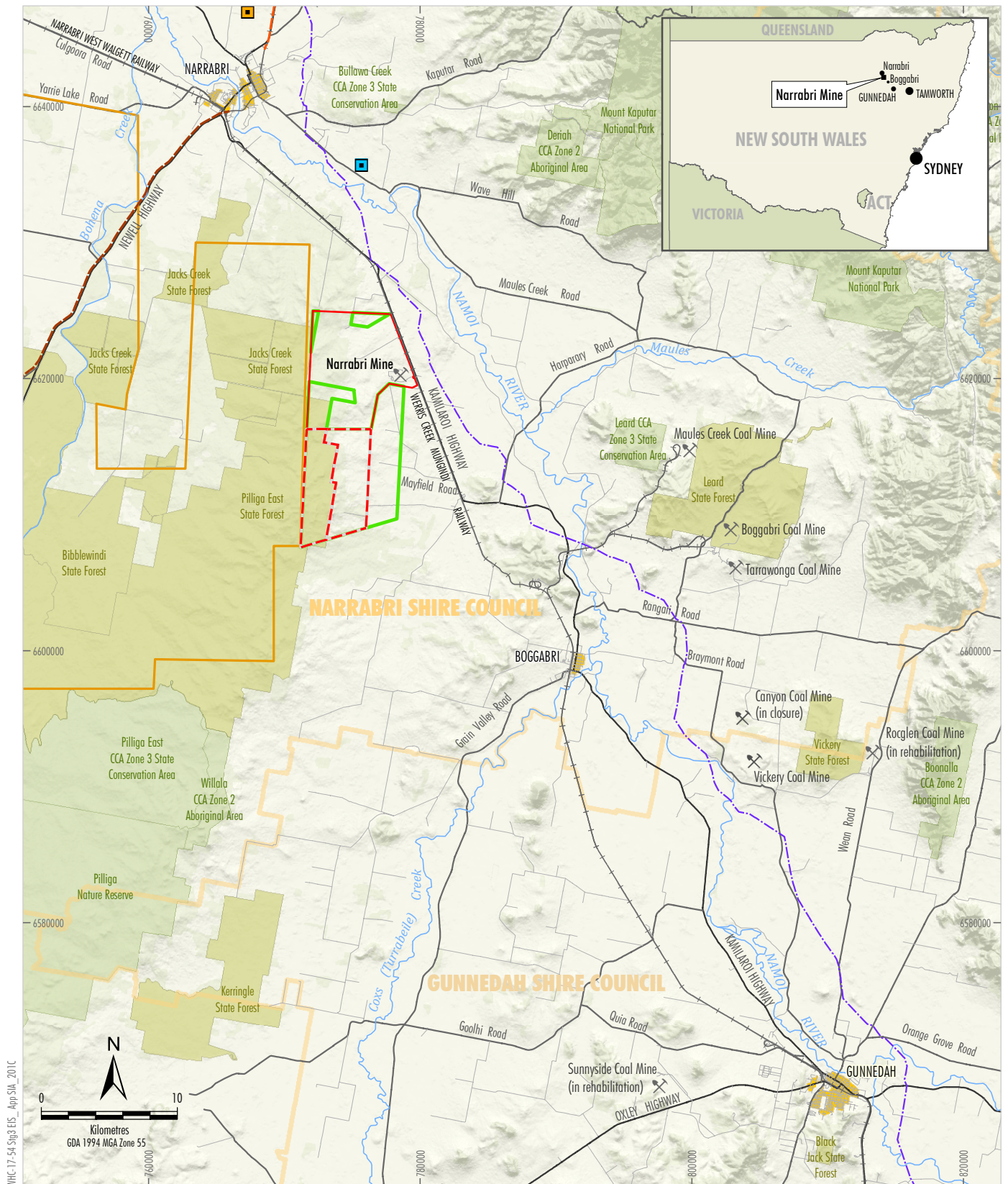
The area in the immediate surrounds of Narrabri Mine is relatively flat, but ranges to the east and west have generally been reserved for conservation or are utilised for forestry operations.

A collection of natural areas are located to the west of the Narrabri Mine, including forestry land and conservation areas. Collectively, these areas are often referred to as the Pilliga Forest, however there are different areas within this collective with different land uses, including areas appropriate for tourism and recreational activities.

There are two areas classified as state forest closest to the Narrabri Mine site, parts of which are located within Mining Lease (ML) 1609 and Mining Lease Applications (MLAs) 1 and 2 (Figure 1-1). These include Jacks Creek State Forest and Pilliga East State Forest (Figure 1-1).

The Kamilaroi Highway is located immediately east of the Narrabri Mine and connects the towns of Narrabri and Gunnedah. The highway is an important transport route in the region, connecting to the New England Highway to the south-east, which runs through to the Hunter Valley and Newcastle (approximately 4.5 hours' drive). The Kamilaroi Highway also meets the Oxley Highway at Gunnedah, which connects to Tamworth (approximately two hours' drive).

The Werris Creek Mungindi Railway line runs through the region and connects Narrabri to the Hunter Valley and Newcastle via the Main North Railway line connection at the Gap. The Werris Creek Mungindi Railway continues north to Moree. In addition to transporting coal produced from the Narrabri Mine, the railway carries passenger services and a range of other goods. The railway will continue to be utilised by Narrabri Mine to transport coal for the Project.



WHC-17-54 Sp3 EIS - App SIA_201C

Source: Geoscience Australia (2011); NSW Spatial Services (2019)

- | | | | |
|--|---|--|---|
| | LEGEND | | Other Major Projects |
| | Exploration Licence (EL 6243) | | Narrabri South Solar Farm |
| | Mining Lease (ML 1609) | | Proposed Silverleaf Solar Farm |
| | Provisional Mining Lease Application Area | | Narrabri Gas Project (Santos NSW [Eastern] Pty Ltd) |
| | Local Government Boundary | | Inland Rail (Narrabri to North Star - Phase 1) |
| | State Forest | | Proposed Inland Rail (Narramine to Narrabri) |
| | State Conservation Area, Aboriginal Area | | Queensland Hunter Gas Pipeline |

WHITEHAVEN COAL
NARRABRI STAGE 3 PROJECT
 Regional Location

Figure 1-1

1.3 Report Structure

To address the SEARs for the Project and the *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development* (SIA Guideline) (NSW Government [Department of Planning and Environment], 2017a), this SIA report has been structured as follows:

- Section 1 establishes the purpose of this report;
- Section 2 outlines the scope of the SIA;
- Section 3 describes the process and results of stakeholder engagement;
- Section 4 details the social baseline for the Project's social area of influence;
- Section 5 details the potential impacts and benefits of the Project, including an evaluation of their significance to local and regional communities;
- Section 6 describes social impact management strategies for the Project; and
- Section 7 concludes the SIA with a summary of the Project's social impacts and benefits.

Section 2 Scope of Assessment

2.1 The Project

2.1.1 Project overview

The Project involves an extension to the south of the approved underground mining area to gain access to additional coal reserves within MLAs 1 and 2 (Figure 2-1), an extension of the mine life to 2044 and development of supporting surface infrastructure. Run-of-mine coal production would occur at a rate of up to 11 Million tonnes per annum (Mtpa), consistent with the currently approved limit.

A detailed description of the Project is provided in Section 2 in the Main Report of the EIS.

2.1.2 Project workforce

Additional employment would be generated by the Project construction activities. The following assumptions have been made about the Project workforce:

- **Development/Operation:** It is estimated there would be 20 additional full-time equivalent (FTE) workers to be employed during development of the Project. This development workforce would be employed during multiple short development periods over the remainder of the mine life. This SIA conservatively assumes that development activity, and the need for this additional workforce, would occur consistently over the life of the mine. It is assumed there is no change to the maximum operational workforce of up to 520 full-time equivalent employees and contractors. It is understood there would be some variability in the Project operational workforce overtime (i.e. up to 520), however this would not change the conclusions of this assessment.
- **Closure Period:** It is assumed that the maximum number of FTE workers would remain constant until the end of the mine life/completion of mining.
- **Rehabilitation:** A smaller number of employees/contractors would be required post-closure to ensure rehabilitation objectives are being met. An estimate of the number of employees/contractors needed during rehabilitation is not known at this time.

2.2 SEARs and SIA Guideline

The terms of reference for the SIA are outlined in the SEARs for the Project, which were issued on 28 May 2019 and revised on 20 November 2019. The SEARs noted that the SIA should include:

“an assessment of the social impacts of the project, prepared in accordance with the Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development (2017), including the likely impacts of the development on the local community, cumulative impacts (considering other mining developments in the locality), and consideration of workforce accommodation”.

The SIA Guideline (NSW Government [Department of Planning and Environment], 2017a) outlines the requirements for undertaking the SIA component of the EIS.

As outlined in the SIA Guideline, social impacts involve changes to people's:

- Surroundings, including access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity.
- Personal and property rights, including whether their economic livelihoods are affected, and whether they experience personal disadvantage or have their civil liberties affected.
- Culture, including shared beliefs, customs, values and stories, and connections to land, places, and buildings (including Aboriginal culture and connection to country).



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- LEGEND**
- Mining Lease (ML 1609)
 - Provisional Mining Lease Application Area
 - Existing Namoi River Pipeline (Buried)
 - Approved Underground Mining Layout
 - Indicative Underground Mining Layout to be Extended for Project
 - Indicative Underground Project Mining Layout

Source: NCOPL (2019); NSW Spatial Services (2019)


NARRABRI STAGE 3 PROJECT
Project General Arrangement -
Indicative Underground Mining Layout

Figure 2-1

- Community, including its composition, cohesion, character, how it functions and sense of place.
- Way of life, including:
 - How people live, for example, how they get around, access to adequate housing.
 - How people work, for example, access to adequate employment, working conditions and/or practices.
 - How people play, for example, access to recreation activities.
 - How people interact with one another on a daily basis.
- Health and wellbeing, including physical and mental health.
- Access to and use of infrastructure, services and facilities, whether provided by local, state, or federal governments, or by for-profit or not-for-profit organisations or volunteer groups.
- Decision-making systems, particularly the extent to which they can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.
- Fears and aspirations related to one or a combination of the above, or about the future of their community.

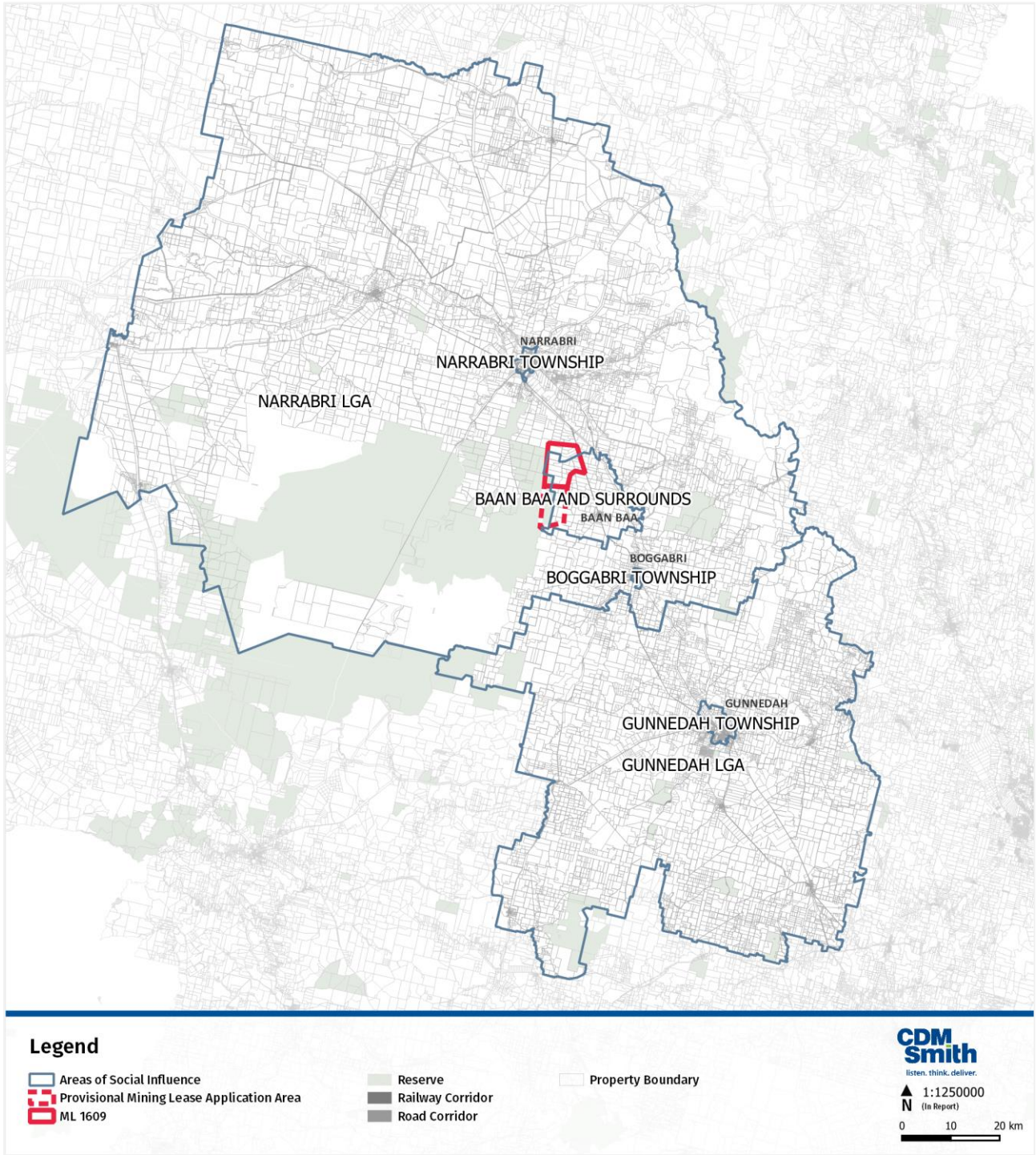
The social baseline and social impact sections of this report have been structured around these themes.

2.3 SIA Area of Social Influence

As outlined in the *Social Impact Assessment (SIA) Scoping Report* (CDM Smith, 2019) for the Project, the area of social influence of the Project is considered to be the Narrabri LGA and Gunnedah LGA (Figure 2-2). This was based on an assessment of the communities likely to be impacted by the Project and of the location of residence of the existing Narrabri Mine workforce.

Data for the smaller areas within these LGAs are considered in this SIA where relevant to the consideration of social impact (for example, for Baan Baa and surrounds, Narrabri township, Boggabri township and Gunnedah township). The population of each of these areas is provided in Section 4.1.2.

Figure 2-2. Areas of social influence



2.4 SIA Focus Areas

Key focus areas for the SIA for the Project are outlined below. These focus areas were identified in the SIA Scoping Report (CDM Smith, 2019) and expanded upon as the SIA was prepared. Defining these focus areas has assisted with ensuring engagement and that the analysis undertaken in the social baseline analysis has focused on the areas of most concern to stakeholders. The focus areas identified below are issues for investigation within the SIA, not conclusions or impacts identified from the analysis.

Social Impact Assessment Focus Areas

Site

- Any natural and Aboriginal cultural heritage values in the Project area potentially impacted by vegetation clearing, surface development and planned subsidence.

Nearby Landholders

- Potential for continued amenity impacts, such as noise, air quality, visual amenity and odour impacts, for nearby landholders due to the proposed mine life extension.
- Potential for new amenity impacts, particularly noise and air quality impacts, for additional landholders near the southern extension area.
- Potential for changes to groundwater and surface water (overland flow) regimes due to the Project.
- Continued and exacerbated financial impacts and stress and anxiety due to difficulty selling nearby properties.
- Continued stress and anxiety due to perceived uncertainty around changes to the Narrabri Mine and potential for future property acquisitions.
- Perceived or potentially actual health impacts related to coal dust.

Narrabri LGA and Gunnedah LGA

- Continued direct and indirect employment in the Narrabri and Gunnedah LGAs up to 520 full-time equivalent employees and contractors, contributing to economic diversity and resilience, especially during drought periods, as well as training and retention of younger people and potentially disadvantaged groups.
- Continued strain on community cohesion between:
 - Perceived gap in the extent to which Narrabri and Gunnedah townships are benefiting from mining activity, and the tension between agricultural, rural and mining activity and sense of place.
 - Perceived unequal distribution of opportunities from the Narrabri Mine causing conflict between different Aboriginal groups.
- Positive and negative impacts relating to a potential small increase in population, which could potentially contribute to:
 - Small additional demand on community infrastructure, in some instances contributing to a small additional demand for services/facilities that are at capacity, and in other instances, contributing to the viability of services/facilities in small population centres.
 - Small number of additional families if the Project encourages current non-local workers to relocate to the local area with their families.
 - Small additional growth in economic activity.
- Continuation of impacts on availability of affordable and appropriate accommodation for particular at-risk or disadvantaged groups (including cumulative impacts on other projects).
- Continuation of Aboriginal employment due to the proposed mine life extension.

Section 3 Stakeholder Engagement

3.1 Principles and Objectives

3.1.1 Purpose

The purpose of the SIA engagement program was to:

- Ensure potentially impacted stakeholders were identified and informed about the Project, how they might be impacted, the process for project assessment, and how they can be informed and participate in the SIA engagement process.
- Gather input from stakeholders to incorporate local knowledge and input with regard to social impacts, the assessment of significance of impacts and development of management strategies.
- Understand the interests of stakeholders and how impacts may be experienced from their perspectives.
- Ensure stakeholders know how their input and views have been considered in the development of the SIA.

3.1.2 Principles

The engagement principles that guided the approach to, and method of, engagement were:

- Stakeholder engagement is a core input to the SIA, and genuine engagement is important to achieve the requirements of the SIA Guideline.
- The engagement approach and methods should focus on potentially impacted and interested stakeholders, however, they should also allow an opportunity for the broader community's input.
- Engagement should be used to clearly outline opportunities for stakeholder input and how stakeholder input will be considered.
- The engagement approach should be adaptive and flexible, and responsive to feedback received.
- Project information should be provided in a manner that is easily understood, including mapping and visual aids, and should be provided with adequate time to allow stakeholders to provide informed input.

3.1.3 Objectives

The key objectives of the SIA engagement program were to:

- Engage with a comprehensive group of stakeholders who may be directly impacted by the Project, or may have an interest in the social impacts of the Project.
- Seek input from key stakeholders, including individual landholders, on social impacts of the Project.
- Recognise and respond to local interests or concerns regarding the Project.
- Continue the ongoing dialogue between NCOPL and stakeholders, which was initiated through the development of the Narrabri Mine in 2008.

3.2 Stakeholder Identification

The following stakeholders were identified as potentially experiencing impacts and/or having an interest in the Project or its outcomes (Table 3-1).

Table 3-1. Stakeholders identified

Stakeholder	Interest in the Project	Level of Engagement Required / Promised
Local Government		
Council Officers – Narrabri Shire Council and Gunnedah Shire Council	<ul style="list-style-type: none"> Local knowledge: key social issues, usage of social infrastructure and social infrastructure needs, traffic/road planning, etc. Understand planning being undertaken in the region. 	<ul style="list-style-type: none"> Involved in early stages of the SIA to identify social impacts to be analysed. Inform of process being undertaken and draft findings.
Industry and Business Sector		
Narrabri and District Chamber of Commerce	<ul style="list-style-type: none"> Opportunities and impacts for local business. 	<ul style="list-style-type: none"> Input to Project with regard to business development and opportunities for local businesses to be involved.
Community		
Landholders – Either directly affected or adjacent to works that may cause impacts (within approximately 2 km of ML 1609, MLA 1 or MLA 2)	<ul style="list-style-type: none"> Have an interest in specific impacts experienced or predicted at their home. Have an interest in potential acquisition options. 	<ul style="list-style-type: none"> Information about the Project and how to be involved. Input into specific impacts likely to be experienced, as well as the significance of these impacts. Input to management strategies specific to identified impacts.
Narrabri Mine Community Consultative Committee (CCC)	<ul style="list-style-type: none"> As representatives of the community, the members take an interest in the impacts on a variety of stakeholders. 	<ul style="list-style-type: none"> Information about the Project and how to be involved. Input regarding the social impacts experienced, the significance assessment of impacts, and the management strategies.
Representatives of the Gomerioi people (Narrabri Local Aboriginal Land Council and Gomerioi Narrabri Aboriginal Corporation) ¹	<ul style="list-style-type: none"> Have an interest in Aboriginal cultural heritage impacts, impacts on the connection to country, etc. Have an interest in employment and economic development opportunities. 	<ul style="list-style-type: none"> Information about the Project and how to be involved. Input into the unique impacts on Aboriginal communities including, for example, the social impacts of changes to Aboriginal cultural heritage sites and connection to country.
Narrabri and Gunnedah LGA resident communities	<ul style="list-style-type: none"> Have an interest in plans for their local area. Have an interest in employment and economic opportunities that may be associated with the Project. 	<ul style="list-style-type: none"> Information about the Project and how to be involved. Input regarding local attitudes to mining, community division and values.

Other stakeholders that may be interested in the Project, however will be engaged through the broader EIS engagement program rather than the SIA program, are included below (Table 3-2). The findings of engagement activities with these stakeholders have been provided to the SIA team and findings related to social impacts have been incorporated into this report.

¹ Engagement activities were undertaken as part of the Aboriginal Cultural Heritage Assessment for the Project, and the findings relating to social impacts have been provided to the SIA team for incorporation into this SIA report.

Table 3-2. Other stakeholders identified (not engaged through SIA engagement program)

Stakeholder	Interest in the Project	Level of Engagement Required / Promised
Local Government – Politicians		
Councillors	<ul style="list-style-type: none"> Have an interest in community wellbeing and social outcomes for their community. Have an interest in economic development opportunities for region. 	<ul style="list-style-type: none"> Subject to broader EIS engagement plan (not engaged as part of SIA engagement program).
State Government – Politicians		
Local Members of Parliament – State Government	<ul style="list-style-type: none"> Have an interest in community wellbeing and social outcomes for their community. Have an interest in economic development opportunities for region. 	<ul style="list-style-type: none"> Subject to broader EIS engagement plan (not engaged as part of SIA engagement program).
Federal Government – Politicians		
Local Members of Parliament – Federal Government	<ul style="list-style-type: none"> Have an interest in community wellbeing and social outcomes for their community. Have an interest in economic development opportunities for region. 	<ul style="list-style-type: none"> Subject to broader EIS engagement plan (not engaged as part of SIA engagement program).

3.3 Engagement Activities

Engagement activities that have informed the SIA include those below (Table 3-3). Detailed information about the methods utilised for the community survey and landholder discussions is outlined in the following sections.

Table 3-3. Engagement activities by stakeholder

Primary Stakeholder	SIA Engagement Activity	Dates
Surrounding Landholders	<p>Individual meetings were offered to surrounding landholders likely to be impacted by Project impacts specifically to discuss the SIA.</p> <p>Face-to-face and phone meetings were undertaken with 17 of the 22 identified landholders undertaken over three periods. Three of the remaining landholders could not be contacted (did not return calls), and the remaining two landholders provided feedback over the phone to NCOPL and did not request a meeting with the SIA team.</p> <p>Face-to-face meetings with landholders were the preferred engagement method and 15 of the 17 landholders were met with face-to-face. Due to the Covid-19 pandemic in early 2020, the remaining two meetings were undertaken only via phone. Two landholders were contacted twice, once via a face-to-face meeting and once via the phone to discuss specific impacts.</p>	<ul style="list-style-type: none"> 4-7 November 2019 4-5 December 2019 30 April – 1 May 2020 (phone meetings, during Covid-19 pandemic)
Narrabri Mine CCC	Presentations and discussions at two meetings.	<ul style="list-style-type: none"> 5 December 2018 4 December 2019
Community	Community survey available online at the Whitehaven website and through an advertisement in the <i>Narrabri Courier</i> and the <i>Namoi Valley Independent</i> . Hard copies were available at the Narrabri Mine office, Whitehaven Gunnedah office, Narrabri Shire Library and Boggabri Library.	<ul style="list-style-type: none"> 24 July 2019 to 4 September 2019
Representatives from Narrabri Shire Council	Two face-to-face meetings and one videoconference meeting.	<ul style="list-style-type: none"> 4 December 2018 22 August 2019 1 May 2020 (videoconference, during Covid-19 pandemic)

Primary Stakeholder	SIA Engagement Activity	Dates
Representatives from Gunnedah Shire Council	One face-to-face meeting.	<ul style="list-style-type: none"> 22 August 2019
Representatives of the Gomeroi people (Narrabri Local Aboriginal Land Council and Gomeroi Narrabri Aboriginal Corporation)	Two face-to-face meetings with each group, and one phone meeting with one of the groups.	GNAC <ul style="list-style-type: none"> 4 December 2018 5 November 2019 NLALC <ul style="list-style-type: none"> 31 January 2019 5 December 2019 1 May 2020 (phone meeting, during Covid-19 pandemic)
Representatives of Service Providers such as NSW Health and Rural Fire Service	Phone meetings undertaken (where available).	<ul style="list-style-type: none"> August 2019
Representatives from Narrabri and District Chamber of Commerce	One face-to-face meeting. The Narrabri and District Chamber of Commerce does not represent the views of all businesses within the local area, however it was one of the largest business groups and was therefore chosen for engagement.	<ul style="list-style-type: none"> 21 August 2019

3.3.1 Community survey

A community survey was developed primarily to gather an understanding of local attitudes to mining, levels of community cohesion, and impacts of change to rural and environmental values. The community survey also gathered general information about the perceived strengths and weaknesses of the community, and the perceived impacts and benefits of the Project.

The community survey was available in both online and hard-copy formats and was open for responses from 24 July 2019 to 4 September 2019 (approximately six weeks).

The survey was advertised online on the Whitehaven Narrabri Mine webpage and through an advertisement in the local newspaper (the *Narrabri Courier* and the *Namoi Valley Independent*, 25 July 2019).

The hard-copy survey was available throughout this period at four locations:

- Narrabri Mine office, 10 Kurrajong Creek Road, Baan Baa NSW 2390, Mon-Fri: 7.00 am to 4.00 pm.
- Whitehaven Coal Gunnedah Office, 231 Conadilly Street, Gunnedah NSW 2380, Mon-Fri: 8.30 am to 5.00 pm.
- Narrabri Shire Library, 8 Doyle Street, Narrabri NSW 2390, Mon-Fri: 9.30 am to 5.00 pm, Sat: 9.30 am to 12.00 pm.
- Boggabri Library, 82 Wee Waa Street, Boggabri NSW 2382, Tues and Fri: 10:30am to 4:30 pm (closed 12:30 pm – 1:30 pm), Sat: 9.30 am to 12.00 pm.

The survey included a range of questions covering:

- Information about respondents, such as their location, their industry of employment and their age and gender.
- Views about the community, such as the characteristics of the community that are most valued and their community's strengths and weaknesses.
- Project impacts and benefits, such as their level of concern about the Project and the impacts that they perceive the Project may have.
- Views on agriculture, mining and tourism, such as the relative importance of these industries to the local area, and whether there is any conflict between these industries.
- Views on Narrabri Mine, such as whether the mine is perceived to be a good neighbour.

A copy of the survey is included in Appendix A.

A total of 81 responses were received. The majority of these were received through the online version of the survey (79 responses), with two hard copy survey responses also received.

The community survey methodology was valid however had the following limitations:

- The survey findings are considered to reflect the views of those most concerned about the Project. The survey did not utilise a random sampling technique or seek to gather a minimum number of responses. Therefore, the survey cannot be considered a representative sample and cannot be used to make any statements about the views of the population of the Narrabri LGA or Gunnedah LGA (or any other community). The number of responses and the demographic characteristics of the respondents make the survey valid for inclusion in the SIA.
- The survey was completed by 81 respondents. Analysis has been undertaken for local respondents (41) (those who stated that they lived within the Narrabri LGA and Gunnedah LGA) and non-local respondents (40), rather than at a smaller geographic scale. Responses from local respondents were prioritised in the SIA, however all responses were analysed (Appendix B).

3.3.2 Landholder discussions

Discussions with nearby landholders were undertaken in two groups:

- 4-7 November 2019: 12 landholder meetings were undertaken with 13 different landholders (one meeting was attended by two different landholders). These meetings were targeted towards landholders of properties adjacent to the existing operation and potentially currently experiencing impacts. The meetings were undertaken before technical studies were completed and predicted impacts were known. Meetings were primarily undertaken at each individual landholder's property and were undertaken by team members from NCOPL and the SIA team. A representative from NCOPL consistently explained the elements of the Project to each landholder, and landholders were then asked to describe their current experience of the existing operations and expected impacts from the Project. Other information was also collected, such as how long landholders had lived on their property.
- 4-5 December 2019: Two landholder meetings were undertaken in December 2019. These meetings were held in the same way as the discussions held in November 2019.
- 30 April-1 May 2020: All landholders that were previously contacted, were re-contacted by NCOPL by phone to discuss the outcomes of the technical studies. In most cases, the technical studies suggested there would be no additional impacts on these landholders. These landholders were given the option to contact the SIA team if there were further comments they wanted to make about social impacts. No landholders subsequently contacted the SIA team. Two of the re-contacted landholders were expected to be impacted, and therefore a meeting was arranged with the SIA team by phone. In addition, two new landholders were contacted to discuss specific impacts to their properties and a meeting was arranged with the SIA team via phone. Unfortunately, the meetings in April and May 2020 had to be undertaken by phone due to limitations during the Covid-19 pandemic.

Three of the landholders engaged via phone in April/May 2020 expressed that they would have preferred a face-to-face meeting with the SIA team, however at that time, face-to-face meetings were not possible due to Covid-19. Fortunately, most engagement with landholders was able to be undertaken with face-to-face meetings (15 of the 17 landholders were met with face-to-face). This feedback confirmed that the original efforts to meet with individual landholders face-to-face was the most appropriate engagement method.

3.4 Summary of Engagement Findings

The following is a summary of engagement findings from the community survey and discussions with:

- NSC;
- Gunnedah Shire Council (GSC);
- Landholders; and
- Aboriginal groups.

The following summary highlights key issues for the social baseline and social impacts sections. These findings have been incorporated into the social baseline and impact identification sections below, along with findings from discussions with other stakeholders. In addition, engagement findings are highlighted and discussed at the end of each sub-section of the social baseline in Section 4.

3.4.1 Community survey

The following were the key issues identified by the 41 local respondents to the community survey. As described in Section 3.3.1, the survey does not constitute a representative sample and therefore was not a reliable indicator of broader community views. It highlights the opinions of those most concerned about the Project.

3.4.1.1 Social baseline

The key findings of the community survey related to the social baseline are outlined below (ordered by the number of respondents raising the issue). The findings here relate to the views of the respondents to the community survey about the existing social baseline in the Narrabri LGA and Gunnedah LGA and do not necessarily relate specifically to NCOPL or the Narrabri Mine. The findings are useful only in contributing to the description of the existing social baseline.

- **Water (surface and groundwater):** Five local respondents raised existing issues associated with surface water or groundwater. This included a variety of responses related to concerns about water generally. One comment related to a concern that groundwater access had reduced in recent times for this particular respondent, and a suspicion that this may be due to mining in the area. One of these respondents also commented that the price of water had increased for farming use. It should be noted that the survey was undertaken during an extended period of drought.
- **Jobs/economy:** Two local respondents acknowledged the positive impacts of mining projects on the local economy and employment. However, three respondents noted the temporary nature of mining jobs, and considered that more effort was needed to develop sustainable long-term industries.
- **Climate change:** Two local respondents noted that the mining industry was contributing to greenhouse gas emissions and global climate change.
- **Community cohesion:** Nearly 90% of respondents to the community survey agreed with the statement that conflicts between mining and agriculture were negatively impacting community cohesion in the region. Where the opportunity was provided for additional comments in the survey, three local respondents explained that mining has impacted the social fabric of the community by dividing the community or exacerbating existing divides. One respondent suggested that the community disharmony was generally overstated. These respondents referred to the impacts of mining projects generally, rather than being specific to the existing Narrabri Mine operations.
- **Culture/Aboriginal values:** Only 15% of local respondents to the survey thought that local cultural and heritage values were respected. Three comments provided by local respondents suggested that there has been disrespect and disregard for Aboriginal cultural heritage and a belief that mining is not compatible with the protection of Aboriginal values. These comments were related to mining projects generally.
- **Air quality:** Three respondents commented about existing issues related to coal dust, air quality or pollution from the existing operations as well as from other mining operations in the area. Two of these respondents lived adjacent to the Narrabri Mine and one lived in Boggabri township or surrounds. One of the respondents clarified that the impact was related to a change in air quality from “fresh” air.
- **Noise:** Three respondents commented on the impacts of noise, including “extreme noise” and the “rumble of machinery” during the night. Some of these respondents identified they were currently experiencing these noise impacts. Two of these respondents lived adjacent to the Narrabri Mine and one lived in Boggabri township or surrounds.
- **Sense of place:** Almost all local respondents agreed that mining had changed the Narrabri and Gunnedah region (97%). In additional comments, three local respondents noted that mining was changing the region from a predominantly agricultural area to include mining. One local respondent who lived adjacent to the Narrabri Mine noted changes to their local community composition and their local sense of place as their neighbours had moved away due to broader trends in the agricultural industry as well as nearby mining activity.

- **Decision-making:** Most local respondents disagreed with the statement that community opinion is considered in decision making (78%). Additional respondent comments suggest that this was related to both a lack of input into decision-making of both government and mining proponents:
 - General comments were expressed by three local respondents of a lack of trust in government decision-making achieving a sustainable future, and the transparency of government processes.
 - Respondents generally disagreed (either disagreed or strongly disagreed) that NCOPL listened and responded to community concerns. One respondent who lived adjacent to the Narrabri Mine felt “voiceless, unrepresented, undervalued and impotent”.

3.4.1.2 Social impacts

The key findings of the community survey relative to social impacts of the Project are outlined below (ordered by the number of respondents raising the issue). Although an outline of the Project was provided with the community survey, some of the impacts identified by respondents were not likely impacts of the Project as it is an extension of an existing operation (for example, concerns regarding housing affordability). The impacts raised in the community survey were considered as potential issues for investigation. The analysis of these potential issues is undertaken in Section 5.

- **Water/groundwater:** Issues associated with surface water or groundwater (including impacts on the Great Artesian Basin recharge areas) raised by local respondents related to the use of groundwater as an impact (loss of water security, impacts on reduced supply for farmers), and water quality impacts. Eight local respondents thought the Project would have negative impacts on water availability or contamination (that is, water quality impacts). The Project is unlikely to have significant impacts on water availability; however, this feedback demonstrates the importance of water to respondents at the time the survey was undertaken (during a significant drought).
- **Culture/Aboriginal values:** Most local respondents to the community survey thought the Project would have a negative impact on local cultural or heritage values (89%). Local respondents referenced impacts to land and water as part of Aboriginal values that needed to be protected. One local respondent thought that it was inappropriate for sites to be fenced off within the Project area and only accessible with permission, while another local respondent thought that the Project would result in additional impacts to Aboriginal culture and heritage. It is understood that fencing of Aboriginal heritage sites to protect them from accidental damage is a common practice; however, this feedback demonstrates the importance of ongoing consultation with the Aboriginal community regarding heritage management measures.
- **Natural and conservation areas:** Most respondents thought the Project would have a negative impact on natural and conservation areas (89%), including a large proportion who thought it would be a major negative impact (80%). In additional comments, these views related to the environment generally although impacts to the Pilliga Forest were also mentioned.
- **Climate change:** Respondents thought that the short-term benefits of the Project needed to be balanced with the long-term negative impacts related to climate change. Seven local respondents commented specifically about the contribution the Project would have on climate change. One respondent thought that climate change impacts provided justification for the Project not to proceed.
- **Housing:** Most respondents thought the Project would have a negative impact on housing affordability and availability (86%). Given the Project is an extension of an existing operation, this is unlikely to be a material impact; however, this feedback demonstrates community concern regarding housing affordability.
- **Community cohesion:** Most respondents thought the Project would have a negative impact on community attributes such as cohesion, connectedness and harmony (81%). One respondent thought that the Project would exacerbate existing community divides.
- **Employment:** 27% of respondents thought the Project would have a positive impact on employment and training opportunities. In additional comments, two local respondents noted that the Project would contribute to diversification of the economy and ensure the sustainability of rural communities. However, other respondents thought that mining jobs were only temporary, and that sustainable (long-term) jobs should be the focus of economic development. Four respondents felt that jobs associated with the Project would not benefit the local community, going instead to “out-of-townners”, or jobs will be replaced by automation.

- **Property rights:** An adjacent landholder who responded to the survey was concerned about the Project due to their property being partially within Exploration Licence 6243. They believed that this devalued the property, leading to difficulty in selling, which was impacting their ability to make informed decisions about the future of their property.

The full results of the community survey are included in Appendix B.

3.4.2 Narrabri Shire Council discussions

3.4.2.1 Social baseline

The key findings of the NSC meetings, related to the social baseline, are outlined below:

- **Community cohesion:** The NSC officers who participated in engagement activities suggested that there was a feeling amongst residents of the Narrabri LGA that they were missing out on the benefits of mining. They also identified that there was competition for mining jobs between the Narrabri LGA and Gunnedah LGA populations.
- **Employment:** The NSC officers identified that local residents were not generally aware of how to access training and employment opportunities at the Narrabri Mine.
- **Infrastructure:** The NSC officers noted that the existing Narrabri Mine was impacting the road network around the site; however NCOPL and NSC will actively discuss how to reduce traffic impacts during busy times separately from the SIA engagement. The NSC officers also noted that there was a community perception that mining projects created pressure on community infrastructure and services including health services (such as doctors). NSC noted that this was a community perception only, and mining was generally not impacting this infrastructure.
- **Water:** The NSC officers suggested that access to water was a key concern for residents. They suggested that there was a perception that mining used too much water, exacerbating local scarcity of water during drought conditions. This perception added to the local anxiety and stress around water access. This was noted as a community perception only.

3.4.2.2 Social impacts

The key findings of the NSC meetings, related to social impacts, are outlined below:

- **Infrastructure:** The NSC officers highlighted that NCOPL would need to invest in community infrastructure to offset the impacts of the Project (even if not related to infrastructure), in order to create a net community benefit.

3.4.3 Gunnedah Shire Council discussions

3.4.3.1 Social baseline

The key findings of the GSC meetings, related to the social baseline, are outlined below:

- **Community cohesion:** The GSC officers who participated in engagement activities noted there was a perception within the local community that the mining industry was associated with negative social outcomes, such as increased drug use, alcohol consumption, and crime. They also suggested that there were ongoing tensions between the mining and agricultural industries in the Gunnedah LGA. This was often related to a perception that the mining industry utilises water that the community considers should be available for agricultural use, and that it also pushes up the price of water for others.
- **Employment:** The GSC officers noted there were significant skills shortages in the local labour market, so attracting new workers to local businesses was a concern. They identified that local businesses were concerned that young people were being attracted to the mining industry due to the higher wages and subsequently, local businesses were losing their trained staff.
- **Housing:** The GSC officers identified that there were housing affordability issues in Gunnedah LGA, with limited rental housing available for households on low incomes.

- **Infrastructure:** The officers identified that childcare services were at capacity and that this was likely to be an ongoing issue in the future. They also identified that access to health care services was an issue, with a shortage of doctors.

3.4.3.2 Social impacts

The key findings of the GSC meetings, related to social impacts, are outlined below:

- **Employment:** The GSC officers noted that the Project would support continued employment opportunities and the LGA economy generally.
- **Housing:** The GSC officers noted that the Project, being an extension to the mine life, may encourage more employees to reside locally; this increased demand may make housing less affordable, resulting in lower income earners having difficulty accessing accommodation.

3.4.4 Landholder discussions

3.4.4.1 Social baseline

The key findings of the landholder discussions related to the social baseline are outlined below (ordered by the number of landholders raising the issue):

- **Noise:** Ten nearby landholders identified that they could hear mine-related noise, mostly the noise when the bulldozers on the coal stockpile were reversing, but sometimes also noise emanating from the main ventilation shaft. Five landholders considered that this was not a major issue; rather that it was a minor nuisance or interruption to the otherwise low noise environment of the rural area. For the five other landholders however, the noise was reportedly loud enough to cause impacts to their quality of life, including disrupting their sleep. These landholders were located in proximity to the existing operations. Also commonly mentioned was noise related to trains travelling to and from the site. Residents mentioned train-related noise was variable, as it seemed to depend on the training of the drivers, as to whether they could slow down without excessive noise being generated as the wagons come to a stop. They identified that the volume of this noise also depended on various weather-related events such as whether it was still or windy, and cloud coverage.
- **Air quality:** Five nearby landholders identified that they experienced air quality impacts, almost exclusively from coal dust. Landholders noted that they noticed coal dust in their homes, on their roofs, and in their drinking water filters. Most considered that this was impacting their quality of life (four landholders) and a small number of nearby landholders worried about the health impacts of potentially drinking water and breathing air with coal dust in it (two landholders). The amount of coal dust experienced varied based on the direction and speed of wind.
- **Stress and anxiety:** Stress and anxiety was identified as a concern by nearby landholders due to uncertain property prices and uncertainty about the future:
 - Four nearby landholders experienced stress and anxiety due to uncertainty over whether their property would be acquired for a future mine extension. Some expected that the mine would expand over time, necessitating further land acquisition, and were therefore unsure as to whether they should invest in their homes and businesses given this expectation. Others mentioned a lack of communication of long-term planning from NCOPL, and communication about these plans, which made decisions difficult.
 - Four nearby landholders were concerned about the value of their properties. One landholder felt “trapped” as they were trying to sell their property and they felt the level of interest in the property was low due to its proximity to Narrabri Mine. This was having a substantial impact on their finances due to them having already purchased another property elsewhere. The three other landholders expressed more general concerns about whether their property would be worth less when they wanted to sell in the future.
- **Agency in Narrabri Mine decisions:** Four landholders thought that they had a lack of agency (that is, being able to make choices and decisions to influence events) in decisions made by Narrabri Mine. This was primarily due to a lack of communication and engagement about decisions before they are made.

- **Odour:** Four landholders said that they were experiencing odour impacts. Three thought the odour was an annoyance only while one thought the odour was impacting their quality of life. They described the odour as a rotten smell. During discussions with these landholders, representatives from NCOPL explained that the odour is due to a build-up of algae in the pond, and a solution was being trialled to help reduce the frequency and severity of the odour. Most landholders thought the odour was a temporary inconvenience and were satisfied that NCOPL was aware of the problem and looking to improve the issue.
- **Property value:** Three landholders thought that their properties had been devalued to some extent due to the proximity of their property to Narrabri Mine. This was usually because they were experiencing noise and other amenity impacts and thought that potential buyers would be discouraged.
- **Employment:** Three landholders thought that the presence of the mining industry in the region or Narrabri Mine specifically provided positive impacts for the community by providing employment and supplementing the agricultural industry as another employment option for residents during drought.
- **Loss of farming families in local area:** Two nearby landholders raised concerns around the loss of families in the area that resulted in them feeling that the local community was changing and that they felt less connected to their neighbours and community. These landholders did note that this may be related to trends in agriculture (for example, amalgamation of smaller farming properties to achieve economies of scale and continued efficiency improvements through automation), not just the Narrabri Mine acquisitions.
- **Water (surface and groundwater):** Two nearby landholders had concerns about water access and changing surface water flow patterns related to the existing operation. These concerns related to how surface water flows over the existing Narrabri Mine site and on to their property, and how groundwater has been impacted by the existing operations (this concern was expressed by a resident leasing land from NCOPL at the current site).
- **Lighting:** Two nearby landholders adjacent to the Narrabri Mine identified that they could see light spill from the mine at night. One considered this an issue impacting their quality of life, while the other thought this was a nuisance only.
- **Traffic:** Additional traffic noise was reported, as well as difficulty accessing the highway; however, only one nearby landholder thought that traffic on the highway was an issue and this was only during changes in shift times at the Narrabri Mine.
- **Community cohesion:** One nearby landholder suggested that there was an existing divide between “the haves and the have nots” and that mining projects contribute to this divide. They noted that this divide was felt in the perceived high price of goods and services in Narrabri for example. They suggested that the price of goods and services was higher because they are affordable for mine workers with higher incomes; however, are less affordable for other residents, creating a feeling of exclusion and division.

3.4.4.2 Social impacts

The key findings of the landholder discussions related to social impacts of the Project are outlined below:

- **Stress and anxiety:** Two landholders that were actively negotiating acquisition by NCOPL reported that they felt the process was unnecessarily long, and this created stress and anxiety about their future.

3.4.5 Aboriginal groups discussions

3.4.5.1 Social baseline

The key findings of the discussion with Aboriginal groups, related to the social baseline, are outlined below:

- **Employment:** The high unemployment rate for Aboriginal people was noted by members of the Aboriginal groups. They thought that while Aboriginal people were working at the Narrabri Mine, the roles were often lower-skilled jobs and additional career pathways were needed to encourage upskilling and access to higher incomes.
- **Housing:** Concerns were raised regarding the current affordability of housing and the potential for rising housing prices to affect low income households.

- **Community cohesion:** Members of the Aboriginal groups thought that the distribution of opportunities from the Narrabri Mine had caused conflict between different Aboriginal groups due to the favouring of one group over another.
- **Fears and aspirations:** It was reported that current Aboriginal employees at the Narrabri Mine had experienced discrimination and verbal abuse within the workplace. This detracted from the NCOPL initiatives which encourage Aboriginal people to work at the mine. Any form of harassment, bullying, discrimination or victimisation is not tolerated at NCOPL and all complaints will be taken seriously (as outlined in the Whitehaven Employee Code of Conduct). These types of experiences should therefore be dealt with appropriately by NCOPL if brought to the attention of staff.
- **Infrastructure:** Members of the Aboriginal groups acknowledged the positive impact NCOPL has had through its financial contributions to local communities, which they identified strengthen community groups and services.
- **Cultural values:** Aboriginal groups voiced concern over the current arrangements controlling access to the Narrabri Mine site, as they impeded their ability to protect culturally sensitive areas, as well as to educate young people about plants and animals within the Project area. It was also suggested that more needed to be done to protect identified Aboriginal cultural heritage sites, such as by improved fencing.

3.4.5.2 Social impacts

The key findings of the discussion with Aboriginal groups, related to social impacts, are outlined below:

- **Cultural values:** The Aboriginal Cultural Heritage Assessment for the Project has allowed access to the Project area through the cultural heritage surveys to identify any existing Aboriginal cultural heritage sites. These Aboriginal cultural heritage sites would not have been identified otherwise. The Project may therefore create opportunities for these sites to be protected and accessed by Aboriginal people in the future.

Section 4 Social Baseline

4.1 Community

4.1.1 Introduction to local communities

The area immediately surrounding the Narrabri Mine consists of agricultural properties. These are located to the north, east and south of the Narrabri Mine. The Mungindi Railway and Kamilaroi Highway, which both run between Narrabri and Gunnedah, are located immediately east of the Narrabri Mine. The Pilliga East State Forest is located immediately to the west of the Narrabri Mine.

The smaller geographic areas described below are located within the social area of influence for the Project, which consists of Narrabri LGA and Gunnedah LGA (a map showing these areas is provided in Figure 2-2).

The village of Baan Baa is the closest settlement to the Project. It is located 10 km to the south-east of the Project Pit Top Area. The Baan Baa State Suburb Collection area is the most appropriate Australian Bureau of Statistics (ABS) geography for analysis of the Baan Baa population. This area includes Baan Baa and many of the landholders in the vicinity of the Project. In this SIA, this area is referred to as **“Baan Baa and surrounds”**. In 2016, Baan Baa and surrounds had 65 occupied private dwellings and a population of 163 people, including 46 families.

“Narrabri township” is the municipal centre for the Narrabri LGA and is located approximately 22 km north-west of the Project Pit Top Area. The Narrabri Urban Centre/Locality (UCL) is the most appropriate ABS geography for analysis of its population. In 2016, Narrabri township had 2,156 occupied private dwellings, housing 5,903 people including 1,463 families.

“Boggabri township” is located approximately 25 km south-east of the Project Pit Top Area and within the Narrabri LGA. The Boggabri UCL is the most appropriate ABS geography for analysis of its population. In 2016, the Boggabri township had 316 occupied private dwellings, housing 856 people including 209 families.

“Gunnedah township” is the municipal centre for the Gunnedah LGA and is located approximately 60 km south-east of the Project Pit Top Area. The Gunnedah UCL is the most appropriate ABS geography for analysis of its population. In 2016, Gunnedah township had 3,076 occupied private dwellings, housing 7,985 people including 2,024 families.

The geographic areas described in this section, in addition to the wider Regional NSW and NSW as a whole, make up the ‘study areas’ that are analysed in this SIA.

4.1.2 Population composition

Although no significant additional construction or operational workforce is proposed as part of the Project likely to result in population growth, the retention of the existing mining workforce for a longer period of time may support the maintenance of the existing population for a longer period. Additionally, the extension may encourage some of the workforce that currently does not reside in the area of social influence to move into the area, and thus contribute to a very small increase in population. Therefore, data on the existing population, population trends, age mix and projected population has been outlined in this section. The impact assessment (Section 5) will utilise the data in the social baseline as required to assess the relevant impacts of the Project on population.

The populations for each of the townships near the Project are shown below for 2016 (Table 4-1). The two closest centres to the Project are Baan Baa and Narrabri, followed by Boggabri and Gunnedah.

Due to its small population, data for Baan Baa is only available for the whole area, including the centre itself and the surrounding rural areas. In 2016, the population of this area (Baan Baa and surrounds), which covers 254.9 square kilometres, was 163 people. The population of Narrabri township was 5,901 people, while Boggabri township had 856 people and Gunnedah township had 7,985 people.

Most areas had a balance of males and females; however, Baan Baa and surrounds had a higher proportion of males than females in 2016 (90 males compared to 75 females).

Table 4-1. Population by sex, Study areas, 2016

Area	2016		
	Males	Females	Total
Baan Baa and surrounds	90 (55.2%)	75 (46.0%)	163 (100%)
Narrabri township	2,851 (48.3%)	3,050 (51.7%)	5,901 (100%)
Boggabri township	434 (50.7%)	425 (49.6%)	856 (100%)
Gunnedah township	3,900 (48.8%)	4,079 (51.1%)	7,985 (100%)
Narrabri LGA	6,526 (49.9%)	6,555 (50.1%)	13,083 (100%)
Gunnedah LGA	6,106 (50.0%)	6,109 (50.0%)	12,214 (100%)
Regional NSW	1,301,714 (49.2%)	1,341,814 (50.8%)	2,643,535 (100%)
NSW	3,686,007 (49.3%)	3,794,216 (50.7%)	7,480,230 (100%)

Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon. Accordingly, the totals may not sum to exact numbers due to this effect.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Narrabri LGA experienced significant population decline between 2001 and 2006 of around 950 people (Table 4-2). However, between 2006 and 2011 the population was relatively steady, and between 2011 and 2016 the population declined at a slower rate. Between 2001 and 2016, the population declined at an average annual rate of 0.5%, this compares to moderate growth in Regional NSW of 0.7% and NSW of 1.1%.

Gunnedah LGA also experienced population decline between 2001 and 2006 of around 500 people, however the population has since increased such that the population in 2016 was similar to the population in 2001 (Figure 4-1). Over the 15 years between 2001 and 2016 the population has grown at an average annual rate of 0.1%, which is significantly lower than the rates for Regional NSW and NSW as a whole.

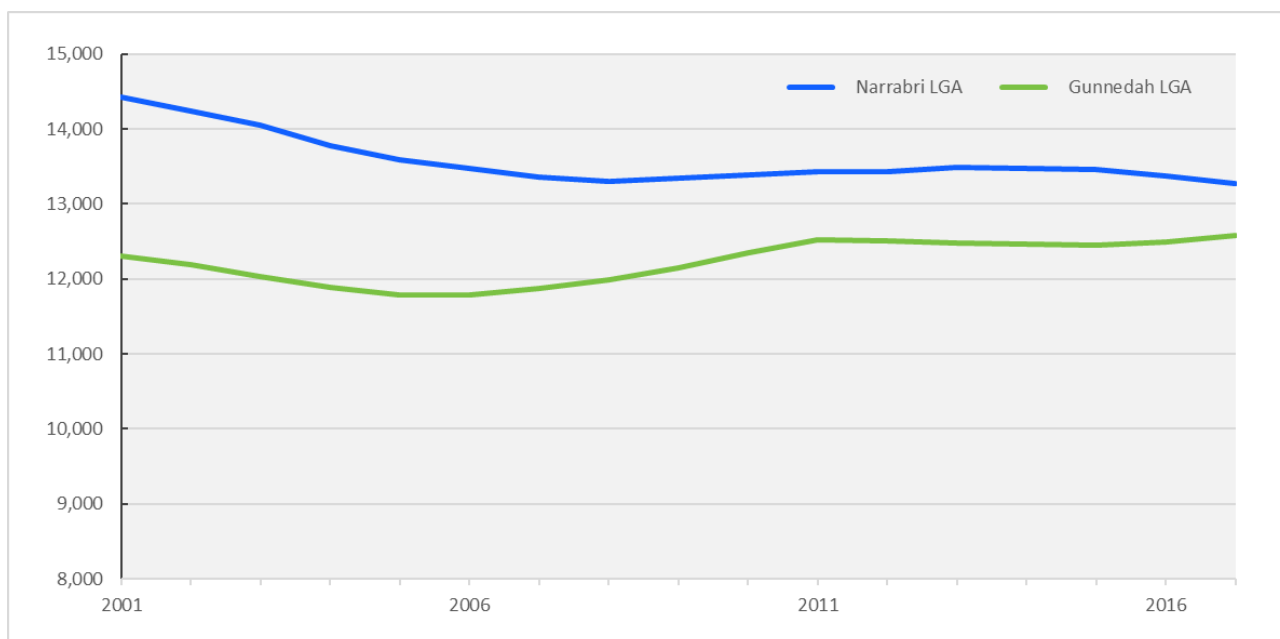
The growth in population, or the reduced rate of population decline after 2006, may be due to activity in the resources sector as a number of projects commenced operations during this period in the local area (Boggabri Coal Mine [2006], Tarawonga Coal Mine [2006], Rocglen Coal Mine [2008], Narrabri Mine [2012], Maules Creek Coal Mine [2015] - see Section 4.5.2). The reduced rate of population decline or stabilisation of population may have supported the ongoing provision of social infrastructure in the area of social influence and is generally considered a positive outcome.

Table 4-2. Population growth, Study areas, 2001-2016

Area	2001	2006	2011	2016	Average Annual Growth Rate 2001-2016
Narrabri LGA	14,422	13,477	13,438	13,367	-0.5%
Gunnedah LGA	12,306	11,782	12,519	12,491	0.1%
Regional NSW	2,427,769	2,486,529	2,609,580	2,707,935	0.7%
NSW	6,530,349	6,742,690	7,218,529	7,732,858	1.1%

Note: Based on estimated resident population.

Source: (Australian Bureau of Statistics, 2018b) [ABS.Stat];

Figure 4-1. Resident population, Narrabri LGA and Gunnedah LGA, 2001-2016

Note: Based on estimated resident population.

Source: (Australian Bureau of Statistics, 2018b) [ABS.Stat];

The median age for each of the study area populations is shown below (Table 4-3). Baan Baa and surrounds had a higher median age of 45 years, while the other areas had lower median ages.

Table 4-3. Median age, Study areas, 2016

Area	2016
Baan Baa and surrounds	45 years
Narrabri township	38 years
Boggabri township	40 years
Gunnedah township	39 years
Narrabri LGA	40 years
Gunnedah LGA	40 years
Regional NSW	43 years
NSW	38 years

Note: Based on usual place of residence.

Source: (Australian Bureau of Statistics, 2017a) [Quickstats];

Given the low population count, the age structure of Baan Baa and surrounds is variable and should only be considered an indication of the age structure of the area (Figure 4-2). It appears, however, that the population includes higher proportions of older adults (50-64 years of age) compared to Regional NSW.

Narrabri township includes slightly higher proportions of young children (0-9 years) and young adults (25-34 years) and slightly lower proportions of older adults (from around 44 years to 74 years) compared to Regional NSW.

There were higher proportions of children (5-9 years) in Boggabri township, middle-aged adults (from around 35-49 years) and elderly people (75-84 years).

Gunnedah township included a higher proportion of children (0-9 years), young adults (25-34 years), and elderly people (75 years and older), and slightly lower proportions of other age groups, compared to Regional NSW.

Figure 4-2. Age structure, Study areas (townships), 2016



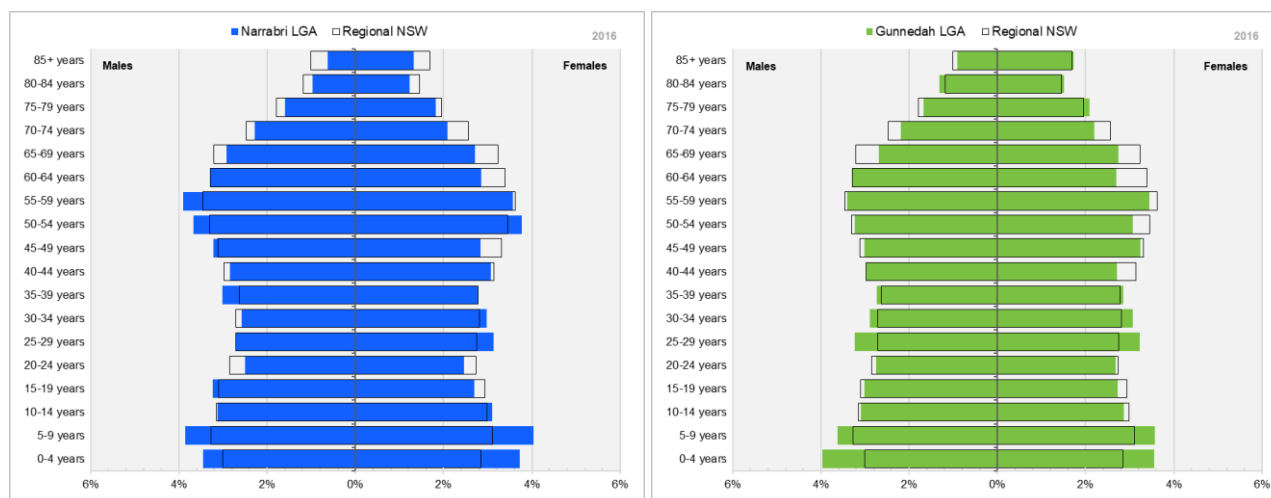
Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

The Narrabri LGA had higher proportions of children (0-9 years) and slightly higher proportions of some adult age groups compared to Regional NSW (Figure 4-3). It also had slightly lower proportions of older people (older than around 65 years of age) compared to Regional NSW.

The Gunnedah LGA also had higher proportions of children (0-9 years) compared to Regional NSW, similar to Narrabri LGA. However, it also had slightly higher proportions of young adults than Regional NSW (25-34 years). Gunnedah LGA also had slightly lower proportions of some older age groups (mainly 60-74 years), but with similar levels of elderly age groups (older than around 75 years of age), when compared to Regional NSW.

Figure 4-3. Age structure, Study areas (LGAs), 2016



Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon. Accordingly, the totals may not sum to exact numbers due to this effect.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Communities in the study areas are generally ageing, with the proportion of older people to younger people higher than the NSW average. Between 2001 and 2016, the number of younger people (up to around 54 years), and their proportion of the population, has generally decreased, while the number of older people (around 55 years and older), and their proportion of the population, has increased in Narrabri LGA and Gunnedah LGA (Table 4-4).

There are exceptions to this broad trend in certain age groups. In Gunnedah LGA for example, the number of people aged 25-34 years between 2001 and 2006 decreased by 271 people, however, in the following two five-year periods the number of people in this age group increased by 190 people and then 232 people. This also corresponds with growth in the number of young children during this period (0-5 years). This growth in the number of young adults in the Gunnedah LGA may reflect greater training and employment opportunities available in the area including, potentially, from work in the resources sector (as a number of projects commenced operations during this period – see Section 4.5.2).

Table 4-4. Age structure change, Study areas (LGAs), 2001-2016

Year	2001	2006	2011	2016
Narrabri LGA				
0-4 years	1,020 (7.4%)	954 (7.3%)	1,003 (7.8%)	943 (7.2%)
5-14 years	2,194 (15.9%)	2,045 (15.6%)	1,870 (14.5%)	1,845 (14.1%)
15-19 years	838 (6.1%)	837 (6.4%)	822 (6.4%)	777 (5.9%)
20-24 years	795 (5.8%)	651 (5.0%)	660 (5.1%)	648 (5.0%)
25-34 years	1,821 (13.2%)	1,542 (11.8%)	1,433 (11.1%)	1,491 (11.4%)
35-44 years	2,145 (15.5%)	1,848 (14.1%)	1,645 (12.7%)	1,529 (11.7%)
45-54 years	1,835 (13.3%)	1,819 (13.9%)	1,856 (14.3%)	1,759 (13.4%)
55-64 years	1,455 (10.5%)	1,547 (11.8%)	1,614 (12.5%)	1,785 (13.6%)
65-74 years	1,008 (7.3%)	1,048 (8.0%)	1,167 (9.0%)	1,308 (10.0%)
75-84 years	532 (3.9%)	624 (4.8%)	638 (4.9%)	742 (5.7%)
85 years and over	174 (1.3%)	197 (1.5%)	231 (1.8%)	256 (2.0%)
Total	13,817 (100.0%)	13,112 (100.0%)	12,939 (100.0%)	13,083 (100.0%)
Gunnedah LGA				
0-4 years	903 (7.6%)	742 (6.4%)	887 (7.4%)	918 (7.5%)
5-14 years	1,955 (16.5%)	1,854 (16.1%)	1,666 (13.8%)	1,609 (13.2%)
15-19 years	779 (6.6%)	748 (6.5%)	827 (6.9%)	702 (5.8%)
20-24 years	517 (4.4%)	556 (4.8%)	655 (5.4%)	664 (5.4%)
25-34 years	1,369 (11.6%)	1,098 (9.5%)	1,288 (10.7%)	1,520 (12.5%)
35-44 years	1,725 (14.6%)	1,505 (13.0%)	1,410 (11.7%)	1,376 (11.3%)
45-54 years	1,554 (13.1%)	1,686 (14.6%)	1,663 (13.8%)	1,532 (12.6%)
55-64 years	1,285 (10.8%)	1,396 (12.1%)	1,486 (12.3%)	1,573 (12.9%)
65-74 years	970 (8.2%)	1,085 (9.4%)	1,154 (9.6%)	1,192 (9.8%)
75-84 years	591 (5.0%)	666 (5.8%)	762 (6.3%)	801 (6.6%)
85 years and over	198 (1.7%)	201 (1.7%)	268 (2.2%)	318 (2.6%)
Total	11,846 (100.0%)	11,537 (100.0%)	12,066 (100.0%)	12,205 (100.0%)

Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon. Accordingly, the totals may not sum to exact numbers due to this effect.

Source: (Australian Bureau of Statistics, 2017b) [Time Series Profile];

According to NSW Government projections (NSW Government [Department of Planning and Environment], 2019), the population of the Narrabri LGA is expected to continue to slowly decline over the next 20 years (Table 4-5), from approximately 13,400 residents in 2016 to 12,500 residents in 2041. This represents an average annual rate of decline of 0.3%. However, the population of the Gunnedah LGA is expected to slowly grow from approximately 12,500 residents in 2016 to 12,600 residents in 2036, an average annual growth rate of close to zero. This is a lower rate than the expected average growth rate for NSW at 1.3%.

These NSW Government population projections are the 2019 edition (based on 2016 census data). These projections are undertaken at a high level for the entire state of NSW and may not take into account specific changes in smaller areas, for example, they may not consider proposed major projects in the social area of influence that may increase population growth (see Section 4.5.2).

Compared to the NSW Government 2016 edition projections, the updated projections expect slightly higher growth in Narrabri LGA but lower growth in Gunnedah LGA (Table 4-5).

Table 4-5. Population projections, Study areas, 2016-2041

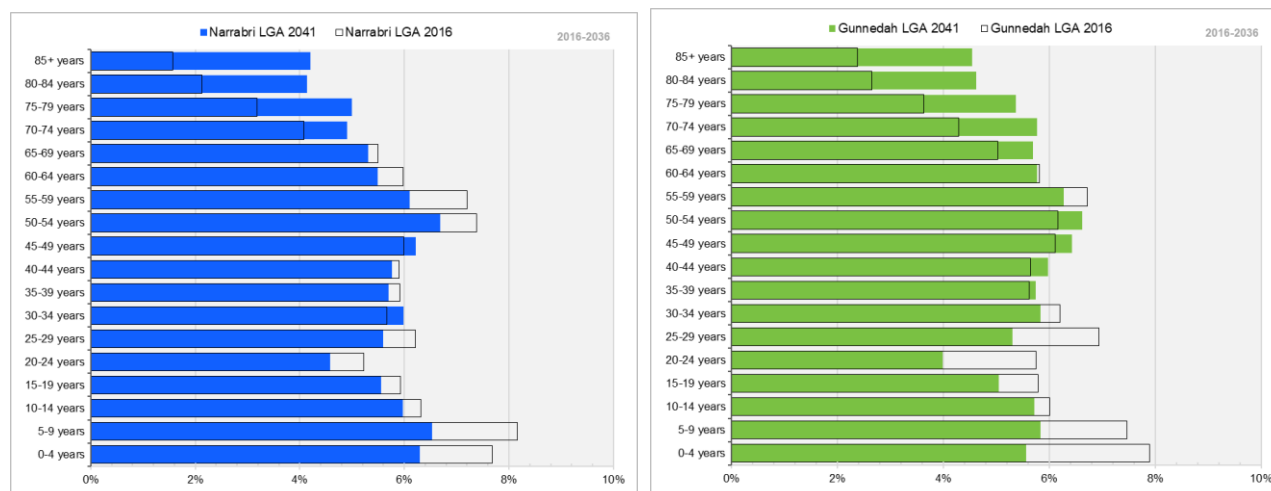
Area	Actual 2016	Projected 2016	2021	2026	2031	2036	2041	Growth Rate 2016-2041 or 2036
2019 Edition								
Narrabri LGA	13,367	13,367	13,294	13,176	12,993	12,767	12,504	-0.3%
Gunnedah LGA	12,491	12,491	12,606	12,700	12,725	12,692	12,615	0.0%
NSW	7,732,858	7,732,858	8,414,978	9,011,010	9,560,567	10,077,964	10,572,696	1.3%
2016 Edition								
Narrabri LGA	13,367	13,400	13,300	13,100	12,800	12,400	NA	-0.4%
Gunnedah LGA	12,491	12,800	13,050	13,300	13,450	13,600	NA	0.3%
NSW	7,732,858	7,748,000	8,297,500	8,844,700	9,386,850	9,925,550	NA	1.2%

Note: Based on estimated resident population. 2016 population is a NSW Government estimate and may not align with other data in this report. Source: (NSW Government [Department of Planning and Environment], 2019);

Between 2016 and 2041, the populations of Narrabri LGA and Gunnedah LGA are expected to age quite significantly (Figure 4-4). According to NSW Government projections, the population of the Narrabri LGA aged 70 years and older, is expected to increase from 11.0% in 2016 to 18.2% in 2041 (an increase of around 800 people). For Gunnedah LGA, the proportion of the population aged 70 years and older, is expected to increase from 12.9% in 2016 to 20.3% in 2041 (an increase of around 940 people).

Between 2016 and 2041, the number and proportion of young adults is expected to decline. For Narrabri LGA, the number of young adults aged 15-34 years is expected to decline by around 360 people and decline from 23.0% to 21.7% of the total population. For Gunnedah LGA, the decline is greater; the number of young adults is expected to decline by around 540 people and decline from 24.7% to 20.2% of the total population.

Figure 4-4. Future age structure, Study areas (LGAs), 2016 and 2041



Note: Based on estimated resident population. Source: (NSW Government [Department of Planning and Environment], 2019);

4.1.3 Non-local worker composition

An additional 1,151 people had a primary place of work within the Narrabri LGA or Gunnedah LGA in 2016 but live outside this local area (Table 4-6). These people are referred to in this report as non-local workers or non-resident workers.

Of these non-local workers, 611 workers were employed in Narrabri LGA and 540 workers were employed in Gunnedah LGA. The majority of non-local workers were male (83.1% in Narrabri LGA and 68.9% in Gunnedah LGA).

These figures confirm anecdotal reporting that non-local workers are generally males. Consideration of the social effects relating to these workers is provided in later sections (for example, Sections 4.3.1 and 4.3.3).

Table 4-6. Non-local workers, Sex, Study areas (LGAs), 2016

Area	2016		
	Males	Females	Total
Narrabri LGA	508 (83.1%)	103 (16.9%)	611 (100%)
Gunnedah LGA	372 (68.9%)	168 (31.1%)	540 (100%)

Note: Based on place of work. Non-local workers work within Narrabri LGA or Gunnedah LGA but live outside these areas. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.
Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

In both Narrabri LGA and Gunnedah LGA, non-local workers were from across key working age groups from 20 years to 64 years (Table 4-7).

Table 4-7. Non-local workers, Age groups, Study areas (LGAs), 2016

Age Group	Narrabri LGA	Gunnedah LGA
15-19 years	11 (1.8%)	22 (4.1%)
20-24 years	28 (4.5%)	57 (10.6%)
25-34 years	160 (25.8%)	120 (22.4%)
35-44 years	169 (27.3%)	120 (22.4%)
45-54 years	125 (20.2%)	91 (17.0%)
55-64 years	103 (16.6%)	98 (18.3%)
65-74 years	20 (3.2%)	21 (3.9%)
75-84 years	3 (0.5%)	3 (0.6%)
85+ years	0 (0.0%)	4 (0.7%)
Total	619 (100%)	536 (100%)

Note: Based on place of work. Non-local workers work within Narrabri LGA or Gunnedah LGA but live outside these areas. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.
Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Of the 1,151 non-local workers in Narrabri LGA and Gunnedah LGA, 411 worked in the mining industry (35.7%) (Table 4-8).

Table 4-8. Non-local workers, Mining industry, Study areas (LGAs), 2016

Area	2016		
	Males	Females	Total
Narrabri LGA	334 (95.2%)	17 (4.8%)	351 (100%)
Gunnedah LGA	57 (95.0%)	3 (5.0%)	60 (100%)

Note: Based on place of work. Non-local workers work within Narrabri LGA or Gunnedah LGA but live outside these areas. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.
Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.1.4 Community values

The Narrabri Shire Council Community Strategic Plan 2017-2027 (Narrabri Shire Council, 2017) captures the long-term vision for local communities and indicates local community priorities. The Plan notes that mining; agriculture, forestry and fishing; and manufacturing are key industries making up the local economy.

The plan describes the vision for the Narrabri LGA as being “a strong and vibrant regional growth centre providing a quality living environment for the entire Shire community”. Objectives and strategies identified in the Plan to assist in achieving this vision are outlined in Table 4-9 where relevant to the Project.

Table 4-9. Narrabri Shire Council Community Strategic Plan Objectives and Strategies

Theme	Objectives and Strategies
Theme 2: Our Environment: Environmentally Sustainable and Productive Shire	Objective 2.1 We will maintain our open spaces, natural environment and heritage for future generations
	Objective 2.4 The impacts of extractive industries on the environment will be minimised
	2.4.1 The community is informed by real-time regional dust monitoring data to inform personal decisions.
	2.4.2 Projects are managed to minimise active disturbance areas and limit time to revegetation
	2.4.3 Groundwater extractions are maintained in an environmentally sustainable manner to ensure long-term viability and quality
	2.4.4 Potential environmental and community impacts are minimised through thorough assessment and independent monitoring
Theme 3: Our Economy: Progressive and Diverse Economy	Objective 3.1 We will stimulate business and tourism by maximising our assets and attracting regional events
	Objective 3.3 Value adding and industry innovation will drive employment
	3.3.4 Promote opportunities created through abundant supply of energy and easy access to transport logistics
	Objective 3.4 Adequate housing options will be available to meet demands across the Shire

Of particular relevance, these objectives and strategies reflect the importance to the local community of balancing environmental sustainability, agricultural production, and pursuing a diverse economy.

The Gunnedah Shire Council Community Strategic Plan 2017-2027 (Gunnedah Shire Council, 2017) describes the vision for the region as “a prosperous, caring and proud community reflected in the achievements and aspirations of the people”. Expanding on this vision, the Plan notes the following vision elements:

- Community spirit: We have welcoming towns, villages and rural areas working in partnership to share the good times and bad, looking out for, and supporting, one another. We genuinely care.
- Environmental care: We embrace preservation of our heritage, our natural resources and our social fabric to achieve sustainability.
- Lifestyle access: We enjoy access to services and facilities in Gunnedah and Tamworth, yet benefit from the peace, tranquillity, safety, security, beauty and friendliness of our rural community.

Objectives and strategies identified in the Plan to assist in achieving this vision are outlined in Table 4-10 where relevant to the Project.

Table 4-10. Gunnedah Shire Council Community Strategic Plan Objectives and Strategies

Theme	Objectives and Strategies
Engaging and Supporting the Community	Objective 1.1 Community leadership is strengthened and volunteers are engaged
	1.1.3 Build the capacity of community organisations and sporting groups to remain sustainable in the long term.
	1.1.4 Encourage and support village hall committees and progress associations, service groups, action groups and other community organisations involved in delivering activities and programs that benefit the local community
	Objective 1.3 Increased local investment from other sources including the State and Commonwealth Governments as well as developers
	1.3.3 Advocate for local facilities and services to receive funding from mining and other major developments
Building our Shire's Economy	Objective 1.5 Strategically managed infrastructure
	1.5.1 Provide and maintain safe, serviceable and accessible public facilities, parks and infrastructure including roads, footpaths and stormwater drains
	Objective 2.1 A growing population and diversified economy
	2.1.1 Develop a diversified economy that is a balance of all economic contributors
	Objective 2.3 Increased tourism and promotion of the Gunnedah Shire
	2.3.1 Actively seek to bring business, sporting and cultural events to the Gunnedah Shire
	2.3.3 Actively market the Gunnedah Shire as a destination and promote our brand both nationally and internationally
	2.3.4 Warmly welcome new residents and families, offering assistance to help them integrate into the community
	2.3.6 Offer appropriate accommodation options and vibrant cafes and restaurants

Theme	Objectives and Strategies
	<p>Objective 2.4 The Gunnedah Shire is an attractive place to invest</p> <p>2.4.1 Market and promote the Gunnedah Shire as an attractive place for business and investment</p> <p>Objective 2.5 Skilled workforce and quality local educational opportunities</p> <p>2.5.1 Encourage new residents with skills to the area to supplement our skilled workforce</p> <p>2.5.2 Advocate for quality local educational services and seek opportunities in the tertiary sectors for facilities and courses that meet our regional training needs</p> <p>2.5.3 Support the supply of adequate and quality after school care, childcare and early childhood support services</p>
Retaining our Quality of Life	<p>Objective 3.2 Improved housing affordability</p> <p>3.2.1 Encourage a mix of housing types that is affordable, adaptable, accessible and suited to community needs</p> <p>Objective 3.3 Villages are vibrant and sustainable</p> <p>3.3.3 Implement initiatives that deliver attractive, well-serviced villages whilst retaining the unique identity of each location</p> <p>Objective 3.4 Reduced crime and anti-social behaviour</p> <p>3.4.3 Encourage community safety by incorporating crime prevention through environmental design principles in new development</p> <p>Objective 3.5 Our younger people are attracted, retained and developed</p> <p>3.5.2 Attract and retain young people and families to our area to maintain population balance</p> <p>3.5.3 Council and local business provide traineeships and apprenticeship opportunities for young people across a variety of industry sectors</p> <p>Objective 3.7 Improved access to essential services</p> <p>3.7.1 Advocate for access to quality medical and mental health services and facilities</p> <p>3.7.3 Maintain services that support people with a disability, the socially disadvantaged and persons at risk</p> <p>3.7.5 Support initiatives which foster connectedness, resilience and opportunity within the early childhood community</p>
Protecting and Enjoying our Beautiful Surrounds	<p>Objective 4.1 Balance between development and environmental protection</p> <p>4.1.4 Lobby for planning controls that balance the need for mining, agriculture and protection of the environment which reflects in the long-term future for the environment</p> <p>Objective 4.2 Native fauna is secured, biodiversity is protected and native vegetation thrives</p> <p>4.2.3 Encourage cooperation between industry (such as mining, agriculture) and environmental groups to rehabilitate negatively impacted areas</p>

Of particular relevance, these objectives and strategies suggest the importance of balancing development and environmental protection, as well as housing affordability, provision of adequate community services and retaining young people in the community.

4.1.5 Community strength and resilience

Community strength and resilience refers to the characteristics of a community that make it sustainable over generations and resilient in times of crisis, including access to resources, skills and commitment (Torrens University Australia, 2019). Strength and resilience can be measured by a range of survey questions including factors such as:

- Participation in volunteering.
- Availability of support in times of crisis.
- Providing support to others.
- Perception of safety.
- Acceptance of other cultures.
- Experience of discrimination or unfair treatment.

Two additional terms are utilised in this research. These include “age-standardised rate” and “standardised ratio”. Age standardisation is a process of adjusting data so that it can be compared between two areas with different age profiles. The “standardised ratio” is a comparison of the rate for a particular area against the rate for Australia, which is assigned a value of 100. A ratio below 100 is proportionally less than the national rate, while a ratio above 100 is proportionally higher than the national rate.

Box 4-1. Synthetic estimation techniques

Through the use of synthetic estimation techniques, it is possible to produce Population Health Area level statistics. Synthetic estimation predicts a value for an area with a small population based on modelled survey data and known characteristics of the area. A modelled estimate can be interpreted as the likely value for a 'typical' area with those characteristics.

The model used for predicting small area data is determined by analysing data at a larger geographic level. The relationship observed at the higher geographic level between the characteristic of interest and known characteristics is assumed to also hold at the small area level.

The estimates are made by applying the model to data on the known characteristics that can be reliably estimated at the small area level. This modelling technique can be considered as a sophisticated prorating of larger area estimates to the small area level.

The numbers are estimates for an area, not measured events. As such, they should be viewed as a tool that, when used in conjunction with local area knowledge and taking into consideration the prediction reliability, can provide useful information that can assist with decision making for small geographic regions.

Source: (Torrens University Australia, 2019)

The community resilience and volunteering data presented in this section has been included to assess the population's adaptability to change, which is a key element of assessing vulnerability and impact consequence. These community resilience measures suggested the Narrabri LGA and Gunnedah LGA populations are tight-knit local communities that are more traditional in outlook and less accepting of outsiders and change (Table 4-11). The impact assessment (Section 5) will utilise the data in the social baseline as required to assess the relevant impacts of the Project.

All of the study areas had higher rates of formal volunteering than Regional NSW and NSW in 2016 (Table 4-12). Of the villages and towns, Boggabri township had the highest rate of formal volunteering at 24.3%, followed by Narrabri township (23.4%), Baan Baa and surrounds (22.1%) and Gunnedah township (21.0%). For Narrabri LGA, 24.6% of residents participated in formal volunteering and, for Gunnedah LGA, 23.9% participated.

Rates of participation in formal volunteering were highest amongst the 35-54 year and 55-74 year age groups for the study areas.

Table 4-11. Community resilience measure estimates, Persons 18 years of age and older, 2014

Area	Persons		
	Number	ASR ¹ per 100	SR ²
Unpaid voluntary work through an organisation in preceding 12 months			
Narrabri LGA	4,073	40.6	132
Gunnedah LGA	3,461	36.4	118
Regional NSW	691,423	34.0	111
NSW	1,681,275	29.3	95
Able to get support in times of crisis from someone outside the household			
Narrabri LGA	9,338	93.4	99
Gunnedah LGA	8,929	93.6	99
Regional NSW	1,902,474	93.8	99
NSW	5,354,516	93.4	99
Provide support to other relatives outside the household			
Narrabri LGA	3,092	30.4	97
Gunnedah LGA	2,890	30.3	97
Regional NSW	631,061	30.7	98
NSW	1,864,781	32.5	104
Felt very safe/safe walking alone in the area after dark			
Narrabri LGA	6,049	60.8	116
Gunnedah LGA	5,399	57.9	111
Regional NSW	1,107,228	55.9	107
NSW	3,054,012	53.4	102
Disagree/strongly disagree with acceptance of other cultures			
Narrabri LGA	681	6.5	144
Gunnedah LGA	615	6.1	134
Regional NSW	117,281	5.4	118
NSW	235,879	4.1	90
Felt that they had experienced discrimination or been treated unfairly in preceding 12 months			
Narrabri LGA	2,123	21.6	116
Gunnedah LGA	1,801	19.7	106
Regional NSW	376,046	19.5	105
NSW	1,110,970	19.4	105

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1.ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

Table 4-12. Participation in formal volunteering, Study areas, 2016

Area	Formal volunteering				
	15-34 years	35-54 years	55-74 years	75+ years	Total
Baan Baa and surrounds	7 (18.4%)	10 (28.6%)	15 (32.6%)	3 (33.3%)	29 (22.1%)
Narrabri township	301 (20.4%)	350 (25.7%)	351 (26.7%)	95 (18.3%)	1,093 (23.4%)
Boggabri township	22 (12.0%)	57 (26.8%)	56 (30.3%)	26 (26.3%)	165 (24.3%)
Gunnedah township	335 (16.5%)	418 (24.0%)	439 (25.9%)	152 (16.9%)	1,338 (21.0%)
Narrabri LGA	583 (20.0%)	946 (28.7%)	813 (26.3%)	187 (18.8%)	2,535 (24.6%)
Gunnedah LGA	519 (18.0%)	840 (28.8%)	759 (27.5%)	201 (17.9%)	2,313 (23.9%)
Regional NSW	101,701 (17.0%)	154,507 (23.6%)	154,873 (23.2%)	37,433 (15.6%)	448,521 (20.8%)
NSW	315,725 (15.7%)	409,843 (20.7%)	307,386 (19.6%)	70,835 (13.1%)	1,103,789 (18.1%)

Notes: Based on place of usual residence. Total population 15 years and over. Proportions are based on total population in each age group.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.1.6 Sense of place

Sense of place refers to the relationship between people and place, including the characteristics of a place that make it special to people and contribute to a sense of belonging. Sense of place is not just related to the amenity or visual elements of a place, but also includes cultural or historic connections.

At a community level, the relatively recent shift from a community primarily associated with agricultural activities, to a more diversified range of economic activities, including extractive industries, will have influenced the way in which members of the Narrabri LGA and Gunnedah LGA communities view their community and their sense of place.

The Narrabri area has traditionally been an agricultural community, with European settlers moving into the area attracted by fertile soils suitable for sheep and cattle farming (Askew & Askland, 2016). Cotton farming was introduced to the area in the 1960s and the area continues to be considered an important centre for the cotton industry in NSW, with some of the supporting infrastructure for the industry located there, including research centres, seed production and ginning facilities. In addition to cotton, wheat, canola, sorghum and various pulses are now key crops, while sheep and cattle farming continue.

Community members continue to incorporate agricultural or rural values into their sense of place, and associate these with local history.

Significant coal mining activity began in the Narrabri LGA and Gunnedah LGA in the early 2000s with a number of projects gaining approvals and starting operation (see Section 4.5.2). Resource sector developments have provided an alternative form of local employment to agriculture and other industries and may have contributed to a stabilisation of population decline (see Section 4.1.2). Recent resource projects have attracted workers to the region and initially contributed to housing shortages and reduced affordability (Hasham, 2012). With a more recent history, mining activity may not have the same level of historic or cultural connection with members of the community as agriculture.

Research supported by the University of Newcastle (UON) and the NSW Government (the UON study) focused on establishing how land use and land use change in the Narrabri LGA is conceptualised and understood within local settings, producing a report *Local Attitudes to Changing Land Use – Narrabri Shire* (Askew & Askland, 2016). Community members who took part in engagement for the UON study provided a range of views about land use change associated with resource extraction activities, providing an indication of how this has impacted their sense of place.

Key findings included:

- The “rural lifestyle” of Narrabri LGA was considered to be a strong element of the sense of place of the residents interviewed. This rural lifestyle included a conceptualisation of the community as being “harmonious, egalitarian and close-knit” (p. 30). There was an automatic connection between this rural lifestyle and agricultural activities.
- Economic diversity was also considered a component of the sense of place, with some interviewees proud of the strength and resilience of the economy. This was seen as a unique quality of Narrabri compared to other rural towns that were considered more vulnerable to economic decline.

- Agriculture was the key land use in the region, and the region continues to be a major cotton-growing location. However, it was noted that the agricultural sector has experienced years of farm consolidation and commercialisation which has resulted in population loss in some rural areas and impacted family continuity in farming operations. Farming was described as offering freedom, autonomy and meaningful work, which suggests that agriculture is more than an economic activity, as it contributes to feelings of achievement and personal pride.
- Resource extraction activities were considered by some to be a threat to the rural way of life in Narrabri. It was suggested that these activities were being imposed on the community from outside, rather than being developed naturally from within the community. They were also considered to be temporary compared to the long history of agriculture, and to be threatening the intergenerational connections of residents with farming. However, mining activities were considered by other interviewees to be favourable additions to the local industry, contributing to economic diversity and community resilience.
- Some interviewees thought that impacts associated with resource extraction activities outweighed the returns through employment, local expenditure and gifts.
- The community's experience of resource extraction activities was informed by first-hand experiences. Accounts of impacts tended to be valued by the community above information provided by proponents and government, which they can view as overly complex and difficult to understand, or can be perceived as biased or public relations spin.

The UON study suggests that Narrabri's community regard agriculture, rural characteristics, community cohesion and economic diversity as key elements of their sense of place. Resource extraction activities, including both coal mining and coal seam gas (CSG), were seen by some as threats to these elements of place, in that in their view resource extraction activities:

- Can be undertaken on land that was previously used for agriculture and therefore can directly displace agricultural activities.
- Can result in changes to the landscape that are highly visible from a distance, and therefore impact the overall impression of an area as being predominantly rural in nature.
- Are generally progressed by large firms that are "outsiders" and utilise "experts" from outside the local community.
- Can disrupt community cohesion in a range of ways, including through introducing new income disparities and altering the community composition.

These findings also suggest that the valuing of extractive resource activities for their community benefits and the conceptualisation of a new sense of place that incorporates mining is unlikely to develop quickly in Narrabri given the perception that there is a lack of return from the activities for the community and the distrust in information.

The community survey undertaken for this SIA included questions specifically about sense of place and includes responses from community members that live in both Narrabri LGA and Gunnedah LGA. These questions related to the balance between agricultural/rural activities and mining activity to gather more information about the issues raised in this section. Sense of place was also mentioned by some landholders in individual interviews, however, these related to their own personal connections to their properties, rather than to general notions of belonging to a local or regional place. These engagement findings are summarised in Section 4.1.9 below.

4.1.7 Community cohesion

As noted in the previous section, interviews undertaken by Askew and Askland (2016) identified community cohesion as a critical element of sense of place for residents of Narrabri. They note that interviewees described Narrabri as being "a harmonious, egalitarian and close-knit community, characterised by the possibility of meaningful community involvement" (p. 30). These elements of sense of place and community cohesion are therefore intertwined in Narrabri.

This sense of community cohesion was considered by respondents in the UON study (Askew and Askland, 2016) to be threatened by resource extractive industries, which identified a growing sense of community disharmony. Many of the comments from interviews conducted for the UON study referenced CSG activities, rather than mining activities in this context, for example:

“Narrabri was a very close-knit rural community. I think now as a result of the extractive industries, and our experience has been predominantly with the coal seam gas industry, we’re seeing deep divisions in our community. There’s a feeling of powerlessness, anger, resentment that these industries have come into our community and literally divided our community.” (p. 37) – Direct quote from interviewee

“I guess the CSG debate has polarised communities into farmers and people who feel some risk... if you engage in a conversation about what you’re worried about, quite often people get their backs up straightway... it’s kind of like two polarised camps... I guess that’s where I see the community sort of tearing apart at this point in time.” (p. 37) – Direct quote from interviewee

Coal mining was also mentioned:

“You just don’t talk about it... My brother works at the underground. We just don’t talk about it. [...] So for our family it’s a really direct thing that we choose to avoid.” (p. 38) – Direct quote from interviewee

Other interviewees thought that the reported disharmony was overstated:

“I’d say over 90% are in favour of the gas. [...] I talk to a lot of people over a period of time and no one’s... I haven’t heard anyone really against it... not in the town here.” (p. 37) – Direct quote from interviewee

In summary, although some interviewees in the UON study thought that community cohesion was not under threat, others outlined clear instances where disharmony was experienced and therefore impacts to community cohesion, were evident. The UON study concluded that, in 2016, resource extractive industries were impacting community cohesion, which they considered to be a key element of some residents’ sense of place. Askew and Askland (2016) provide the following summary of their findings on community cohesion:

“Narrabri is defined as a traditionally cohesive and inclusive community by its residents. This is a key value in Narrabri. The intensification of the extractive industries is destabilising and creating new, potentially conflictual relationships due to changes in the economic and social basis of the town.

“Locals are forced to actively manage their relationships with others in order to avoid conflict. Some residents feel socially isolated. The key value of cohesion as a definitive feature of the Narrabri community is threatened.” (p. 39)

An Australian Broadcasting Corporation (ABC) article in February 2020 (McCutcheon, 2020) suggested that proposed CSG projects have split opinions amongst the residents of Narrabri. The article however relies on input from only one councillor and businessperson to come to this conclusion. A similar ABC news article was published in April 2017 (Thomas, McDonald, & Miskelly, 2017) outlining a range of views from different members of the community, although it did not focus on whether these diverse views about CSG were causing a disruption to community cohesion. These articles suggest that the divisions summarised by Askew and Askland (2016) are likely to remain in 2020.

The community survey undertaken for the SIA included questions specifically about community cohesion and includes responses from community members that live in both Narrabri LGA and Gunnedah LGA. Some landholders also mentioned community cohesion in individual interviews. These engagement findings are summarised in Section 4.1.9 below.

4.1.8 Community contributions

According to information provided by NCOPL, NCOPL has made the following community contributions in accordance with Condition 9, Schedule 2 of Project Approval 08_0144:

- Upgrade and seal of 7 km length of the Kurrajong Creek Road for the NSC.
- A \$7,000 contribution to the NSC for provision of bushfire services.
- A total contribution of \$93,000 to the NSC for community infrastructure.
- A total contribution of \$100,000 to the GSC for the Gunnedah Urban Riverine Scheme.
- A total contribution of \$1,500,000 to the NSC for the Narrabri Swimming Complex.
- A total contribution of \$100,000 to the GSC for community enhancement.

NCOPL also makes financial and in-kind contributions to a number of non-government and community organisations in the region.

NCOPL's and Whitehaven Coal's financial contributions (in the form of sponsorships and donations) in the region in FY2019 were \$150,800 in the Narrabri LGA (for example, rescue helicopter) and \$530,900 in total in the regions where Whitehaven Coal operates. Whitehaven Coal staff also donated an additional \$47,651 via payroll donations in FY2018. Whitehaven Coal is the majority owner of NCOPL.

Over the past five years (financial years 2015-19), Whitehaven Coal has made several higher-value, longer-term donations to the region including \$560,000 to the Westpac rescue helicopter, as well as state- and nation-wide companies and not-for-profit organisations, including \$155,000 to the Girls Academy, \$40,000 to the Clontarf Foundation and \$45,000 to the Winanga-Li Aboriginal Child and Family Centre.

The Project may see the continuation of community contributions for an additional period.

4.1.9 Engagement findings

4.1.9.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Although views were varied, a high proportion of local respondents to the community survey agreed or strongly agreed that members of the community help each other out and band together in difficult times (70.0%), while lower proportions thought that the community responds well to change (24.4%) and that the community is cohesive, connected and harmonious (26.8%).

A high proportion of local respondents agreed or strongly agreed that the rural/agricultural character of the region is central to the Narrabri and Gunnedah regional community (92.1%) and that the rural/agricultural character of the region is important to them (92.1%), while a lower proportion thought that mining is central to the community (13.2%). These results suggest that the rural and agricultural character of the area was considered an integral part of the sense of place by local respondents, especially in contrast to mining, which was considered by most to not be a central part of the community identity.

A high proportion of local respondents agreed or strongly agreed that mining has changed the Narrabri and Gunnedah region (97.4%) and that conflicts between mining and agriculture were impacting community cohesion (89.5%), while a lower proportion agreed that maintaining a balance between mining and agriculture is important (58.3%). These results suggest that the nature of the Narrabri and Gunnedah region is changing with increased mining activity, and some local respondents think that this change is negatively impacting their perception of their community.

4.1.9.2 Council officer discussions

The NSC officers who participated in engagement activities suggested that there was a feeling amongst residents of Narrabri LGA that they were missing out on the benefits of mining, and that there was competition for mining jobs between the Narrabri LGA and Gunnedah LGA populations.

The GSC officers who participated in engagement activities noted there was a perception within the local community that the mining industry was associated with negative social outcomes, such as increased drug use, alcohol consumption and crime.

They also suggested that there were ongoing tensions between the mining and agricultural industries in Gunnedah LGA. This was often related to a perception that the mining industry utilised water that should be available for agricultural use and also pushed up the price of water for other users.

GSC officers noted that Council was trying to attract more families to the Gunnedah LGA and was trying to encourage this demographic to move to Gunnedah instead of Tamworth.

4.1.9.3 Landholder discussions

Two nearby landholders noted that their connection to their home and local farming community had changed as their neighbours had been bought by the Narrabri Mine or bought by larger farm operators and amalgamated. They had less of a feeling of attachment to their place, feeling that there was much less of a local community in recent years and that the remaining community had changed composition, with fewer families. These landholders acknowledged that it is hard to judge how much of this change has been due to mining, and how much due to the changing nature of agricultural production over many decades, leading to consolidation and larger operations.

One of the landholders stated:

“Going into the [Baan Baa] pub is different now, a lot of hi-vis rather than families.”

One nearby landholder suggested that there was an existing divide between “the haves and the have-nots” and that mining projects contribute to this divide. They noted that this divide was felt in the price of goods in Narrabri for example. Prices are higher because they are affordable for mine workers with higher incomes, however, they are less affordable for other residents, creating a feeling of exclusion and division.

4.1.9.4 Aboriginal groups discussions

Members of the Aboriginal groups noted the presence of conflict between different Aboriginal groups due to the distribution of opportunities from the Narrabri Mine favouring one group over another. For example, it was thought that the artwork in the Whitehaven office in Gunnedah is not evenly commissioned from the two main Aboriginal groups in Narrabri. NCOPL noted that a Narrabri artist is currently working on an Aboriginal artwork for Whitehaven. However, the comment was suggesting that more could be done to increase opportunities for Aboriginal people at specifically Narrabri Mine.

4.2 Way of Life

4.2.1 Household types

There were 4,616 households in the Narrabri LGA and 4,523 households in the Gunnedah LGA in 2016 (Table 4-13).

The Narrabri LGA and Gunnedah LGA had a very similar household structure to Regional NSW, with similar proportions of couples with no children, couples with children, lone-person households and one-parent families (Figure 4-5).

Baan Baa and surrounds included a higher proportion of couples without children and group households compared to the other townships and the LGAs, and lower proportions of couples with children and lone-person households (Figure 4-6). Boggabri township had a lower proportion of couples with children, a higher proportion of one-parent families, and slightly higher proportions of lone-person households and group households.

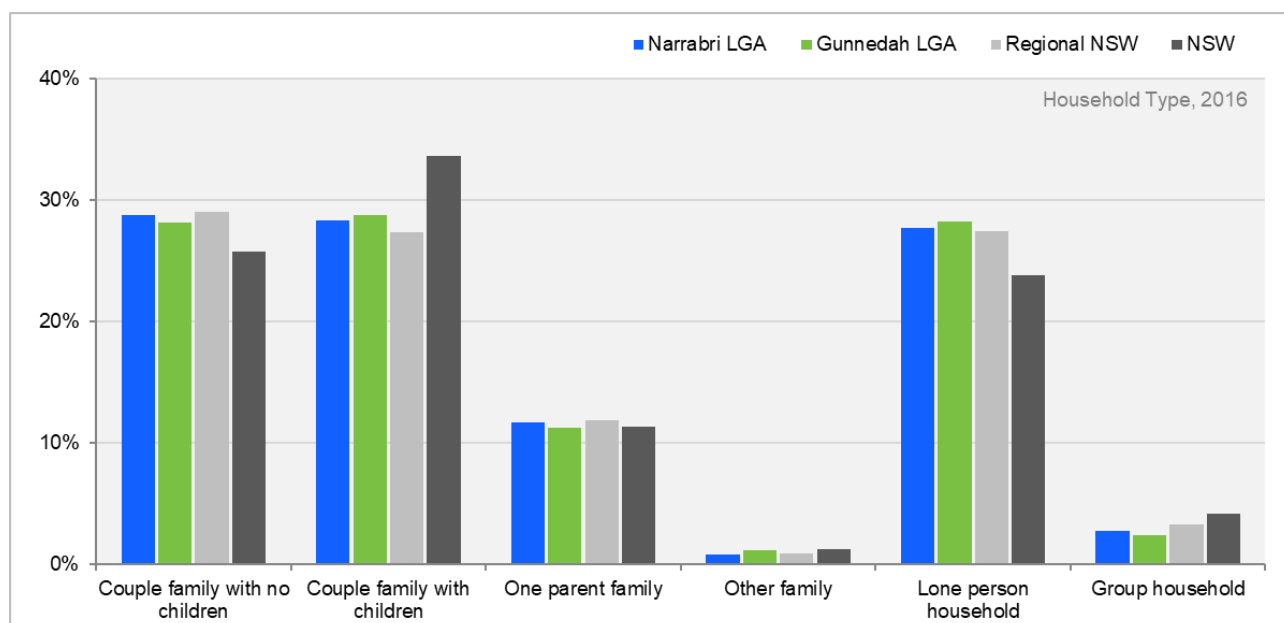
Table 4-13. Household type, Study areas, 2016

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Lone-person	Group	Total
Baan Baa and surrounds	26 (39.4%)	10 (15.2%)	10 (15.2%)	0 (0.0%)	15 (22.7%)	5 (7.6%)	66 (100%)
Narrabri township	582 (27.0%)	562 (26.1%)	281 (13.0%)	20 (0.9%)	644 (29.9%)	65 (3.0%)	2,154 (100%)
Boggabri township	84 (25.5%)	60 (18.2%)	58 (17.6%)	6 (1.8%)	108 (32.7%)	14 (4.2%)	330 (100%)
Gunnedah township	799 (26.0%)	776 (25.2%)	385 (12.5%)	35 (1.1%)	995 (32.4%)	85 (2.8%)	3,075 (100%)
Narrabri LGA	1,327 (28.7%)	1,306 (28.3%)	540 (11.7%)	37 (0.8%)	1,278 (27.7%)	128 (2.8%)	4,616 (100%)
Gunnedah LGA	1,273 (28.1%)	1,303 (28.8%)	511 (11.3%)	52 (1.1%)	1,276 (28.2%)	108 (2.4%)	4,523 (100%)
Regional NSW	285,008 (29.1%)	267,924 (27.3%)	116,487 (11.9%)	9,448 (1.0%)	269,360 (27.5%)	32,215 (3.3%)	980,442 (100%)
NSW	670,871 (25.8%)	875,266 (33.6%)	295,951 (11.4%)	32,438 (1.2%)	620,777 (23.8%)	109,005 (4.2%)	2,604,308 (100%)

Note: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. Data for families and households combined by only considering the type of family of the primary family in the small number of multi-family households. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

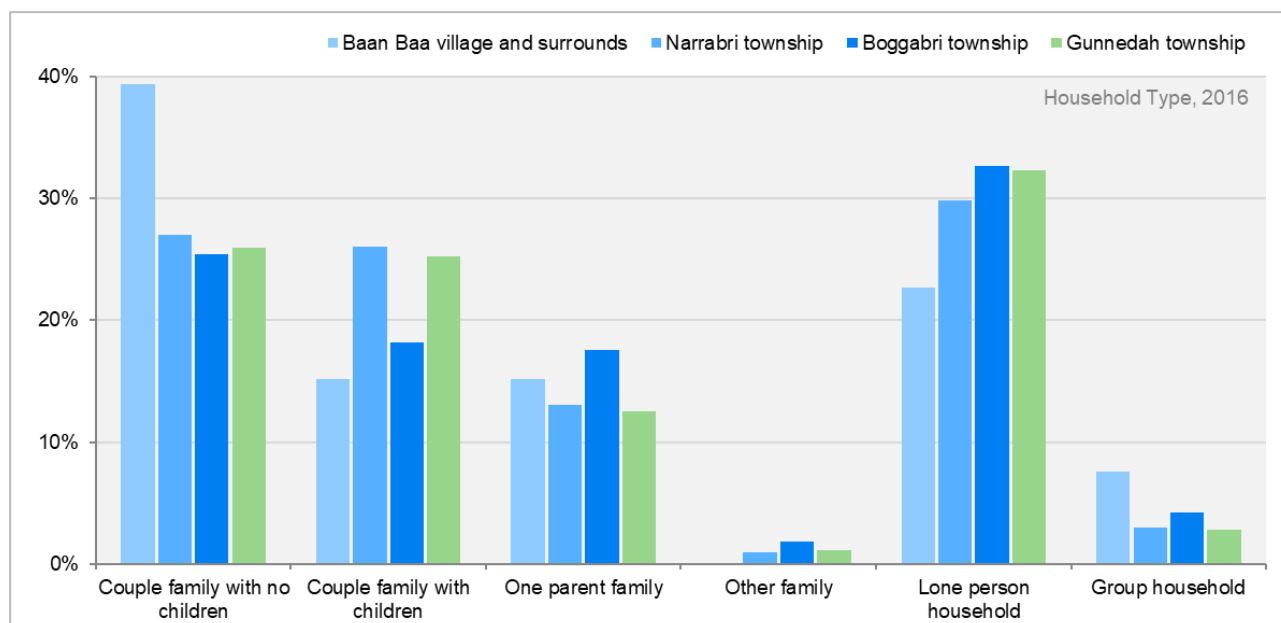
Figure 4-5. Household type, Study areas (LGAs), 2016



Note: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. Data for families and households combined by only considering the type of family of the primary family in the small number of multi-family households.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Figure 4-6. Household type, Study areas (townships), 2016



Note: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. Data for families and households combined by only considering the type of family of the primary family in the small number of multi-family households.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.2.2 Housing costs

Although no significant additional development or operational workforce is proposed as part of the Project that is likely to result in population growth, the Project may encourage some of the workforce that currently does not reside in the area of social influence to move into the area, and thus contribute to minimal additional demand for housing. The retention of the existing mining workforce for a longer period of time may also result in ongoing impacts (positive or negative) on the housing market that may not otherwise occur. Therefore, data on existing housing affordability, diversity and access has been outlined in this section. The impact assessment (Section 5) will utilise the data in the social baseline as required to assess the relevant impacts of the Project on housing.

4.2.2.1 Dwelling tenure

Relatively high proportions of households rent in Narrabri and Gunnedah townships (35.9% in Narrabri and 36.9% in Gunnedah, compared to 27.9% for Regional NSW). In Baan Baa and surrounds and Boggabri, higher proportions of households own their home outright (44.4% in Baan Baa and 39.3% in Boggabri, compared to 37.4% for Regional NSW).

Home ownership rates were slightly lower in both Narrabri LGA and Gunnedah LGA in 2016 compared to Regional NSW (34.6% for Narrabri LGA, 34.4% for Gunnedah LGA, compared to 37.4% for Regional NSW) (Table 4-14). There were slightly higher proportion of households renting (32.0% for Narrabri LGA, 31.7% for Gunnedah LGA and 27.9% for Regional NSW).

Table 4-14. Tenure type, Study areas, 2016

Area	Owned Outright	Owned with Mortgage	Rented	Total
Baan Baa and surrounds	28 (44.4%)	15 (23.8%)	17 (27.0%)	63 (100%)
Narrabri township	651 (30.3%)	618 (28.8%)	770 (35.9%)	2,146 (100%)
Boggabri township	128 (39.3%)	79 (24.2%)	104 (31.9%)	326 (100%)
Gunnedah township	990 (32.2%)	813 (26.4%)	1,134 (36.9%)	3,075 (100%)
Narrabri LGA	1,600 (34.6%)	1,326 (28.7%)	1,478 (32.0%)	4,622 (100%)
Gunnedah LGA	1,561 (34.4%)	1,348 (29.7%)	1,437 (31.7%)	4,536 (100%)
Regional NSW	367,028 (37.4%)	300,088 (30.6%)	273,672 (27.9%)	980,440 (100%)
NSW	839,663 (32.2%)	840,004 (32.3%)	826,921 (31.8%)	2,604,315 (100%)

Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. Other tenure and 'not stated' responses are not shown but are included in totals. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

In Narrabri township, a slightly higher proportion of households were renting their dwelling from a housing authority in 2016 (5.9%), compared to Regional NSW (3.8%) (Table 4-15).

Table 4-15. Rental landlord type, Study areas, 2016

Area	Real Estate Agent	Housing Authority	Housing Cooperative	Residential Park	Employer/ Person/ Not Stated	Total Renting
Baan Baa and surrounds	4 (6.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	14 (22.2%)	17 (27.0%)
Narrabri township	327 (15.2%)	126 (5.9%)	35 (1.6%)	3 (0.1%)	284 (13.2%)	770 (35.9%)
Boggabri township	46 (14.1%)	0 (0.0%)	9 (2.8%)	0 (0.0%)	53 (16.3%)	104 (31.9%)
Gunnedah township	706 (23.0%)	124 (4.0%)	45 (1.5%)	0 (0.0%)	262 (8.5%)	1,134 (36.9%)
Narrabri LGA	467 (10.1%)	171 (3.7%)	47 (1.0%)	9 (0.2%)	780 (16.9%)	1,478 (32.0%)
Gunnedah LGA	791 (17.4%)	124 (2.7%)	45 (1.0%)	5 (0.1%)	468 (10.3%)	1,437 (31.7%)
Regional NSW	147,946 (15.1%)	37,060 (3.8%)	7,140 (0.7%)	2,296 (0.2%)	79,232 (8.1%)	273,672 (27.9%)
NSW	519,538 (19.9%)	104,901 (4.0%)	17,412 (0.7%)	3,454 (0.1%)	181,605 (7.0%)	826,921 (31.8%)

Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Between 2001 and 2016, the number and proportion of renting households in Narrabri LGA decreased (from 32.9% in 2001 to 29.5% in 2016). The opposite was the case in Gunnedah LGA where the number and proportion of renting households increased between 2001 and 2016. Across NSW there was a trend for a higher proportion of households to rent over this period. The number of rental properties in Narrabri decreased by approximately 150 dwellings. It is likely this will have worsened any shortage of affordable rental housing in the Narrabri LGA.

Table 4-16. Dwelling tenure change, Rent, Study areas (LGAs), 2001-16

Area	2001	2006	2011	2016
Narrabri LGA	1,705 (32.9%)	1,485 (29.5%)	1,529 (29.8%)	1,542 (29.5%)
Gunnedah LGA	1,235 (27.4%)	1,247 (27.6%)	1,383 (29.1%)	1,475 (30.1%)
Regional NSW	245,653 (27.1%)	248,258 (26.2%)	269,394 (27.0%)	279,461 (26.5%)
NSW	675,434 (28.8%)	700,657 (28.4%)	756,830 (29.1%)	839,525 (30.3%)

Notes: Based on place of enumeration. Occupied dwellings. Time series data does not correspond with earlier tenure tables as visitor and non-classifiable households are included. Other tenure and 'not stated' responses are not shown but are included in totals. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [Time Series Profile];

4.2.2.2 Dwelling costs

The median mortgage repayment was \$1,395 per month in the Narrabri LGA in 2016 and \$1,473 per month in Gunnedah LGA (Table 4-17). The highest median mortgage repayment was in Baan Baa and surrounds at \$1,517 per month (despite having the lowest median rent), and the lowest was in Boggabri township at \$1,279 per month. These median mortgage repayments were all below the median for Regional NSW, at \$1,590, and well below the median for NSW as a whole, at \$1,986.

The median weekly rent was also lower in Narrabri LGA in 2016 at \$200 per week and \$240 per week in the Gunnedah LGA, compared to \$270 per week in Regional NSW and \$380 per week for NSW. The highest median weekly rents were in Boggabri township and Gunnedah township (both at \$250 per week), and the lowest median weekly rent was in Baan Baa and surrounds (at \$215 per week).

Table 4-17. Median accommodation costs, Study areas, 2016

Area	Median Weekly Rent	Median Monthly Mortgage Repayment
Baan Baa and surrounds	\$215	\$1,517
Narrabri township	\$230	\$1,452
Boggabri township	\$250	\$1,279
Gunnedah township	\$250	\$1,400
Narrabri LGA	\$200	\$1,395
Gunnedah LGA	\$240	\$1,473
Regional NSW	\$270	\$1,590
NSW	\$380	\$1,986

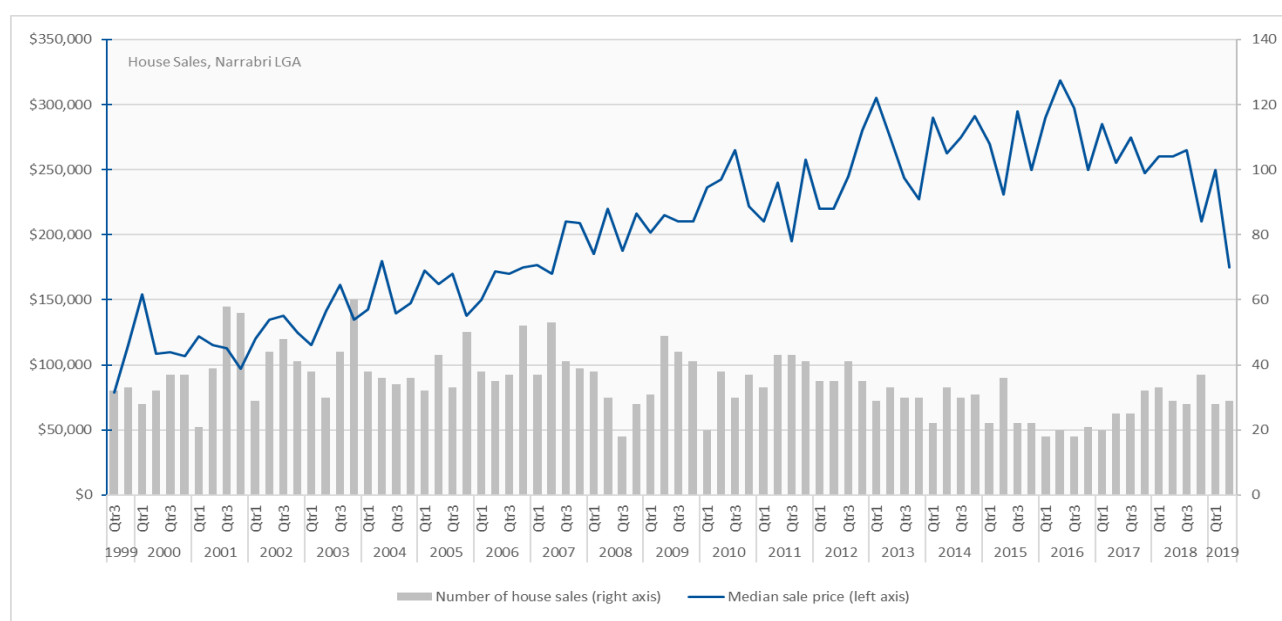
Notes: Based on place of enumeration.

Source: (Australian Bureau of Statistics, 2017a) [Quickstats];

4.2.2.3 Sale prices and sales volumes

Figure 4-7 shows the number of houses sold and the median sale prices of houses sold between 1999 and 2019 in Narrabri LGA. Median house prices increased between 1999 to 2017 but declined over the past two years from around \$250,000 to under \$200,000. The number of house sales per quarter has remained steady at around 20 to 40 sales per year over the last 20 years.

Figure 4-7. Median sales prices and number of sales, Houses, Narrabri LGA, 1999 to 2019

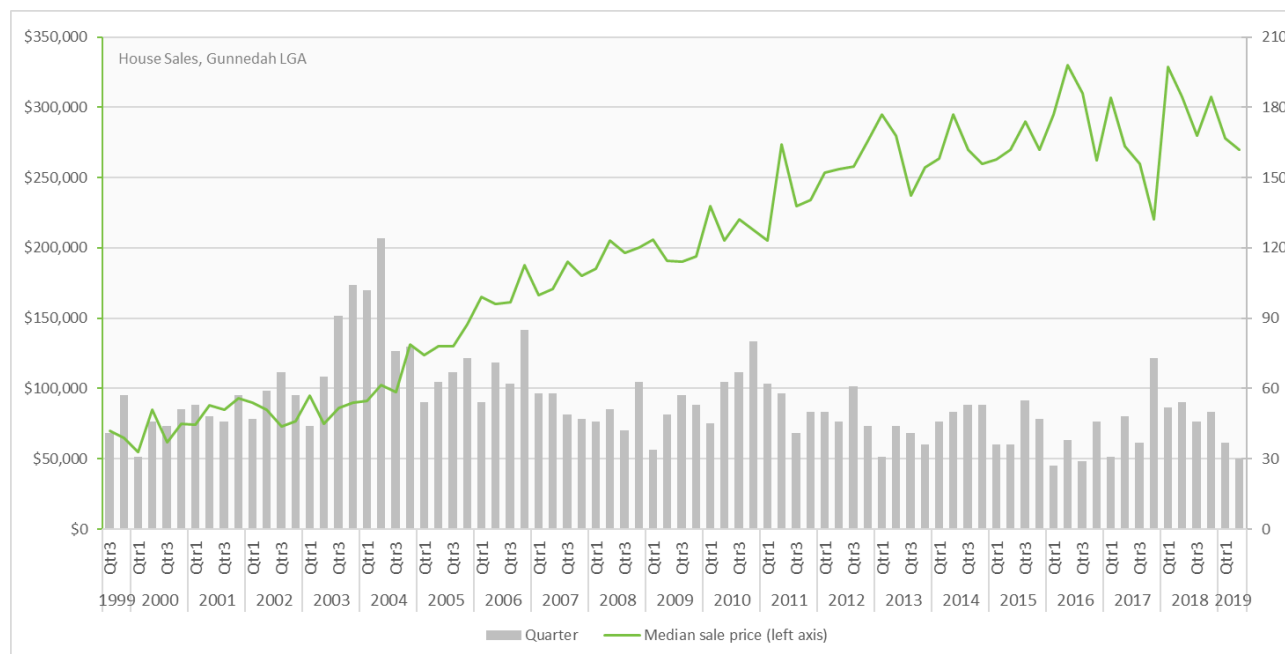


Notes: Residential lots only - excludes lots larger than 4,000 square metres (sqm). Excludes sales with a sale price of \$0.

Source: (Pricerfinder, 2019);

Figure 4-8 shows the number of houses sold and the median sale prices of houses sold between 1999 and 2019 in Gunnedah LGA. Median house prices increased substantially between 1999 and 2019, from less than \$100,000 to more than \$250,000. There was also noticeable volatility in the market between 2011 and 2016, while generally trending upward. There was a drop in median sale prices between 2016 to 2017 of approximately \$100,000. Prices quickly recovered in 2018, although they have trended downward since. The number of sales per quarter for houses fluctuated during the study period from around 30 sales per quarter to around 60 sales per quarter, with a noticeable spike in sales between 2003 to 2004 with up to 120 sales per quarter during this period. This spike may have been related to expectations of resources activity in the Gunnedah LGA, however the earliest mining activity commenced two years later in 2006.

Figure 4-8. Median sales prices and number of sales, Houses, Gunnedah LGA, 1999 to 2019



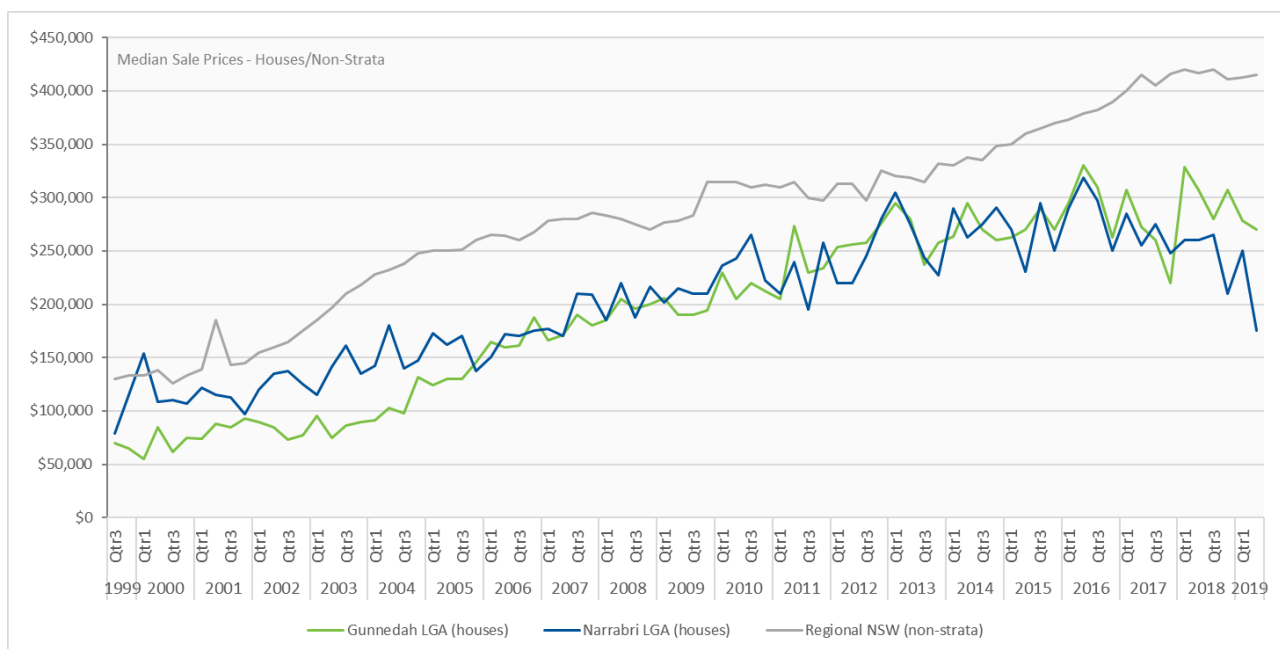
Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0.

Source: (Pricefinder, 2019);

Figure 4-9 shows median sales prices for houses (Narrabri LGA and Gunnedah LGA) and non-strata dwellings (Regional NSW) in Narrabri LGA, Gunnedah LGA and Regional NSW. The data for Regional NSW is from a different source than the local data, and therefore should not be directly compared; it is shown only to indicate the trend in property prices for the larger area. The data shows that the increase in prices in the area of social influence has been similar to price increases throughout Regional NSW.

Figure 4-10 shows the number of units sold and the median sale prices of units sold between 1999 and 2019 in Narrabri LGA. The number of sales of units per quarter was more sporadic than houses, fluctuating from no sales to up to five sales per quarter during this period. Only around 10% of total dwellings sold in the Narrabri LGA were semi-detached or attached dwellings in 2016 (see Section 4.2.2.7), which reflects the lower stock of these types of dwellings in the Narrabri LGA. Median sales prices for units were also more variable. Generally, the median sale price of units increased from around \$150,000 between 2000 and 2006, up to around \$300,000 in 2008 to 2019.

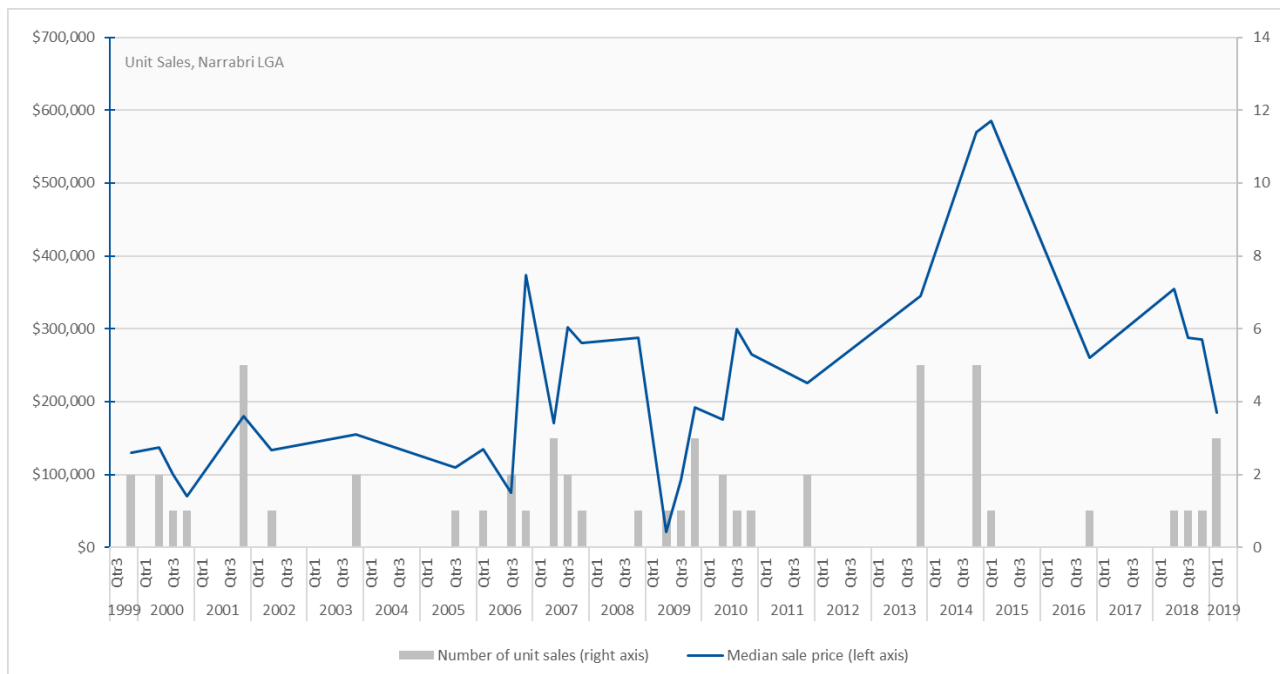
Figure 4-9. Median sales prices, Houses and Non-Strata, Narrabri LGA, Gunnedah LGA and Regional NSW, 1999 to 2019



Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0. Regional NSW data from different source and is included to show indicative trend only.

Source: (Pricfinder, 2019); (NSW Government [Department of Family and Community Services], 2018)

Figure 4-10. Median sales prices and number of sales, Units, Narrabri LGA, 1999 to 2019

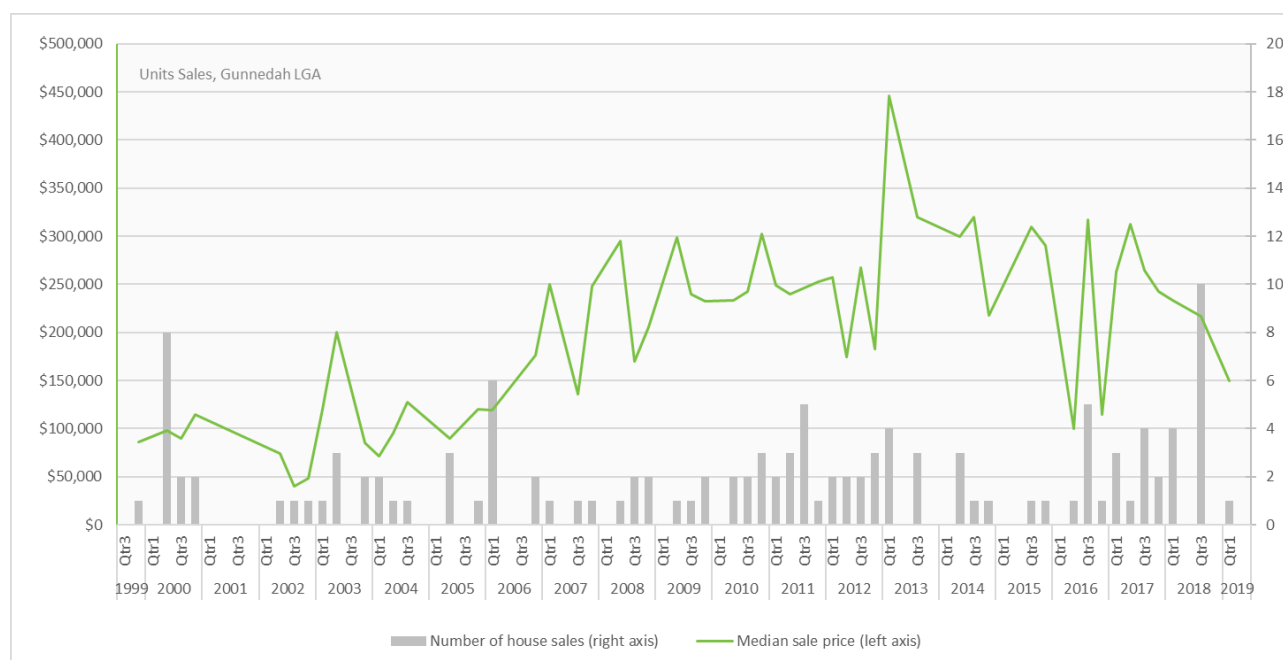


Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0. Excludes sales of whole unit blocks where the number of units in the block was not available.

Source: (Pricfinder, 2019);

Figure 4-11 shows the number of units sold and the median sale prices of units sold between 1999 and 2019 in the Gunnedah LGA. The number of sales per quarter for units fluctuated during this period, with considerably fewer sales when compared to the housing market for the same period. Only around 10% of total dwellings in the Gunnedah LGA were semi-detached or attached dwellings in 2016 (see Section 4.2.2.7), so this lower number of sales would reflect the lower stock of these types of dwellings in the Gunnedah LGA. The most unit sales were experienced in 2018, with ten sales in one quarter in that period. Median sales prices for units have increased from around \$100,000 in 2000 to around \$250,000 in 2018.

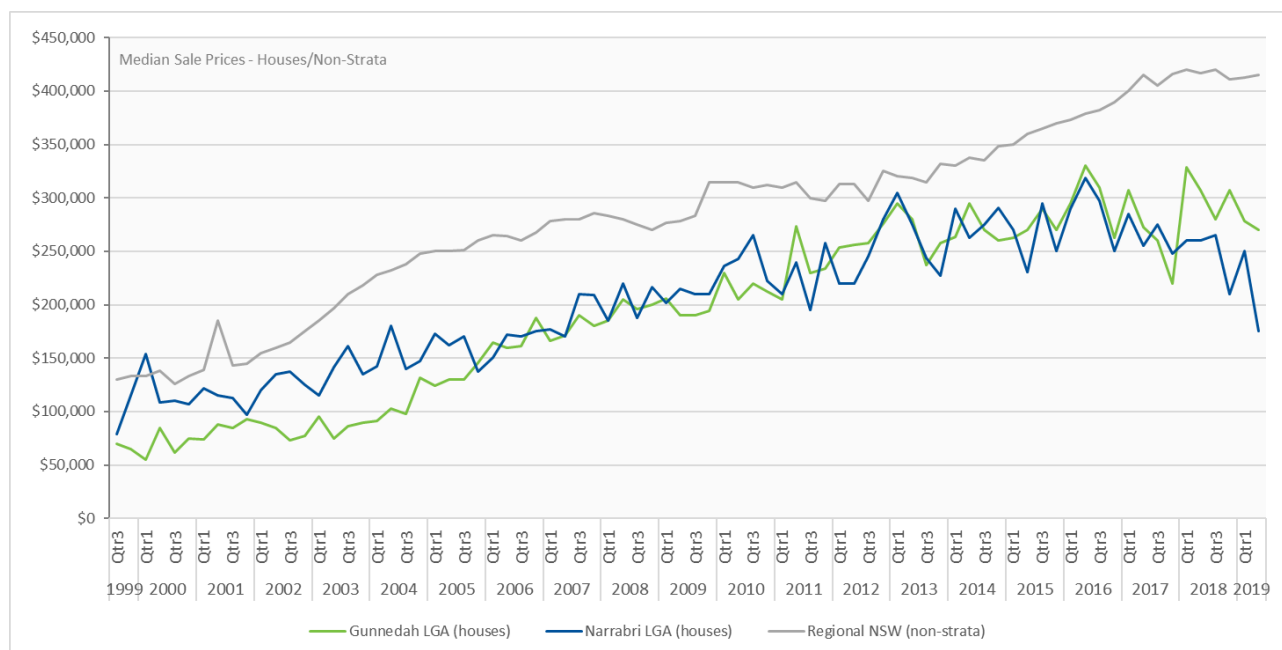
Figure 4-11. Median sales prices and number of sales, Units, Gunnedah LGA, 1999 to 2019



Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0. Excludes sales of whole unit blocks where the number of units in the block was not available.

Source: (Pricefinder, 2019);

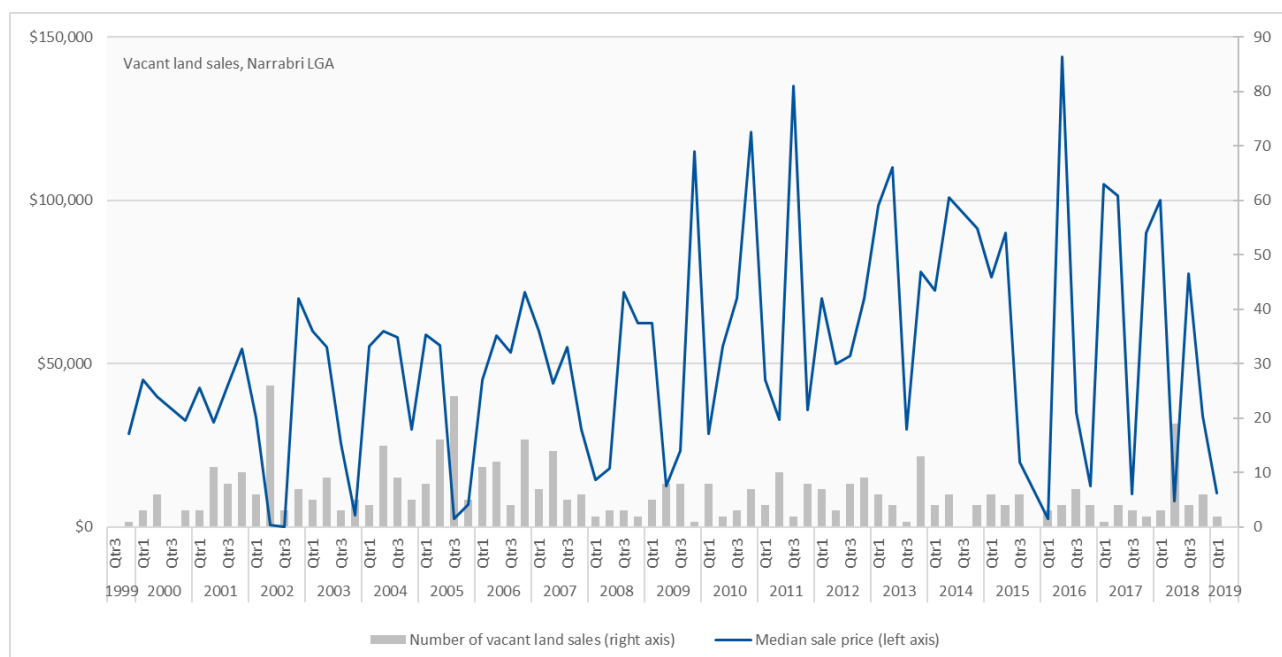
Figure 4-12 shows median sales prices for units (Narrabri LGA and Gunnedah LGA) and strata dwellings (Regional NSW) in Narrabri LGA, Gunnedah LGA and Regional NSW. The data for Regional NSW is from a different source than the local data, and therefore should not be directly compared; it is shown only to indicate the trend in property prices for the larger area. The data shows that the increase in prices in the area of social influence has been broadly in line to price increases throughout Regional NSW.

Figure 4-12. Median sales prices, Units and Strata, Narrabri LGA, Gunnedah LGA and Regional NSW, 1999 to 2019

Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0. Regional NSW data from different source and is included to show indicative trend only.

Source: (Pricfinder, 2019); (NSW Government [Department of Family and Community Services], 2018)

Figure 4-13 shows the number of vacant land parcels sold and the median sale prices of sales between 1999 and 2019 in the Narrabri LGA. Median vacant land prices have been volatile throughout the study period, ranging from under \$25,000 to over \$100,000, however, this is likely due to the small number of sales in each quarter (under around ten sales per quarter in recent years) as well as the different sizes of land and location of land sold in each quarter. The median price of vacant land has been generally increasing.

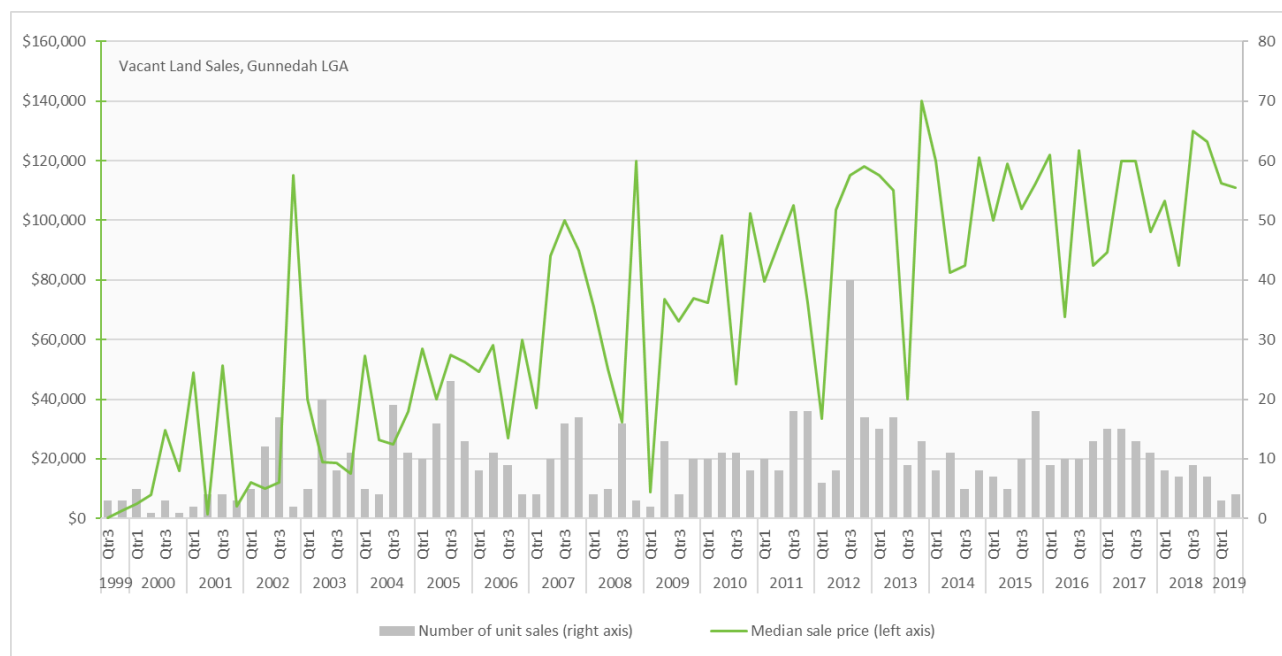
Figure 4-13. Median sales prices and number of sales, Vacant land, Narrabri LGA, 1999 to 2019

Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0.

Source: (Pricfinder, 2019);

Figure 4-14 shows the number of vacant land parcels sold and the median sale prices of sales between 1999 and 2019 in the Gunnedah LGA. Median vacant land prices have increased over the last 20 years, from below \$50,000 in 2000, to above \$100,000 in recent years. The number of sales per quarter for vacant land has slightly increased during this period to around ten sales per quarter in 2019.

Figure 4-14. Median sales prices and number of sales, Vacant land, Gunnedah LGA, 1999 to 2019



Notes: Residential lots only - excludes lots larger than 4,000 sqm. Excludes sales with a sale price of \$0.

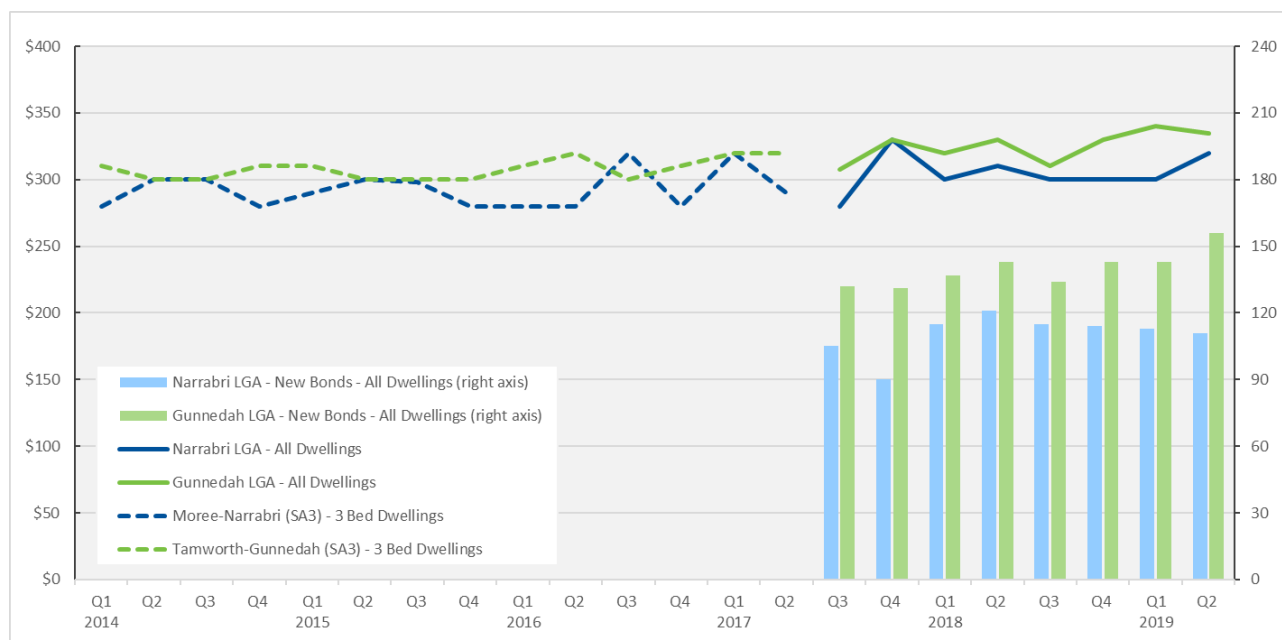
Source: (Pricefinder, 2019);

4.2.2.4 Rent prices

Median rents for new bonds increased gradually over June 2017 to June 2019 in the Narrabri LGA and Gunnedah LGA, with the median rent for new bonds being around \$310 per week in Narrabri LGA and \$325 per week in Gunnedah LGA during this period (see Figure 4-15).

For the broader Moree-Narrabri Statistical Area 3 (SA3) and Tamworth-Gunnedah SA3, median rents for three-bedroom dwellings for new bonds increased only slightly between 2014 and 2017, moving from around \$290 per week in Moree-Narrabri SA3 in 2014 and 2015, to \$300 per week in 2016 and 2017, and moving from around \$305 per week for Tamworth-Gunnedah SA3 in 2014 and 2015, to \$310 per week for 2016 and 2017, respectively.

Figure 4-15. Number and median rent prices for new bonds, Study areas (LGAs) and Moree-Narrabri and Tamworth-Gunnedah SA3, 2014-2019



Source: NSW Government 2018;

4.2.2.5 Housing availability

Dwelling stock

There were 79 dwellings counted in Baan Baa and surrounds in 2016 (Table 4-18), 2,468 dwellings in Narrabri township, 390 dwellings in Boggabri township and 3,432 dwellings in Gunnedah township. On census night in 2016, 19.0% of private dwellings in Boggabri township were unoccupied and similarly, 17.7% of private dwellings in Baan Baa and surrounds were unoccupied. These were high proportions of unoccupied dwellings in these two small areas, and higher than the proportions for Narrabri LGA, Gunnedah LGA, Regional NSW and NSW.

Table 4-18. Dwellings, Study Areas, 2016

Area	Occupied Dwellings	Unoccupied Dwellings	Total Dwellings
Baan Baa and surrounds	65 (82.3%)	14 (17.7%)	79 (100%)
Narrabri township	2,156 (87.4%)	312 (12.6%)	2,468 (100%)
Boggabri township	316 (81.0%)	74 (19.0%)	390 (100%)
Gunnedah township	3,076 (89.6%)	356 (10.4%)	3,432 (100%)
Narrabri LGA	4,634 (86.3%)	736 (13.7%)	5,370 (100%)
Gunnedah LGA	4,528 (88.4%)	596 (11.6%)	5,124 (100%)
Regional NSW	980,437 (86.8%)	148,688 (13.2%)	1,129,125 (100%)
NSW	2,604,320 (90.1%)	284,741 (9.9%)	2,889,061 (100%)

Source: (Australian Bureau of Statistics, 2017b);

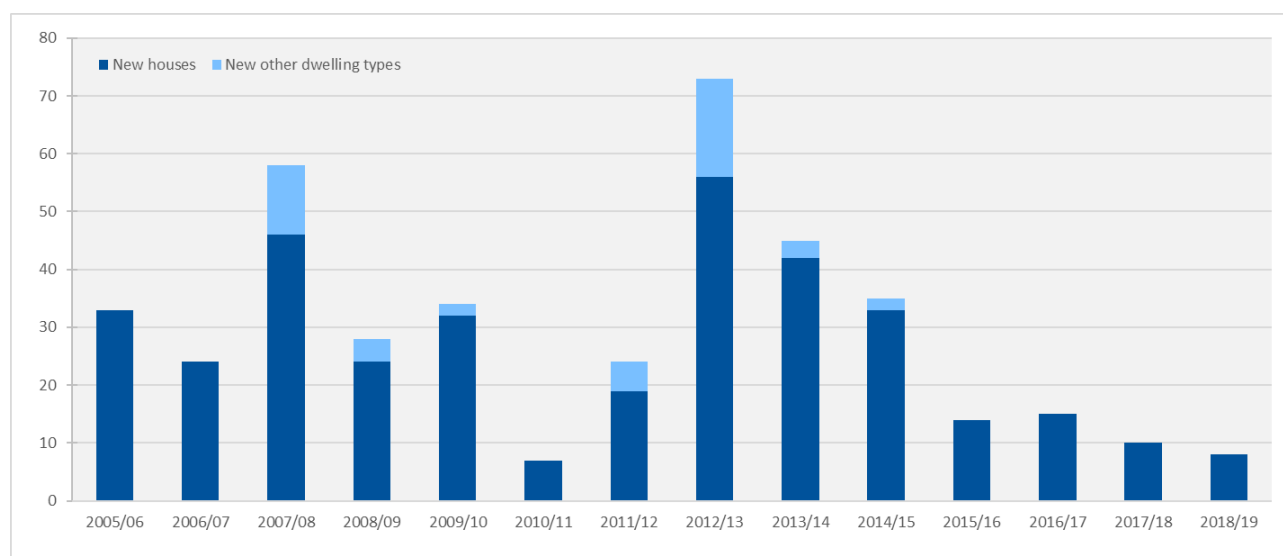
Development activity

The number of development approvals granted for new dwellings in Narrabri LGA were relatively low in recent years, at around 10-15 dwellings per year since 2015. During this period, all approvals for new dwellings were for houses. There was a period of higher development activity in the three years prior, from 2012/13 to 2014/15. During this period, a higher number of dwellings were approved (73 dwellings in 2012/13). Most development approvals for new dwellings over the 14-year period in the Narrabri LGA have been for houses, but relatively higher numbers of development applications for semi-detached and attached dwellings were approved in 2007/08 and 2012/13 (12 and 17 dwellings respectively).

Development approvals for new dwellings in the Gunnedah LGA have been quite steady at around 40 to 60 dwellings per year between 2005/06 and 2018/19. There have been some years with lower or higher approvals, such as a lower number in 2008/09, potentially due to the beginnings of the Global Financial Crisis, and higher numbers in 2012/13 and 2015/16. The high number of approvals in 2015/16 included approval of 70 semi-detached or attached dwellings (almost 60% of the approvals in that year). In other years, the large majority of approvals were for new houses.

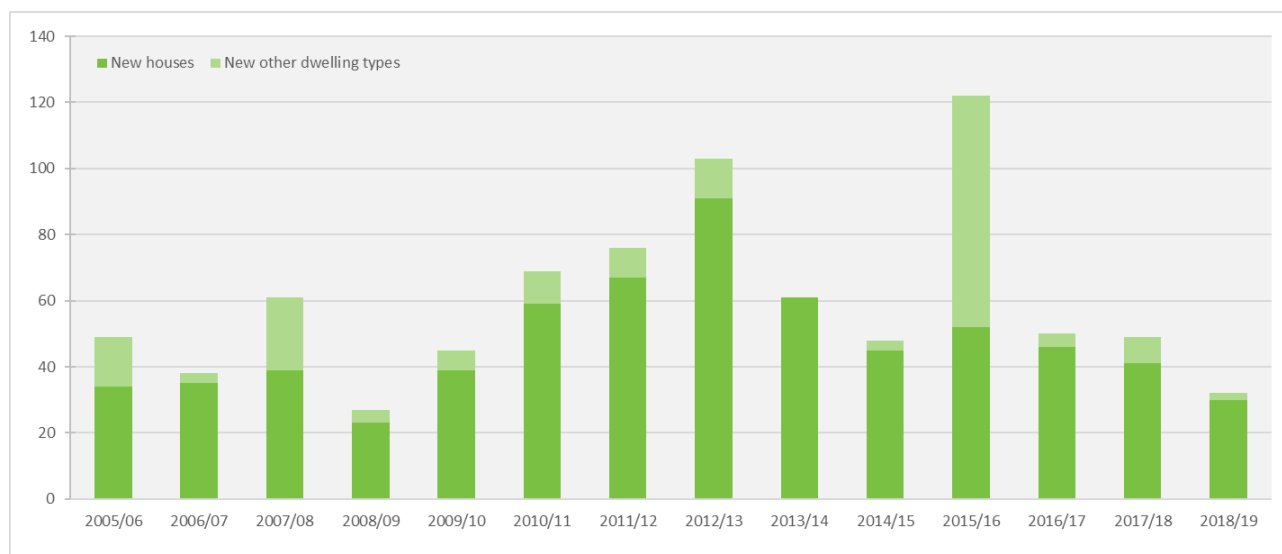
The data presented in this section relates to development approvals for new dwellings, and therefore, does not capture when or if the approved dwellings were actually built.

Figure 4-16. Development approvals (new houses and other dwellings), Narrabri LGA, 2005/06 – 2018/19



Notes: Data based on statistical local areas (part of the ABS ASGC) before 2015, however corresponds to the Narrabri LGA.

Source: (Australian Bureau of Statistics, 2020);

Figure 4-17. Development approvals (new houses and other dwellings), Gunnedah LGA, 2005/06 – 2018/19

Notes: Data based on statistical local areas (part of the ABS ASGC) before 2015, however corresponds to the Gunnedah LGA.

Source: (Australian Bureau of Statistics, 2020);

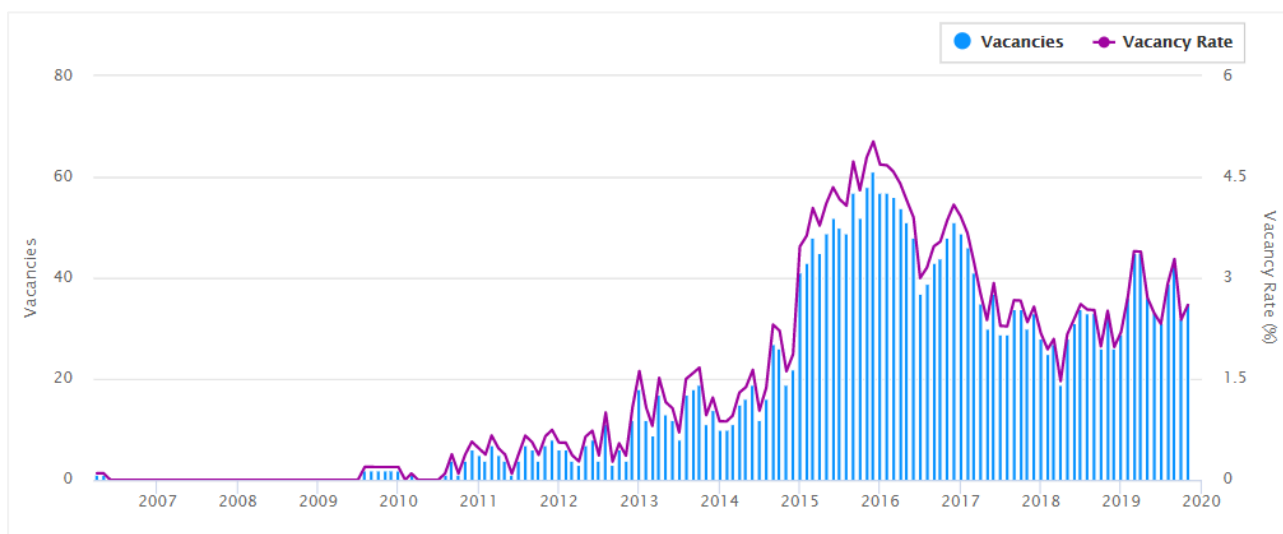
Rental vacancy rates

Estimated rental vacancy rates are compiled by SQM Research (2020) using data gathered from online monitoring of major real estate listing websites. The analysis includes rentals that have been advertised for three weeks or more and excludes both properties without an address and duplicate entries. This data is available by postcode.

Estimated rental vacancy rates for the postcodes located in the Narrabri LGA and Gunnedah LGA are shown in the figures below (Figure 4-18 to Figure 4-22).

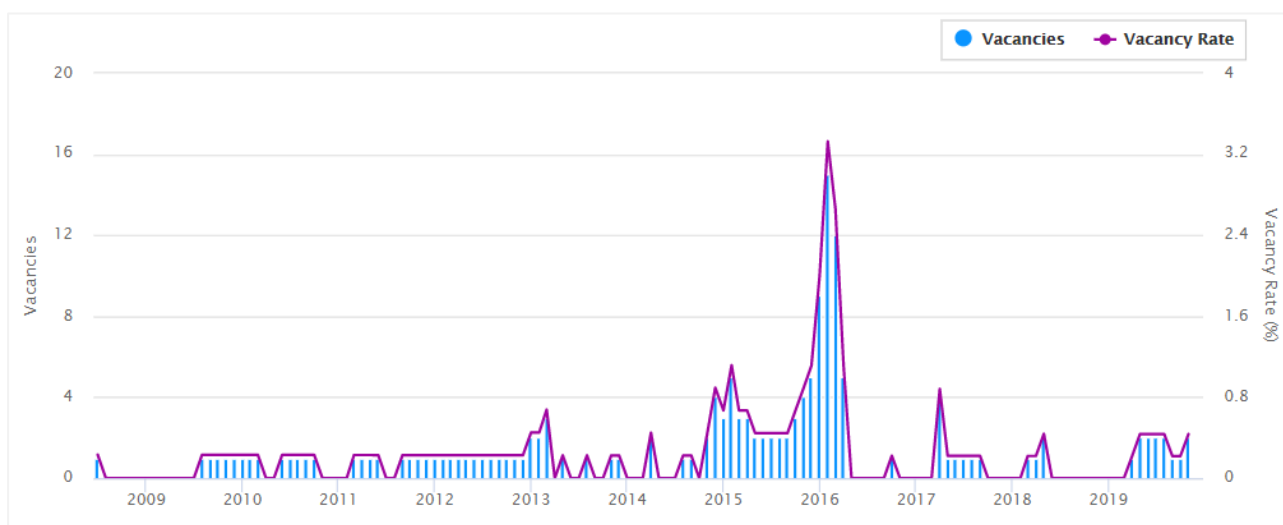
The data suggests that postcode 2390 (which includes the Narrabri township) had a very low rental vacancy rate between 2006 and 2014, at less than 1.5%. In 2015, the rental vacancy rate increased to around 4.5%. This higher vacancy rate for postcode 2390 may align with higher development approvals activity in the preceding three years (2012/13 to 2014/15) in the Narrabri LGA (as noted previously). The vacancy rate returned to below 3% by 2017 (around 40 dwellings) and has remained mostly below 3% in 2018 and 2019, potentially corresponding with the relatively low new dwelling approvals issued in this period. The Narrabri Village workers camp opened in May 2011 (Section 4.2.2.8) which may have contributed to the higher vacancy rates in the years after and the achievement of a 'healthier' vacancy rate around 2.5-3.5%². The low rental vacancy rate in postcode 2390 in the last three years suggests the rental market is tight and additional small supply may be needed.

² Some proportion of vacant dwellings in a rental market is generally considered to be appropriate to ensure a mix of dwellings are available and to ensure rental prices do not rise too quickly. A vacancy rate of 2.5% to 3.5% is considered healthy (Real Estate Institute of Queensland, 2018).

Figure 4-18. Estimated rental vacancy rate, Postcode 2390 (Narrabri township), 2005-2019

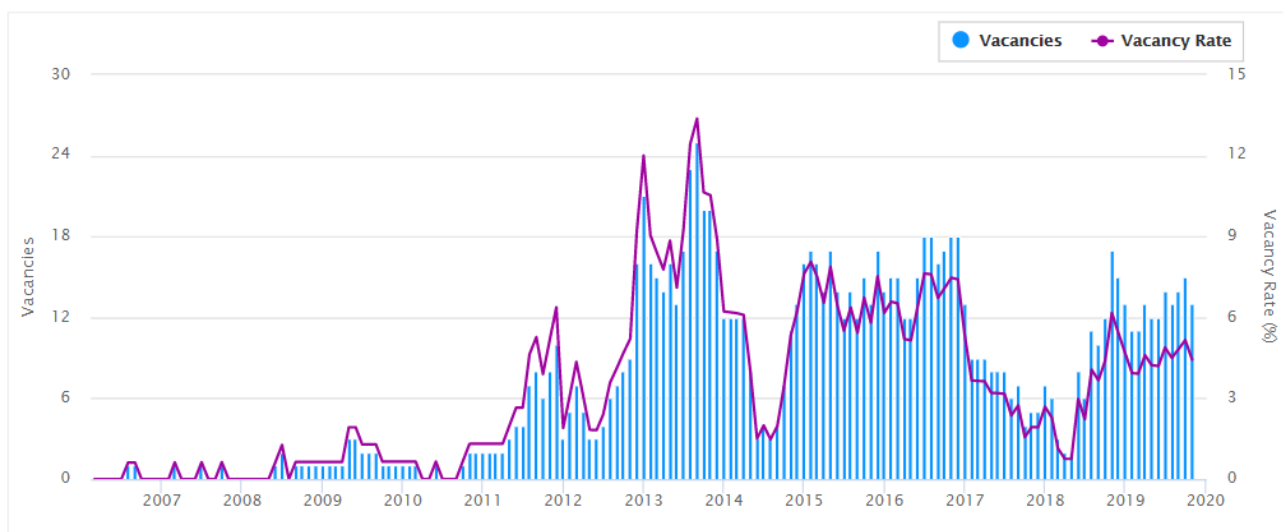
Source: (SQM Research, 2020);

The estimated rental vacancy rate in postcode 2388 (which includes Wee Waa township) was very low during the past ten-year period, with very low numbers of available rental properties, mostly around one or two properties at any time. The exception to this was the summer period in 2015/16 when the number of vacant rental properties increased to around 17 properties and the vacancy rate became 3.2%. However, this seemed to be a temporary spike and very low vacancy rates returned in early 2016.

Figure 4-19. Estimated rental vacancy rate, Postcode 2388 (Wee Waa), 2005-2019

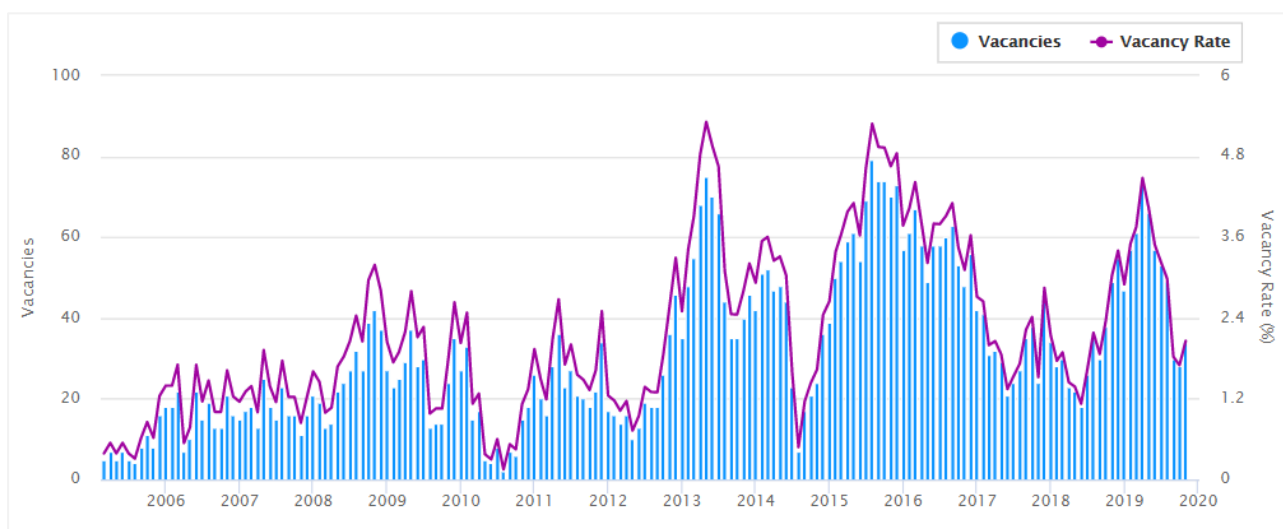
Source: (SQM Research, 2020);

Until around mid-2011 the rental vacancy rate was low in postcode 2382 (which includes Boggabri township). Over the past ten years it has been relatively high compared to the other postcodes profiled, however, even at a vacancy rate of 12% in 2013, this represented just 24 vacant dwellings. The Boggabri Village workers camp opened in December 2013, which may have contributed to the high vacancy rates in the years after. A proportion of workers may have also decided not to take out leases in the period before the opening of the workers camp. Although variable over the past seven years or so, the vacancy rate in postcode 2382 has averaged around 4.5% over the past year, which represents nine vacant properties.

Figure 4-20. Estimated rental vacancy rate, Postcode 2382 (Boggabri township), 2005-2019

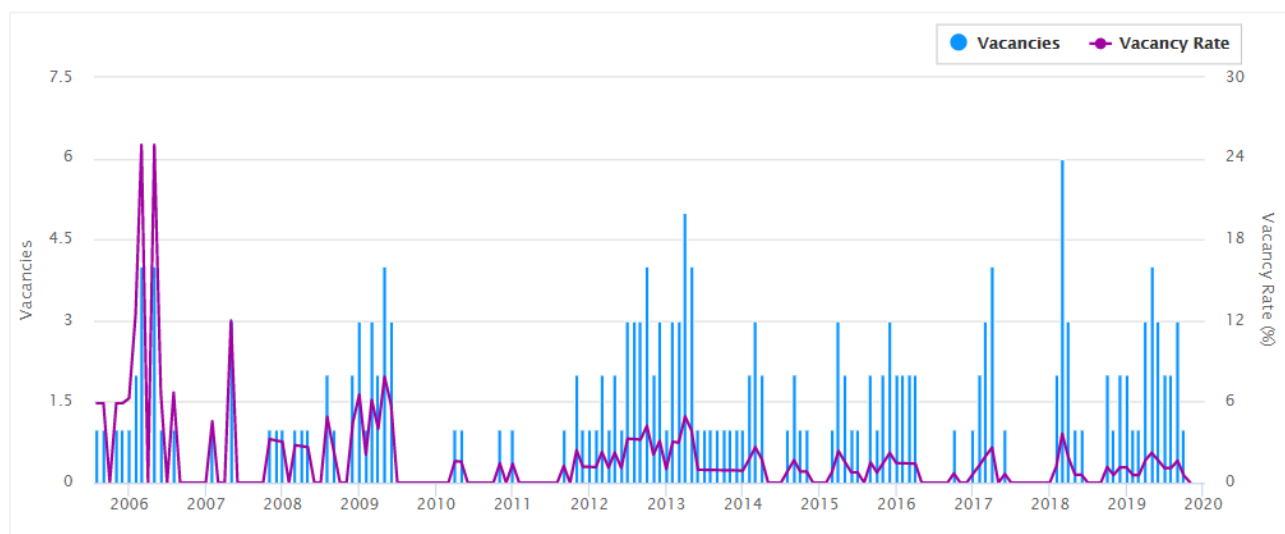
Source: (SQM Research, 2020);

The rental vacancy rate in postcode 2380 (which includes Gunnedah township) was generally low between 2006 and 2012, at less than 3%. Since then, the vacancy rate has increased and become more variable, ranging from 1% to 5%, but averaging around 3%, which suggests a relatively healthy and responsive rental market.

Figure 4-21. Estimated rental vacancy rate, Postcode 2380 (Gunnedah township), 2005-2019

Source: (SQM Research, 2020);

The rental vacancy rate in postcode 2381 has been relatively low (mostly below around 3%) in postcode 2381 (which includes rural areas such as Breeza, Curlewis, Premier and Tambar Springs) since around 2010. There was only a small number of dwellings in this postcode throughout this period and only a small number of rental vacancies in most months (between zero and three vacancies).

Figure 4-22. Estimated rental vacancy rate, Postcode 2381 (Breeza, Curlewis, Premer, Tambar Springs), 2005-2019

Source: (SQM Research, 2020);

4.2.2.6 Housing affordability

The Housing Kit Database (NSW Government [Family and Community Services], 2018b) provides information on rental and mortgage stress based on ABS census data. Housing stress (or rental or mortgage stress) is given when more than 30% of gross household income is spent on paying for rent or mortgage repayments. The data is presented according to household income for the three lowest income categories:

- Very low income households: Households earning less than 50% of the NSW or Sydney median income, depending on where they live. They include workers in a range of lower-paid occupations, particularly in areas such as retail or manufacturing, as well as people earning the minimum wage or who are on an aged or disability pension or other government benefit.
- Low income households: Households earning more than 50% but less than 80% of the NSW or Sydney median income, depending on where they live.
- Moderate income households: Households described as being on a moderate income are those earning between 80-120% of the NSW or Sydney median income.

For Narrabri LGA and Gunnedah LGA, household incomes appear to be compared to the median for Greater Sydney, rather than NSW as a whole in order to sort households into these categories. However, this could not be verified from the data provided.

According to the data (Table 4-19), high proportions of very low income households in the Narrabri LGA and Gunnedah LGA were experiencing rental and mortgage stress in 2016, however, Regional NSW had the highest proportion experiencing rental and mortgage stress. Around 81% of very low income households were experiencing rental stress and 46% were experiencing mortgage stress in Narrabri LGA, compared to 82% experiencing rental stress and 57% experiencing mortgage stress in Gunnedah LGA. These proportions were lower than the corresponding proportions for Regional NSW, with 89% experiencing rental stress and 62% experiencing mortgage stress. Rental stress is a significant issue for very low income households.

There was a similar result for low income and moderate income households, with the rates of housing stress lower in the Narrabri LGA and Gunnedah LGA than Regional NSW.

Table 4-19. Rental and mortgage stress by household income, Study areas (LGAs), 2016

Area	Rental Stress			Mortgage Stress		
	Very Low Income	Low Income	Moderate Income	Very Low Income	Low Income	Moderate Income
Narrabri LGA	201 (81%)	75 (38%)	12 (6%)	42 (46%)	66 (30%)	56 (16%)
Gunnedah LGA	205 (82%)	123 (46%)	12 (6%)	76 (57%)	53 (25%)	66 (20%)
Regional NSW	45,956 (89%)	32,141 (58%)	10,415 (23%)	17,863 (62%)	17,404 (36%)	15,610 (21%)

Source: (NSW Government [Family and Community Services], 2018b) [NSW Local Government Housing Kit] [M2];

Affordable rental dwellings in the Narrabri LGA and Gunnedah LGA became increasingly difficult to obtain for very low income households between 2012 and 2017, with the proportion of affordable dwellings declining compared to 2001, 2006 and 2011 (Table 4-20). However, more recently, the proportion of affordable dwellings has increased in Narrabri LGA in 2016 and 2017. The availability of affordable rentals for very low income households has been mostly higher in Narrabri LGA and Gunnedah LGA than in Regional NSW and NSW during this 16 year period (2001 to 2017).

Higher proportions of rental stock in Narrabri LGA and Gunnedah LGA were affordable for low income and moderate income households. The availability of affordable rental dwellings for these groups declined in 2012 to 2015 as well, but have since increased, and throughout this period were similar to the levels of availability in Regional NSW and higher than for NSW.

Table 4-20. Proportion of rental stock that is affordable, Study areas (LGAs), 2001, 2006, 2011-2017

Income	2001	2006	2011	2012	2013	2014	2015	2016	2017
Narrabri LGA									
Very Low Income	59.5%	76.0%	57.6%	44.9%	44.7%	32.7%	34.0%	39.2%	48.1%
Low Income	84.5%	93.3%	72.9%	60.4%	59.6%	48.2%	53.8%	67.9%	76.4%
Moderate Income	98.0%	97.8%	92.4%	83.7%	89.4%	75.2%	87.8%	96.3%	99.1%
Gunnedah LGA									
Very Low Income	76.6%	81.0%	34.1%	27.7%	29.3%	27.2%	22.1%	28.4%	28.1%
Low Income	97.5%	93.7%	71.0%	58.7%	60.0%	57.2%	55.7%	60.4%	69.6%
Moderate Income	98.3%	98.2%	89.1%	88.6%	90.3%	87.2%	89.3%	92.7%	99.3%
Regional NSW									
Very Low Income	48.5%	41.0%	28.3%	26.8%	24.4%	20.9%	22.6%	25.2%	23.1%
Low Income	82.7%	71.2%	54.4%	52.2%	52.3%	49.8%	55.3%	58.1%	54.1%
Moderate Income	94.8%	91.9%	84.3%	83.1%	85.0%	84.9%	85.7%	87.4%	91.7%
NSW									
Very Low Income	22.0%	23.0%	11.6%	11.0%	11.4%	9.2%	9.9%	10.4%	9.7%
Low Income	49.9%	49.6%	28.8%	27.6%	30.2%	25.3%	30.6%	31.1%	32.5%
Moderate Income	77.2%	78.7%	64.5%	63.5%	67.4%	64.1%	68.1%	69.1%	76.5%

Source: (NSW Government [Family and Community Services], 2018b) [NSW Local Government Housing Kit] [M3];

The stock of dwellings in the Narrabri LGA and Gunnedah LGA available for purchase that were considered affordable for very low income households was just above 20% in 2017 (Table 4-21). For Narrabri LGA, this proportion ranged from around 13% to 33% between 2001 and 2017. For Gunnedah LGA, the affordable purchase stock for very low income households was significantly lower between 2011 and 2014, at below 10% (1.5% to 6.4%). However, for the Narrabri LGA and Gunnedah LGA, the availability of affordable stock for purchase was similar or higher than the levels for Regional NSW.

Low income and moderate income households have more choice of affordable stock, with over 40% of stock being affordable for these groups in the Narrabri LGA and Gunnedah LGA in 2017. Throughout the period considered, the availability of affordable dwellings for purchase for low and moderate income households was higher in the Narrabri LGA and Gunnedah LGA than in Regional NSW and NSW.

Table 4-21. Proportion of purchase stock that is affordable, Study areas (LGAs), 2001, 2006, 2011-2017

Income	2001	2006	2011	2012	2013	2014	2015	2016	2017
Narrabri LGA									
Very Low Income	33.3%	29.2%	14.1%	20.0%	13.3%	14.0%	25.7%	25.0%	21.1%
Low Income	71.4%	54.7%	54.7%	41.3%	35.0%	35.1%	56.8%	46.4%	57.9%
Moderate Income	96.4%	84.0%	81.3%	76.3%	65.0%	84.2%	85.1%	76.8%	76.3%
Gunnedah LGA									
Very Low Income	40.0%	20.6%	1.5%	3.8%	4.2%	6.4%	14.5%	10.1%	22.2%
Low Income	71.3%	53.2%	25.0%	20.3%	32.4%	33.3%	52.6%	27.5%	42.6%
Moderate Income	93.8%	80.1%	70.6%	73.4%	78.9%	82.1%	86.8%	76.8%	70.4%
Regional NSW									
Very Low Income	6.9%	5.1%	3.3%	4.5%	5.2%	5.9%	6.6%	6.8%	9.0%
Low Income	24.2%	15.7%	12.9%	18.2%	21.5%	23.1%	26.4%	24.8%	24.7%
Moderate Income	51.9%	43.3%	40.5%	54.5%	59.6%	61.0%	65.4%	63.1%	53.6%
NSW									
Very Low Income	18.0%	2.0%	1.2%	1.6%	1.8%	1.9%	2.4%	2.3%	4.3%
Low Income	52.1%	7.0%	4.8%	8.2%	9.7%	8.5%	10.3%	9.0%	11.7%
Moderate Income	81.9%	25.1%	21.6%	32.6%	36.3%	31.5%	35.0%	31.2%	29.3%

Source: (NSW Government [Family and Community Services], 2018b) [NSW Local Government Housing Kit] [M3];

4.2.2.7 Housing diversity

The dwellings in the Narrabri LGA and Gunnedah LGA are primarily separate houses, with only a small proportion of semi-detached and attached dwellings. Narrabri township and Gunnedah township have a notably higher proportion of higher density housing types than Regional NSW (Table 4-22). Semi-detached and attached dwellings can be more affordable for some households and offer housing choice.

Table 4-22. Dwelling type, Study areas, 2016

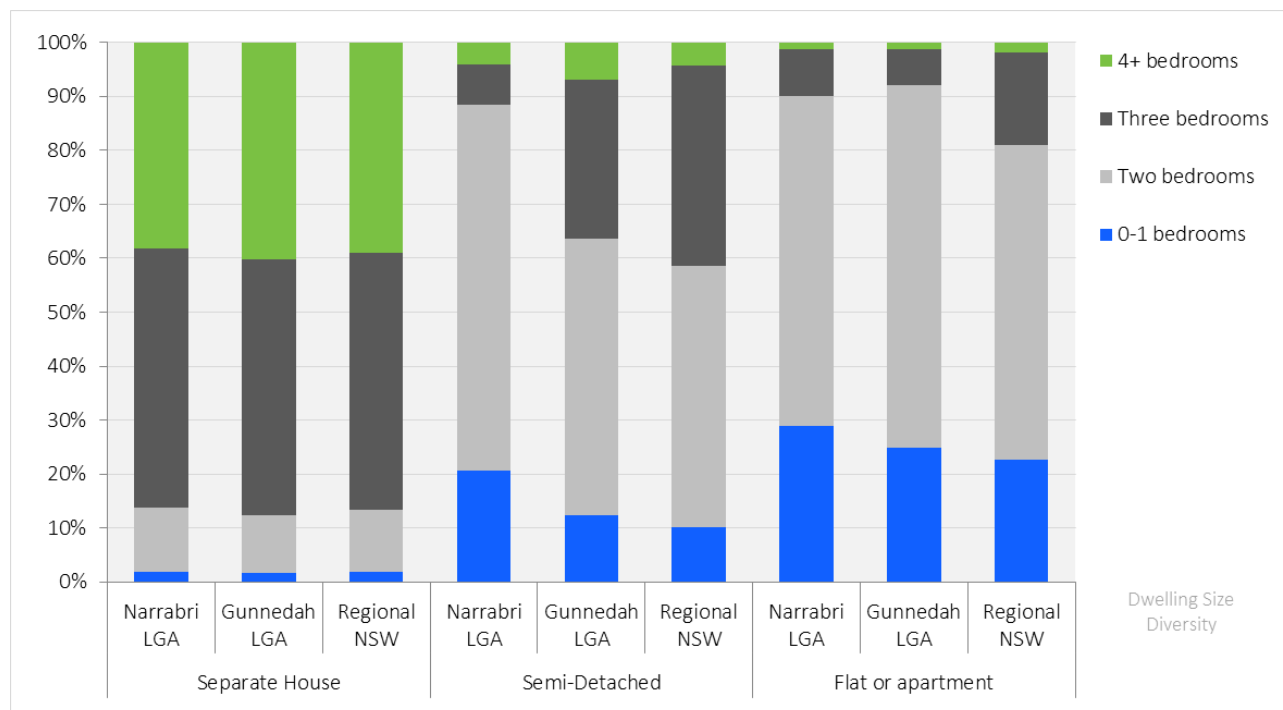
Area	Separate house	Semi-detached	Attached: Flat or apartment	Other: Caravan, Cabin, Shop, Tent	Total
Baan Baa and surrounds	63 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	63 (100%)
Narrabri township	1,816 (84.2%)	100 (4.6%)	208 (9.6%)	24 (1.1%)	2,158 (100%)
Boggabri township	296 (91.4%)	0 (0.0%)	17 (5.2%)	7 (2.2%)	324 (100%)
Gunnedah township	2,638 (85.7%)	153 (5.0%)	246 (8.0%)	21 (0.7%)	3,077 (100%)
Narrabri LGA	4,119 (89.0%)	159 (3.4%)	250 (5.4%)	71 (1.5%)	4,629 (100%)
Gunnedah LGA	4,062 (89.6%)	156 (3.4%)	247 (5.5%)	37 (0.8%)	4,531 (100%)
Regional NSW	805,594 (82.2%)	90,211 (9.2%)	63,149 (6.4%)	14,457 (1.5%)	980,440 (100%)
NSW	1,729,819 (66.4%)	317,446 (12.2%)	519,380 (19.9%)	23,585 (0.9%)	2,604,303 (100%)

Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. 'Not stated' responses are not shown but are included in totals. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

The number of bedrooms can also impact housing affordability and provide choice. Only a small proportion of separate houses in the Narrabri LGA and Gunnedah LGA offered two bedrooms or fewer, with three-bedroom houses being the most common (Figure 4-23). This was a similar breakdown to Regional NSW. Semi-detached dwellings provided some choice in the Gunnedah LGA, with a better range of housing sizes. However, for the Narrabri LGA, a large majority of semi-detached dwellings offered two bedrooms or fewer, with only a very small proportion offering three or more bedrooms. The majority of flats and apartments offered two bedrooms, and around one-quarter offered one bedroom. There were only small proportions of three-bedroom flats or apartments. Both the Narrabri LGA and Gunnedah LGA had higher proportions of small studio and one-bedroom apartments compared to Regional NSW.

Figure 4-23. Housing size diversity, Study areas (LGAs), 2016



Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

A comparison of household size and bedroom numbers is shown below (Table 4-23). This analysis shows that there were a large proportion of households with just one person usually resident living in two- and three-bedroom dwellings (around 30% and 40% respectively, for both the Narrabri LGA and Gunnedah LGA). Similarly, around 50% of households with two people were residing in three-bedroom dwellings in 2016 in both LGAs.

Table 4-23. Bedrooms by household size, Study areas (LGAs), 2016

Number of persons usually resident	0-1 bedroom	2 bedrooms	3 bedrooms	4 bedrooms	5+ bedrooms	Total
Narrabri LGA						
1 person	171 (14.3%)	363 (30.3%)	496 (41.4%)	143 (11.9%)	24 (2.0%)	1,197 (100%)
2 people	39 (2.4%)	272 (16.9%)	800 (49.8%)	417 (26.0%)	77 (4.8%)	1,605 (100%)
3 people	4 (0.7%)	52 (8.7%)	279 (46.7%)	221 (37.0%)	41 (6.9%)	597 (100%)
4 people	0 (0.0%)	26 (4.4%)	251 (42.3%)	267 (44.9%)	50 (8.4%)	594 (100%)
5 people	5 (1.6%)	9 (2.8%)	114 (35.6%)	141 (44.1%)	51 (15.9%)	320 (100%)
6 people	4 (3.3%)	3 (2.5%)	28 (23.0%)	56 (45.9%)	31 (25.4%)	122 (100%)
7 people	0 (0.0%)	0 (0.0%)	9 (37.5%)	9 (37.5%)	6 (25.0%)	24 (100%)
8 people +	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (100.0%)	5 (100%)
Total	225 (5.0%)	728 (16.3%)	1,971 (44.1%)	1,256 (28.1%)	287 (6.4%)	4,467 (100%)
Gunnedah LGA						
1 person	120 (10.0%)	361 (30.1%)	517 (43.1%)	179 (14.9%)	22 (1.8%)	1,199 (100%)
2 people	29 (1.9%)	234 (15.2%)	760 (49.5%)	440 (28.6%)	73 (4.8%)	1,536 (100%)
3 people	4 (0.6%)	34 (5.3%)	339 (53.0%)	217 (33.9%)	46 (7.2%)	640 (100%)
4 people	0 (0.0%)	21 (3.5%)	238 (39.7%)	285 (47.6%)	55 (9.2%)	599 (100%)
5 people	0 (0.0%)	9 (3.2%)	76 (27.0%)	144 (51.2%)	52 (18.5%)	281 (100%)
6 people	3 (2.6%)	0 (0.0%)	24 (20.7%)	54 (46.6%)	35 (30.2%)	116 (100%)
7 people	0 (0.0%)	0 (0.0%)	3 (23.1%)	5 (38.5%)	5 (38.5%)	13 (100%)
8 people +	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (45.5%)	6 (54.5%)	11 (100%)
Total	159 (3.6%)	657 (14.9%)	1,959 (44.5%)	1,328 (30.2%)	295 (6.7%)	4,398 (100%)

Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.2.2.8 Housing for non-local workers

There were two accommodation camps for temporary workers identified in the Narrabri LGA being:

- Narrabri Village: Opened in May 2011, initially with 242 rooms, but increased to 502 rooms by the following year. Currently owned and managed by Civeo (previously the MAC Services Group).
- Boggabri Village: Opened in December 2013 with 508 rooms. Currently owned and managed by Civeo (previously the MAC Services Group). Civeo has approval for a further 344 rooms, for a total of 852 rooms.

4.2.2.9 Housing for at-risk groups

There were 163 public housing dwellings in the Narrabri LGA in 2017 and just seven public housing dwellings in the Gunnedah LGA (Table 4-24).

Table 4-24. Public housing stock, Study areas (LGAs), June 2017

Area	Public Housing Stock
Narrabri LGA	163
Gunnedah LGA	7
Regional NSW	36,431

Source: (NSW Government [Family and Community Services], 2018b) [NSW Local Government Housing Kit] [S4];

There were 54 applicants on the waiting list for social housing in the Narrabri Allocation Zone, and 96 applications on the waiting list in the Gunnedah Allocation Zone (NSW Government [Family and Community Services], 2018a). Of these applicants, one was a priority applicant in the Narrabri Allocation Zone and 19 applicants were priority applicants in the Gunnedah Allocation Zone. Priority applicants are in urgent need of housing and are unable to find housing in the private rental market due to their complex life circumstances.

Expected waiting times for social housing range from up to two years for any dwelling in either Allocation Zone, and up to five to ten years for three- and four-bedroom dwellings in the Gunnedah Allocation Zone (Table 4-25).

Additional public housing stock is needed in the Gunnedah LGA given that the current stock of seven dwellings is well below the 96 applicants on the waiting list (including 19 priority applicants), and this is reflected in the longer wait times for social housing.

Table 4-25. Social housing waiting times, Social housing allocation zones, 30 June 2018

Area	Studio/ 1 bedroom	2 bedroom	3 bedroom	4+ bedroom
Narrabri Allocation Zone	2 to 5 years	2 to 5 years	Up to 2 years	2 to 5 years
Gunnedah Allocation Zone	2 to 5 years	2 to 5 years	5 to 10 years	5 to 10 years

Source: (NSW Government [Family and Community Services], 2018a) [Housing assistance: Social housing expected waiting times];

The homeless population in the Narrabri LGA in 2016 was estimated to be 33 people, and the homeless population in the Gunnedah LGA was estimated to be 18 people by the ABS (Table 4-26).

For this measure, homeless people are considered to include:

- Persons living in improvised dwellings, tents, or sleeping out.
- Persons in supported accommodation for the homeless.
- Persons staying temporarily with other households.
- Persons living in boarding houses.
- Persons in other temporary lodgings.
- Persons living in “severely” crowded dwellings.

This estimate is likely to underestimate homelessness, particularly young people, people displaced due to domestic and family violence and Aboriginal and Torres Strait Islander people.

Table 4-26. Number of homeless people, Study areas, 2011-2016

Area	2011	2016
Narrabri LGA	43	33
Gunnedah LGA	13	18
Regional NSW	7,942	8,703
NSW	27,483	37,692

Notes: Based on place of enumeration.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.2.3 Transport

Around 5% of households in the Narrabri LGA and Gunnedah LGA do not have access to a motor vehicle, with around 30% having one vehicle and 35% having two vehicles (Table 4-27). The townships of Narrabri and Gunnedah had slightly higher rates of households without a vehicle, while the rates for Baan Baa and surrounds and Boggabri were lower.

Table 4-27. Household access to motor vehicles, Study areas, 2016

Area	No vehicle	1 vehicle	2 vehicles	3+ vehicles	Total
Baan Baa and surrounds	3 (4.0%)	17 (22.7%)	20 (26.7%)	26 (34.7%)	75 (100%)
Narrabri township	168 (7.8%)	752 (34.8%)	764 (35.4%)	354 (16.4%)	2,158 (100%)
Boggabri township	18 (5.5%)	127 (39.1%)	103 (31.7%)	60 (18.5%)	325 (100%)
Gunnedah township	205 (6.7%)	1,150 (37.5%)	1,079 (35.1%)	458 (14.9%)	3,070 (100%)
Narrabri LGA	258 (5.6%)	1,397 (30.2%)	1,635 (35.3%)	1,100 (23.8%)	4,627 (100%)
Gunnedah LGA	226 (5.0%)	1,464 (32.3%)	1,639 (36.2%)	962 (21.2%)	4,529 (100%)
Regional NSW	60,129 (6.1%)	343,096 (35.0%)	355,217 (36.2%)	180,391 (18.4%)	980,436 (100%)
NSW	239,627 (9.2%)	946,160 (36.3%)	887,849 (34.1%)	435,054 (16.7%)	2,604,317 (100%)

Notes: Based on place of enumeration. Occupied dwellings, excluding those with visitors only and non-classifiable households. 'Not stated' responses are not shown but are included in totals. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Around 73% of employed residents in the Narrabri LGA and Gunnedah LGA drove a private vehicle to work. A very low proportion of employed residents used public transport. In the Narrabri LGA, Gunnedah LGA and Baan Baa and surrounds, the proportion of employed residents who worked from home was higher than for Regional NSW and NSW, and this may partly reflect workers involved in agriculture and working on their own property.

Table 4-28. Method of travel to work, Study areas, 2016

Area	Vehicle	Public Transport	Active Transport: Walking / Cycling	Worked at Home	Total
Baan Baa and surrounds	51 (68.9%)	0 (0.0%)	8 (10.8%)	12 (16.2%)	74 (100%)
Narrabri township	1,885 (75.7%)	37 (1.5%)	128 (5.1%)	90 (3.6%)	2,491 (100%)
Boggabri township	204 (75.0%)	6 (2.2%)	25 (9.2%)	9 (3.3%)	272 (100%)
Gunnedah township	2,534 (77.4%)	65 (2.0%)	121 (3.7%)	95 (2.9%)	3,272 (100%)
Narrabri LGA	4,105 (72.8%)	67 (1.2%)	301 (5.3%)	482 (8.5%)	5,642 (100%)
Gunnedah LGA	3,961 (73.7%)	84 (1.6%)	225 (4.2%)	422 (7.9%)	5,372 (100%)
Regional NSW	829,654 (75.1%)	14,078 (1.3%)	45,847 (4.2%)	64,005 (5.8%)	1,104,165 (100%)
NSW	2,152,284 (63.7%)	397,177 (11.7%)	154,289 (4.6%)	163,026 (4.8%)	3,380,326 (100%)

Notes: Based on place of usual residence. Other and 'Not stated' responses are not shown but are included in totals. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.2.4 Livelihoods

4.2.4.1 Local economy and economic development

Hierarchy and role of centres

The Narrabri Shire Growth Management Strategy (Narrabri Shire Council, 2009) identifies the following hierarchy for centres in the Narrabri LGA:

- District Centre: Narrabri.
- Town: Boggabri (along with Wee Waa in other parts of the LGA).
- Village: Baan Baa (along with Bellata, Edgeroi, Gwabegar and Pilliga in other parts of the LGA).
- Rural Centre: Turrawan (along with Cuttabri, Eulah Creek, Maules Creek, Merah North and Nowley in other parts of the LGA).

In the Gunnedah LGA, the Gunnedah Shire Rural Strategy (Gunnedah Shire Council, 2007) identifies the following centre hierarchy:

- Town: Gunnedah.
- Village: Breeza, Carroll, Curlewis, Mullaley and Tambar Springs in other parts of the LGA.
- Rural Centre: Willala (along with Kelvin in other parts of the LGA).

Both studies utilise the same hierarchy framework for centres as outlined below:

- Both District Centre and Town: The principal centre of the Shire. These provide a range of employment, entertainment and recreational opportunities, a full range of local services and some higher order services such as high school and health care as well as a major indoor recreation facility. They have a large mixed commercial area providing service, retail and office uses with a large chain supermarket. They cater for convenience, weekly and limited comparison shopping.
- Village: This provides only for convenience needs and typically has only a general store / post office.
- Rural Centre: This is a focal point for the surrounding community and usually has a community hall or bushfire shed. There are generally no shopping facilities or other services in this area.

Baan Baa is the closest centre to the Project and, according to the hierarchy, is only envisaged to provide for convenience needs such as a general store or post office. Currently, Baan Baa does not offer either of these facilities, but does provide a community hall and hotel. The Project may increase the viability of businesses located in Baan Baa and contribute to it fulfilling its role as a village in the hierarchy of population centres.

Gross regional product

The gross regional product (GRP) of the Narrabri LGA was estimated to be \$1,360 M and the Gunnedah LGA was \$872 M in 2018 (Remplan, 2019).

One of the main components of GRP is "value-added". This is the marginal economic value that is added by each industry sector in a defined area. The mining industry contributed 38.0% of the total value-added in the Narrabri LGA and 12.3% in the Gunnedah LGA (Table 4-29). The agriculture, forestry and fishing industries were also a major contributor to the economy, providing around 12% of the value-added for both the Narrabri LGA and Gunnedah LGA.

Economic development strategies and planning

A number of economic development strategies have been developed by councils to help grow the local economies of the Narrabri LGA and Gunnedah LGA. These strategies have been reviewed to consider their relevance to the Project and the priorities and values of the community. The two main strategies reviewed were:

- Narrabri Shire Economic Development Strategy 2011-2016; and
- Gunnedah Economic Development Strategy 2014.

Table 4-29. Value added by industries, Study areas (LGAs), 2016

Industry	Narrabri LGA	Gunnedah LGA
Agriculture, Forestry and Fishing	\$154 M (11.9%)	\$99 M (12.2%)
Mining	\$489 M (38.0%)	\$99 M (12.3%)
Manufacturing	\$33 M (2.6%)	\$42 M (5.2%)
Electricity, Gas, Water and Waste Services	\$26 M (2.0%)	\$19 M (2.4%)
Construction	\$56 M (4.3%)	\$51 M (6.3%)
Wholesale Trade	\$34 M (2.6%)	\$28 M (3.4%)
Retail Trade	\$40 M (3.1%)	\$37 M (4.5%)
Accommodation and Food Services	\$27 M (2.1%)	\$27 M (3.3%)
Transport, Postal and Warehousing	\$38 M (2.9%)	\$39 M (4.8%)
Information Media and Telecommunications	\$5 M (0.4%)	\$5 M (0.6%)
Financial and Insurance Services	\$32 M (2.5%)	\$39 M (4.8%)
Rental, Hiring and Real Estate Services	\$121 M (9.4%)	\$111 M (13.8%)
Professional, Scientific and Technical Services	\$36 M (2.8%)	\$28 M (3.5%)
Administrative and Support Services	\$33 M (2.6%)	\$27 M (3.3%)
Public Administration and Safety	\$40 M (3.1%)	\$36 M (4.5%)
Education and Training	\$45 M (3.5%)	\$46 M (5.6%)
Health Care and Social Assistance	\$59 M (4.6%)	\$54 M (6.6%)
Arts and Recreation Services	\$2 M (0.1%)	\$1 M (0.1%)
Other Services	\$20 M (1.5%)	\$21 M (2.6%)
Total	\$1,288 M (100%)	\$809 M (100%)

Notes: Value-added data represents the marginal economic value that is added by each industry sector in a defined region. Value-added can be calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector, or alternatively, by adding the wages and salaries paid to local employees, the gross operating surplus and taxes on products and production. Value-added by industry sector is the major element in the calculation of gross regional product.

Source: (Remplan, 2019);

The strategies were completed more than five years ago, and some of the findings and strategies may therefore be out of date. The key relevant findings of these studies related to the SIA include:

- Narrabri LGA:
 - A vision to grow a “vibrant, sustainable and diversified” economy was expressed in 2011 including agriculture, mining, tourism and services.
 - Mining services, machinery and equipment manufacturing, agricultural processing and food manufacturing, professional services, transport and logistics and hospitality and tourism were identified in 2011 as opportunities to grow and diversify the economy.
- Gunnedah LGA:
 - It was noted that the local economy was dependent on agriculture and mining in 2014, and there was competition between agriculture and mining for land, labour and resources, resulting in some conflict and skills shortages to the non-mining sector.
 - Strategies were identified in 2014 to help build a strong and skilled local workforce to fill any skills gaps.
 - An action to liaise with mining companies to explore opportunities for local supply contracts was identified in 2014 as well as local procurement contracts.

Both of the economic development strategies identified mining activity as a key economic driver that contributes to economic diversity. The transition of the local economies to include more mining employment and activity may have contributed to some skills shortages in the workforce, however the mining sector was generally viewed as being positive for employment, economic activity and supporting population.

4.2.4.2 Businesses by industry

The number of actively trading businesses and business exits were analysed for Narrabri LGA and Gunnedah LGA to understand the mix of employers and trends over time. The data on actively trading businesses is at 30 June 2018 based on their location of registration. Not all companies are registered in the location that they operate and therefore these counts are likely to underestimate the number of businesses that operate in the area of social influence. Also, multi-location businesses are only classified to a single location. Random adjustments have also been made to the data by the ABS to 'confidentialise' the results. The data for business exits has the same limitations.

There were no large businesses (with 200 or more employees) registered in the Narrabri LGA and Gunnedah LGA on 30 June 2018 (Table 4-30). There were however, a small number and proportion of medium-sized businesses (with 20-199 employees). The large majority of businesses were non-employee businesses and small businesses (with 1-19 employees).

Almost one-third of all businesses registered in the Narrabri LGA and Gunnedah LGA were agriculture, forestry and fishing businesses that were non-employing and around a further 10% of all businesses were small businesses (with 1-19 employees) in this industry.

There were also high numbers of businesses in the construction and rental, hiring and real estate services industries in both the Narrabri LGA and Gunnedah LGA.

Table 4-30. Business counts by industry, Study areas (LGAs), 2018

Business Location and Industry	Non-Employing	1-19 Employees	20-199 Employees	200+ Employees	Total
Narrabri LGA					
Agriculture, Forestry and Fishing	539 (30.4%)	224 (12.6%)	3 (0.2%)	0 (0.0%)	767 (43.3%)
Mining	3 (0.2%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	3 (0.2%)
Manufacturing	25 (1.4%)	18 (1.0%)	3 (0.2%)	0 (0.0%)	44 (2.5%)
Electricity, Gas, Water and Waste Services	9 (0.5%)	3 (0.2%)	3 (0.2%)	0 (0.0%)	14 (0.8%)
Construction	116 (6.5%)	80 (4.5%)	0 (0.0%)	0 (0.0%)	195 (11.0%)
Wholesale Trade	13 (0.7%)	14 (0.8%)	0 (0.0%)	0 (0.0%)	27 (1.5%)
Retail Trade	19 (1.1%)	50 (2.8%)	3 (0.2%)	0 (0.0%)	68 (3.8%)
Accommodation and Food Services	20 (1.1%)	32 (1.8%)	0 (0.0%)	0 (0.0%)	53 (3.0%)
Transport, Postal and Warehousing	61 (3.4%)	49 (2.8%)	3 (0.2%)	0 (0.0%)	109 (6.2%)
Information Media and Telecommunications	0 (0.0%)	3 (0.2%)	3 (0.2%)	0 (0.0%)	3 (0.2%)
Financial and Insurance Services	61 (3.4%)	10 (0.6%)	0 (0.0%)	0 (0.0%)	74 (4.2%)
Rental, Hiring and Real Estate Services	129 (7.3%)	14 (0.8%)	0 (0.0%)	0 (0.0%)	144 (8.1%)
Professional, Scientific and Technical Services	39 (2.2%)	38 (2.1%)	0 (0.0%)	0 (0.0%)	74 (4.2%)
Administrative and Support Services	19 (1.1%)	20 (1.1%)	0 (0.0%)	0 (0.0%)	31 (1.8%)
Public Administration and Safety	3 (0.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Education and Training	5 (0.3%)	3 (0.2%)	3 (0.2%)	0 (0.0%)	10 (0.6%)
Health Care and Social Assistance	17 (1.0%)	16 (0.9%)	0 (0.0%)	0 (0.0%)	39 (2.2%)
Arts and Recreation Services	3 (0.2%)	4 (0.2%)	0 (0.0%)	0 (0.0%)	9 (0.5%)
Other Services	39 (2.2%)	35 (2.0%)	0 (0.0%)	0 (0.0%)	78 (4.4%)
Inadequately described/Not stated	12 (0.7%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	12 (0.7%)
Total Businesses	1,125 (63.5%)	633 (35.7%)	14 (0.8%)	0 (0.0%)	1,771 (100.0%)

Business Location and Industry	Non-Employing	1-19 Employees	20-199 Employees	200+ Employees	Total
Gunnedah LGA					
Agriculture, Forestry and Fishing	491 (31.5%)	167 (10.7%)	3 (0.2%)	0 (0.0%)	665 (42.7%)
Mining	3 (0.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (0.4%)
Manufacturing	27 (1.7%)	12 (0.8%)	6 (0.4%)	0 (0.0%)	44 (2.8%)
Electricity, Gas, Water and Waste Services	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (0.2%)
Construction	106 (6.8%)	57 (3.7%)	0 (0.0%)	0 (0.0%)	159 (10.2%)
Wholesale Trade	13 (0.8%)	19 (1.2%)	3 (0.2%)	0 (0.0%)	35 (2.2%)
Retail Trade	29 (1.9%)	36 (2.3%)	3 (0.2%)	0 (0.0%)	66 (4.2%)
Accommodation and Food Services	13 (0.8%)	33 (2.1%)	3 (0.2%)	0 (0.0%)	41 (2.6%)
Transport, Postal and Warehousing	43 (2.8%)	27 (1.7%)	0 (0.0%)	0 (0.0%)	73 (4.7%)
Information Media and Telecommunications	0 (0.0%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	4 (0.3%)
Financial and Insurance Services	63 (4.0%)	7 (0.4%)	0 (0.0%)	0 (0.0%)	71 (4.6%)
Rental, Hiring and Real Estate Services	125 (8.0%)	23 (1.5%)	0 (0.0%)	0 (0.0%)	147 (9.4%)
Professional, Scientific and Technical Services	44 (2.8%)	39 (2.5%)	0 (0.0%)	0 (0.0%)	78 (5.0%)
Administrative and Support Services	18 (1.2%)	10 (0.6%)	0 (0.0%)	0 (0.0%)	24 (1.5%)
Public Administration and Safety	0 (0.0%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	3 (0.2%)
Education and Training	0 (0.0%)	7 (0.4%)	0 (0.0%)	0 (0.0%)	8 (0.5%)
Health Care and Social Assistance	27 (1.7%)	22 (1.4%)	3 (0.2%)	0 (0.0%)	47 (3.0%)
Arts and Recreation Services	3 (0.2%)	4 (0.3%)	0 (0.0%)	0 (0.0%)	8 (0.5%)
Other Services	27 (1.7%)	37 (2.4%)	0 (0.0%)	0 (0.0%)	65 (4.2%)
Inadequately described/Not stated	4 (0.3%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	10 (0.6%)
Total Businesses	1,035 (66.4%)	504 (32.3%)	21 (1.3%)	0 (0.0%)	1,558 (100.0%)

Notes: Count of actively trading businesses at 30 June 2018 from the Australia Bureau of Statistics Business Register (ABSBR) based on their location of registration. Multi-location businesses are recorded in one location only. Data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2019);

The majority of businesses that stopped trading between 2015 and 2018 were small non-employing businesses in both the Narrabri LGA and Gunnedah LGA. The number of business exits declined throughout this period from around 200 to 130 exits per year in the Narrabri LGA and from around 150 to 120 business exits per year in the Gunnedah LGA. This also represented a decline in the proportion of businesses overall to around 7.5% of total businesses in Narrabri LGA and Gunnedah LGA. Business exits were not available at the LGA level by industry so declining industries could not be established.

Table 4-31. Business exits, Study areas (LGAs), 2015-18

Business Location and Size	2015	2016	2017	2018
Narrabri LGA				
Non-employing	161	117	97	103
1-19 Employees	33	36	23	25
20+ Employees	3	-	-	-
Total Business Exits	199 (11.2%)	148 (8.8%)	120 (6.8%)	132 (7.5%)
Total Businesses	1,779	1,687	1,759	1,771

Business Location and Size	2015	2016	2017	2018
Gunnedah LGA				
Non-employing	127	115	89	96
1-19 Employees	32	23	22	25
20+ Employees	-	-	-	-
Total Business Exits	154 (10.1%)	137 (9.2%)	114 (7.4%)	118 (7.6%)
Total Businesses	1,521	1,493	1,531	1,558

Notes: Exits of actively trading businesses at 30 June each year from the Australia Bureau of Statistics Business Register (ABSBR) based on their location of registration. Multi-location businesses are recorded in one location only. Data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2019);

4.2.4.3 Incomes and employment

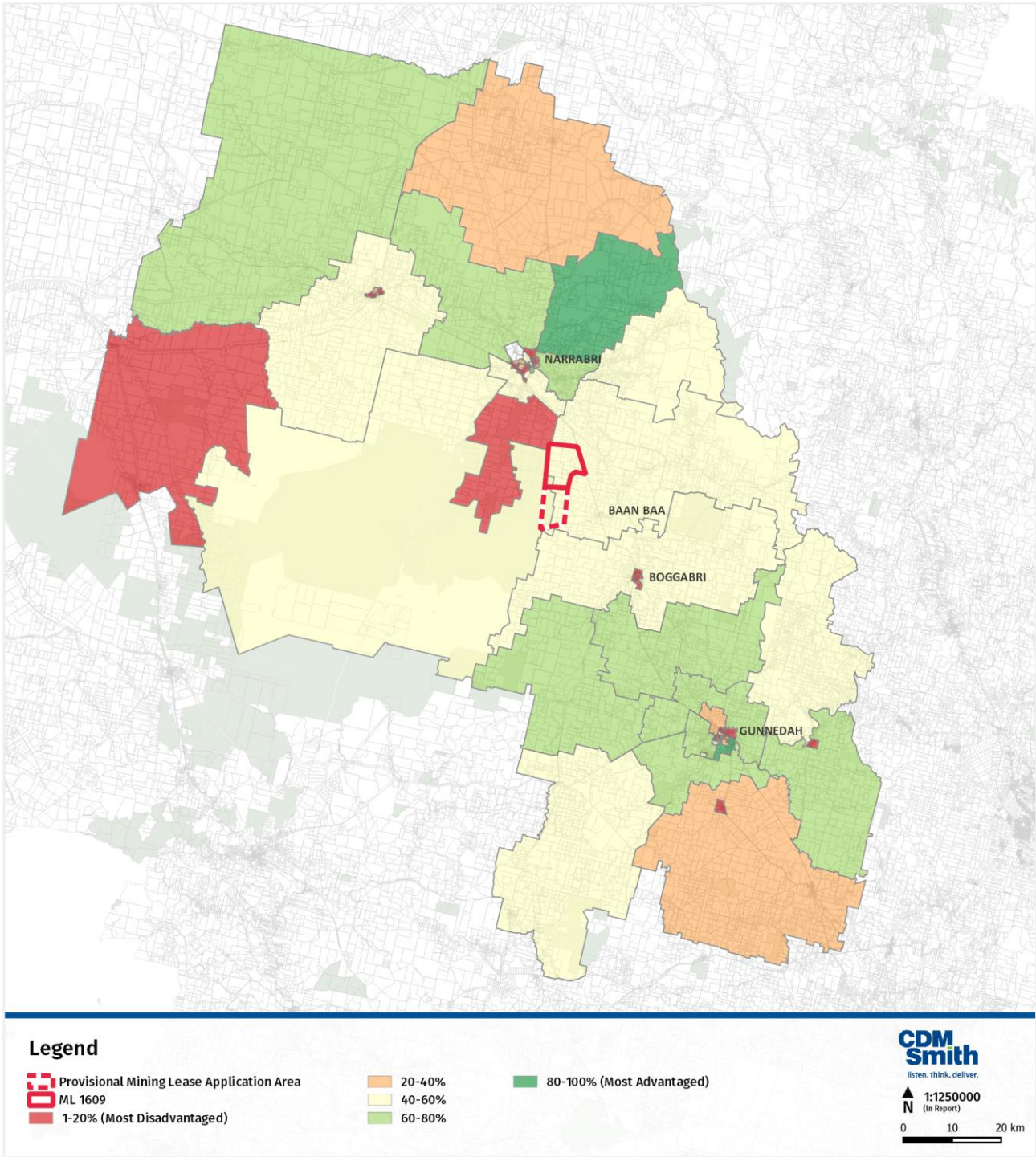
Disadvantage

The Socio-Economic Indexes for Areas are measures developed by the ABS that rank areas in Australia according to relative socio-economic advantage and disadvantage by using various census-based statistics (for example, income, skills, unemployment, educational attainment, etc.). For this measure, each ABS Statistical Area Level 1 (or SA1, and referred to as 'locality' in the rest of this section) in Australia is ranked from most disadvantaged to least disadvantaged.

When statistics that measured both advantage and disadvantage were included, 28 localities in the Narrabri LGA and Gunnedah LGA were identified as being within the most disadvantaged localities in Australia (bottom 20%) (Figure 4-24). These localities had a population of some 25,000 residents.

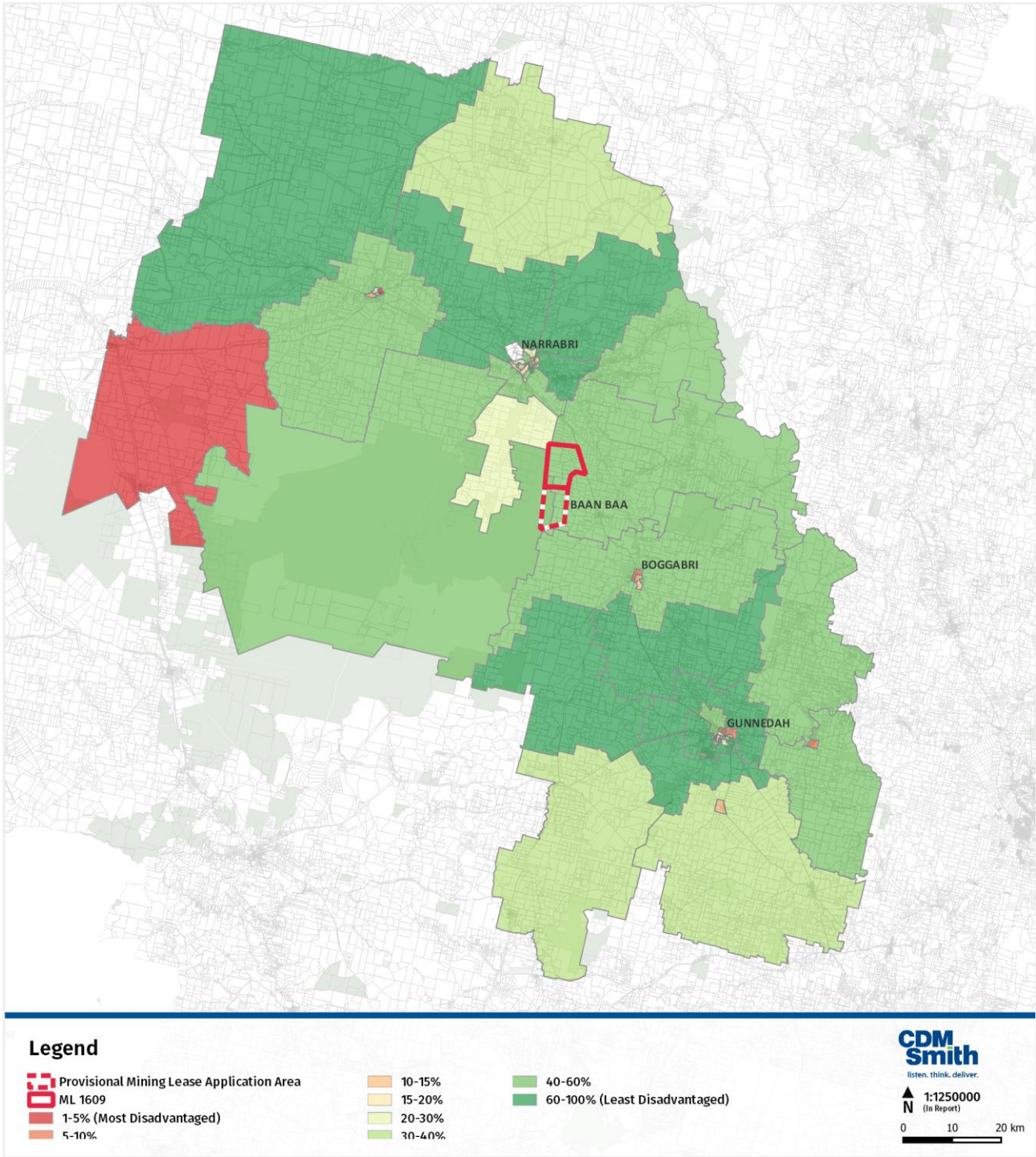
When statistics that measured disadvantage only, six localities in the Narrabri LGA and Gunnedah LGA were identified as being significantly disadvantaged (Figure 4-25). These localities were in the bottom 5% of all localities in Australia.

Figure 4-24. Socio-economic advantage and disadvantage, Study areas (LGAs), 2016



Notes: For this measure, each SA1 in Australia was ranked from most disadvantaged to most advantaged. The percentages show how localities in Narrabri LGA and Gunnedah LGA compare to other SA1s in Australia.
Source: (Australian Bureau of Statistics, 2018a)

Figure 4-25. Socio-economic disadvantage, Study areas (LGAs), 2016



Notes: For this measure, each SA1 in Australia was ranked from most disadvantaged to least disadvantaged. The percentages show how localities in Narrabri LGA and Gunnedah LGA compare to other SA1s in Australia.
Source: (Australian Bureau of Statistics, 2018a)

Income

The median income of all residents over 15 years of age of the Narrabri LGA was \$632 per week in 2016 and \$618 per week for residents of the Gunnedah LGA (Table 4-32). These medians were slightly higher than the median for Regional NSW (\$584), but lower than the median for NSW (\$664). Median personal incomes were highest in Baan Baa and surrounds (at \$655 per week), followed by Narrabri township (\$629 per week), Gunnedah township (\$596 per week) and Boggabri township (\$540 per week).

Median household incomes in 2016 followed a similar trend, with the median household income in Narrabri LGA and Gunnedah LGA slightly higher than for Regional NSW but slightly lower than for NSW as a whole. Baan Baa and surrounds had the highest median household income followed by Narrabri township, Gunnedah township and Boggabri township.

Table 4-32. Median weekly income, Study areas, 2016

Area	Personal	Family	Household
Baan Baa and surrounds	\$655	\$1,347	\$1,218
Narrabri township	\$629	\$1,521	\$1,209
Boggabri township	\$540	\$1,218	\$1,051
Gunnedah township	\$596	\$1,507	\$1,167
Narrabri LGA	\$632	\$1,531	\$1,242
Gunnedah LGA	\$618	\$1,586	\$1,253
Regional NSW	\$584	\$1,449	\$1,168
NSW	\$664	\$1,780	\$1,486

Notes: Based on place of enumeration. Income is total gross income; it includes total income from wages and salary, government benefits, business income, and investment income, and does not deduct tax or superannuation.

Source: (Australian Bureau of Statistics, 2017a) [QuickStats];

Low income households

Low income households (defined as those in the bottom 40% of income distribution nationally) made up slightly higher proportions of the population in Narrabri LGA (40.9%) and Gunnedah LGA (43.5%) than the NSW average; however, they comprise a lower proportion than the average for Regional NSW (Table 4-33).

Table 4-33. Low-income households, Study areas (LGAs), 2016

Area	Low Income Households (Bottom 40% of Income Nationally)
Narrabri LGA	2,140 (40.9%)
Gunnedah LGA	2,127 (43.5%)
Regional NSW	477,655 (48.7%)
NSW	1,053,197 (40.4%)

Notes: Based on place of enumeration. Low income households are households in the bottom 40% of income distribution nationally. Income is total gross income; it includes total income from wages and salary, government benefits, business income, and investment income, and does not deduct tax or superannuation.

Source: (Torrens University Australia, 2019);

There were 420 families with children in the Narrabri LGA that were welfare-dependent, low income families, and 407 families in the Gunnedah LGA (Table 4-34). There were slightly higher proportions of welfare-dependent families in the Narrabri LGA and Gunnedah LGA when expressed as a proportion of total families, compared to Regional NSW and NSW as a whole.

Table 4-34. Low-income, welfare-dependent families, Study areas (LGAs), 2016

Area	Low Income, Welfare-dependent Families with Children
Narrabri LGA	420 (12.8%)
Gunnedah LGA	407 (12.8%)
Regional NSW	75,842 (10.9%)
NSW	170,549 (8.8%)

Notes: Families included are those with children under 16 years of age and with incomes under \$37,378 p.a. in receipt of the Family Tax Benefit (A) (whether receiving income support payments or not).

Source: (Torrens University Australia, 2019);

Employment

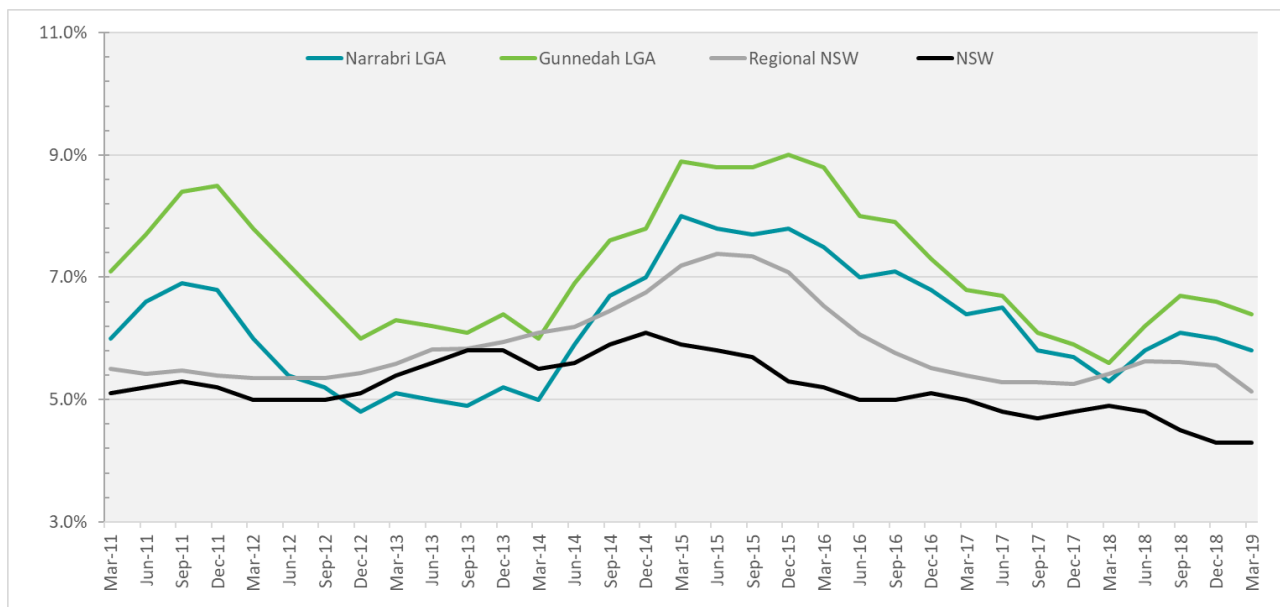
The unemployment rate in the Narrabri LGA and Gunnedah LGA has been higher than the unemployment rate for Regional NSW and NSW for much of the last five years (Table 4-35 and Figure 4-26). The unemployment rate reached a high of around 9.0% in Gunnedah LGA in 2015 but has since declined to below 7.0% in the last two years. The unemployment rate was also high in Narrabri LGA during 2015 at around 8.0% but has since declined to around 6.0% currently. The NSW rate has remained relatively stable over the same period.

Table 4-35. Unemployment and unemployment rate, Study areas (LGAs), June Quarter, 2011-2018

Area	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17	Jun-18
Narrabri LGA	462 (6.6%)	376 (5.4%)	333 (5.0%)	391 (5.9%)	535 (7.8%)	472 (7.0%)	422 (6.5%)	384 (5.8%)
Gunnedah LGA	473 (7.7%)	435 (7.2%)	365 (6.2%)	401 (6.9%)	536 (8.8%)	488 (8.0%)	394 (6.7%)	372 (6.2%)
Regional NSW	5.4%	5.3%	5.8%	6.2%	7.4%	6.1%	5.3%	5.6%
NSW	5.2%	5.0%	5.6%	5.6%	5.8%	5.0%	4.8%	4.8%

Note: Estimates of unemployment and the unemployment rate at the LGA level can display significant variability and should be viewed with caution. Trends should be considered rather than quarter-to-quarter movements.

Source: (Australian Government [Department of Jobs and Small Business], 2018); (Informed Decisions, 2019);

Figure 4-26: Unemployment rate, Study areas (LGAs), Quarters, March 2011- March 2019

Note: Estimates of unemployment and the unemployment rate at the LGA level can display significant variability and should be viewed with caution. Trends should be considered rather than quarter-to-quarter movements.

Source: (Australian Government [Department of Jobs and Small Business], 2018); (Informed Decisions, 2019);

Unemployment and workforce participation rates for the smaller study areas are available from ABS census data for 2016 (Table 4-36). The data shows that unemployment was high in Baan Baa and surrounds at 14.0% and Boggabri township at 10.8% in 2016, however, these two areas have very small populations and therefore these rates should be used with caution. For example, the unemployment rate in Baan Baa and surrounds represented just 12 people who were looking for work and for Boggabri township only 33 people. The workforce participation rate was however, high in Baan Baa and surrounds compared to the other areas at 71.7%. In contrast, the Boggabri township had a low workforce participation rate of 50.5%.

Table 4-36. Workforce participation and employment, Study areas, 2016

Area	Looking for Work ¹			Full-Time Labour Force ²			Workforce Participation ³		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Baan Baa and surrounds	5 (8.9%)	3 (9.4%)	12 (14.0%)	44 (78.6%)	14 (43.8%)	52 (60.5%)	56 (80.0%)	32 (60.4%)	86 (71.7%)
Narrabri township	98 (6.9%)	81 (6.4%)	181 (6.8%)	1,009 (71.3%)	578 (46.0%)	1,589 (59.5%)	1,416 (69.9%)	1,256 (59.1%)	2,671 (64.4%)
Boggabri township	20 (11.2%)	14 (9.9%)	33 (10.8%)	126 (70.8%)	58 (41.1%)	179 (58.5%)	178 (57.1%)	141 (45.9%)	306 (50.5%)
Gunnedah township	126 (6.7%)	105 (6.4%)	232 (6.6%)	1,391 (73.9%)	709 (43.4%)	2,107 (59.9%)	1,882 (67.1%)	1,633 (53.6%)	3,517 (60.0%)
Narrabri LGA	199 (6.1%)	155 (5.7%)	362 (6.0%)	2,418 (73.7%)	1,231 (45.1%)	3,641 (60.6%)	3,280 (71.5%)	2,732 (60.1%)	6,013 (65.8%)
Gunnedah LGA	165 (5.3%)	155 (6.0%)	311 (5.5%)	2,340 (75.2%)	1,130 (43.7%)	3,473 (61.0%)	3,112 (70.6%)	2,585 (57.4%)	5,689 (63.9%)
Regional NSW	43,180 (7.0%)	35,238 (6.2%)	78,415 (6.6%)	418,122 (68.0%)	234,165 (41.3%)	652,283 (55.2%)	615,209 (63.1%)	567,377 (55.3%)	1,182,577 (59.1%)
NSW	119,302 (6.3%)	106,247 (6.2%)	225,552 (6.3%)	1,329,577 (70.0%)	804,943 (47.1%)	2,134,527 (59.2%)	1,898,350 (68.4%)	1,707,530 (58.5%)	3,605,891 (63.3%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon. 1. People looking for work as a proportion of the total workforce. 2. People employed full-time as a proportion of the total workforce. 3. People who are part of the workforce (including looking for work) as a proportion of the total population 15 years and over.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

In the Narrabri LGA in 2016, 17.8% of workers were employed as managers, 14.2% were employed as technicians and trades workers, and 13.7% were employed as professionals (Table 4-37). The proportion of managers has declined over the preceding ten years from around 22.6% in 2006 to 17.8% in 2016. Farmers are, in the main, classified as managers under the Australian and New Zealand Standard Classification of Occupations (ANZCO) and this decline in managers may therefore partially reflect a decline in the number of farmers in the Narrabri LGA. The proportion of professionals increased from 11.9% in 2006 to 13.7% in 2016.

In the Gunnedah LGA, 16.8% of workers were employed as managers, 14.5% were employed as machinery operators and drivers, and 13.5% were technicians and trades workers. The proportion of managers declined quite significantly in the preceding ten years from around 21.9% in 2006 to 16.8% in 2016. As with Narrabri LGA, this may reflect a decline in the number of farmers. The proportion of machinery operators and drivers increased quite substantially from 9.5% from 2006 to 14.5% in 2016, potentially reflecting growth in the resources sector.

In the Narrabri LGA, more females were employed as clerical and administrative workers, professionals and community and personal service workers compared to males (Table 4-38), while more males were employed as managers, technicians and trades workers and machinery operators and drivers.

In the Gunnedah LGA, the trends were similar, with more females employed as clerical and administrative workers, professionals and community and personal service workers, while more males were employed as managers, technicians and trades workers and machinery operators and drivers.

Males in Narrabri LGA and Gunnedah LGA were more likely to be involved in potentially well-paid occupations in the mining sector compared to females.

Table 4-37. Occupation of residents, Study areas (LGAs), 2006, 2011 and 2016

Occupation	2006	2011	2016
Narrabri LGA			
Managers	1,301 (22.6%)	1,149 (19.7%)	1,009 (17.8%)
Professionals	686 (11.9%)	700 (12.0%)	774 (13.7%)
Technicians and Trades Workers	793 (13.8%)	837 (14.3%)	801 (14.2%)
Community and Personal Service Workers	406 (7.1%)	456 (7.8%)	492 (8.7%)
Clerical and Administrative Workers	656 (11.4%)	667 (11.4%)	604 (10.7%)
Sales Workers	484 (8.4%)	489 (8.4%)	468 (8.3%)
Machinery Operators and Drivers	570 (9.9%)	708 (12.1%)	691 (12.2%)
Labourers	754 (13.1%)	709 (12.1%)	704 (12.4%)
Inadequately described/Not stated	112 (1.9%)	114 (2.0%)	115 (2.0%)
Total employed persons aged 15+	5,756 (100%)	5,836 (100%)	5,657 (100%)
Gunnedah LGA			
Managers	1,023 (21.9%)	1,006 (19.3%)	905 (16.8%)
Professionals	582 (12.4%)	662 (12.7%)	717 (13.3%)
Technicians and Trades Workers	572 (12.2%)	663 (12.7%)	726 (13.5%)
Community and Personal Service Workers	389 (8.3%)	467 (8.9%)	500 (9.3%)
Clerical and Administrative Workers	499 (10.7%)	539 (10.3%)	539 (10.0%)
Sales Workers	386 (8.2%)	460 (8.8%)	426 (7.9%)
Machinery Operators and Drivers	446 (9.5%)	650 (12.4%)	780 (14.5%)
Labourers	713 (15.2%)	693 (13.3%)	689 (12.8%)
Inadequately described/Not stated	65 (1.4%)	80 (1.5%)	101 (1.9%)
Total employed persons aged 15+	4,680 (100%)	5,225 (100%)	5,381 (100%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017a) [Time Series Profile];

Table 4-38. Occupation of residents, Males and Females, Study areas (LGAs), 2016

Occupation	Narrabri LGA		Gunnedah LGA	
Sex	Males	Females	Males	Females
Managers	703 (12.4%)	306 (5.4%)	615 (11.4%)	292 (5.4%)
Professionals	262 (4.6%)	508 (9.0%)	236 (4.4%)	485 (9.0%)
Technicians and Trades Workers	635 (11.2%)	162 (2.9%)	612 (11.4%)	115 (2.1%)
Community and Personal Service Workers	87 (1.5%)	405 (7.2%)	68 (1.3%)	434 (8.1%)
Clerical and Administrative Workers	71 (1.3%)	533 (9.4%)	60 (1.1%)	479 (8.9%)
Sales Workers	166 (2.9%)	299 (5.3%)	153 (2.8%)	270 (5.0%)
Machinery Operators and Drivers	640 (11.3%)	45 (0.8%)	697 (13.0%)	84 (1.6%)
Labourers	434 (7.7%)	269 (4.8%)	446 (8.3%)	236 (4.4%)
Inadequately described/Not stated	77 (1.4%)	39 (0.7%)	65 (1.2%)	38 (0.7%)
Total employed persons aged 15+	3,083 (54.5%)	2,574 (45.5%)	2,948 (54.8%)	2,432 (45.2%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Nearly 20% of the Narrabri LGA workers were employed in the agriculture, forestry and fishing industry in 2016, followed by 10.1% in health care and social assistance, and 9.0% in retail trade (Table 4-39). The number of workers and the proportion of workers employed in the agriculture, forestry and fishing industry in the Narrabri LGA has decreased in the ten years between 2006 and 2016, from 25.2% to 19.6% of workers, representing a decline of 343 workers. The number and proportion of workers employed in the mining industry has increased between 2006 and 2016, from 0.5% to 5.5% of workers, representing an increase of 285 workers.

For the Gunnedah LGA, 13.8% of workers were employed in the agriculture, forestry and fishing industry in 2016, followed by 13.7% in mining, and 10.2% in health care and social assistance. The number of workers and the proportion of workers employed in the agriculture, forestry and fishing industry in the Gunnedah LGA has decreased in the ten years between 2006 and 2016, from 18.2% to 13.8% of workers, representing a decline of 111 workers. The number and proportion of workers employed in the mining industry has increased substantially between 2006 and 2016, from 2.5% to 13.7% of workers, representing an increase of 620 workers.

A chart showing the change in employment in the agriculture, forestry and fishing industry and the mining industry for both Narrabri LGA and Gunnedah LGA is shown below (Figure 4-27).

Table 4-39. Industry of employment of residents, Study areas (LGAs), 2006, 2011 and 2016

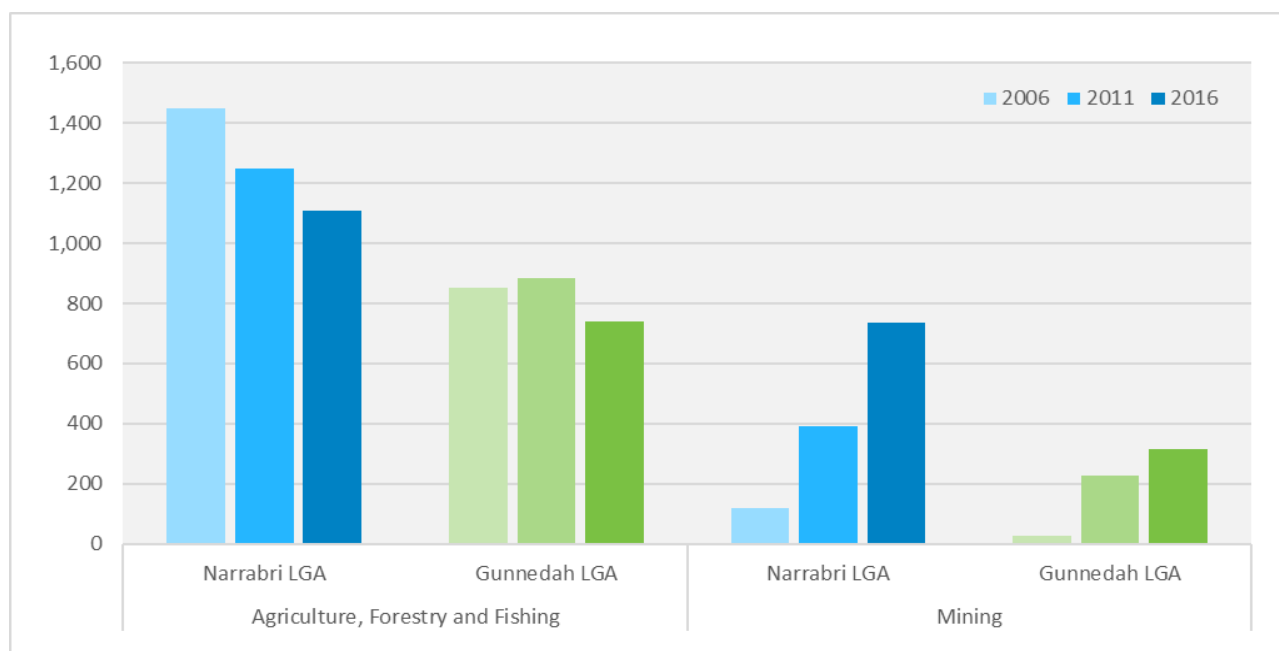
Industry	2006	2011	2016
Narrabri LGA			
Agriculture, Forestry and Fishing	1,450 (25.2%)	1,249 (21.4%)	1,107 (19.6%)
Mining	28 (0.5%)	227 (3.9%)	313 (5.5%)
Manufacturing	297 (5.2%)	289 (5.0%)	173 (3.1%)
Electricity, Gas, Water and Waste Services	57 (1.0%)	70 (1.2%)	72 (1.3%)
Construction	324 (5.6%)	345 (5.9%)	333 (5.9%)
Wholesale Trade	165 (2.9%)	210 (3.6%)	143 (2.5%)
Retail Trade	576 (10.0%)	568 (9.7%)	508 (9.0%)
Accommodation and Food Services	349 (6.1%)	360 (6.2%)	352 (6.2%)
Transport, Postal and Warehousing	390 (6.8%)	362 (6.2%)	266 (4.7%)
Information Media and Telecommunications	41 (0.7%)	32 (0.5%)	35 (0.6%)
Financial and Insurance Services	71 (1.2%)	78 (1.3%)	61 (1.1%)
Rental, Hiring and Real Estate Services	47 (0.8%)	48 (0.8%)	46 (0.8%)
Professional, Scientific and Technical Services	276 (4.8%)	250 (4.3%)	260 (4.6%)
Administrative and Support Services	136 (2.4%)	113 (1.9%)	184 (3.3%)
Public Administration and Safety	247 (4.3%)	267 (4.6%)	282 (5.0%)
Education and Training	369 (6.4%)	360 (6.2%)	393 (6.9%)
Health Care and Social Assistance	453 (7.9%)	559 (9.6%)	571 (10.1%)
Arts and Recreation Services	33 (0.6%)	37 (0.6%)	31 (0.5%)
Other Services	260 (4.5%)	244 (4.2%)	262 (4.6%)
Inadequately described/Not stated	184 (3.2%)	164 (2.8%)	273 (4.8%)
Total employed persons aged 15+	5,756 (100%)	5,836 (100%)	5,657 (100%)

Industry	2006	2011	2016
Gunnedah LGA			
Agriculture, Forestry and Fishing	852 (18.2%)	883 (16.9%)	741 (13.8%)
Mining	117 (2.5%)	391 (7.5%)	737 (13.7%)
Manufacturing	420 (9.0%)	367 (7.0%)	270 (5.0%)
Electricity, Gas, Water and Waste Services	45 (1.0%)	71 (1.4%)	54 (1.0%)
Construction	218 (4.7%)	271 (5.2%)	274 (5.1%)
Wholesale Trade	145 (3.1%)	141 (2.7%)	148 (2.8%)
Retail Trade	481 (10.3%)	515 (9.9%)	431 (8.0%)
Accommodation and Food Services	308 (6.6%)	357 (6.8%)	368 (6.8%)
Transport, Postal and Warehousing	220 (4.7%)	250 (4.8%)	189 (3.5%)
Information Media and Telecommunications	45 (1.0%)	30 (0.6%)	29 (0.5%)
Financial and Insurance Services	66 (1.4%)	66 (1.3%)	66 (1.2%)
Rental, Hiring and Real Estate Services	65 (1.4%)	64 (1.2%)	67 (1.2%)
Professional, Scientific and Technical Services	162 (3.5%)	166 (3.2%)	185 (3.4%)
Administrative and Support Services	76 (1.6%)	111 (2.1%)	146 (2.7%)
Public Administration and Safety	271 (5.8%)	261 (5.0%)	241 (4.5%)
Education and Training	354 (7.6%)	405 (7.8%)	418 (7.8%)
Health Care and Social Assistance	429 (9.2%)	494 (9.5%)	551 (10.2%)
Arts and Recreation Services	33 (0.7%)	36 (0.7%)	19 (0.4%)
Other Services	218 (4.7%)	227 (4.3%)	253 (4.7%)
Inadequately described/Not stated	146 (3.1%)	133 (2.5%)	202 (3.8%)
Total employed persons aged 15+	4,680 (100%)	5,225 (100%)	5,381 (100%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017a) [Time Series Profile];

Figure 4-27. Employment change, Agriculture, Forestry and Fishing and Mining, Study areas (LGAs), 2006, 2011 and 2016



Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017a) [Time Series Profile];

In both the Narrabri LGA and Gunnedah LGA in 2016, males were much more likely to be employed in the mining sector compared to females (Table 4-40 and Table 4-44). In the Narrabri LGA, 4.9% of employed males were employed in the mining sector, compared to 0.6% of females. In the Gunnedah LGA, 11.9% of employed males were employed in the mining sector, compared to 1.9% of females.

Table 4-40. Industry of employment of residents, Males and Females, Study areas (LGAs), 2016

Industry	Narrabri LGA		Gunnedah LGA	
	Males	Females	Males	Females
Agriculture, Forestry and Fishing	832 (14.7%)	275 (4.9%)	543 (10.1%)	195 (3.6%)
Mining	276 (4.9%)	36 (0.6%)	641 (11.9%)	101 (1.9%)
Manufacturing	119 (2.1%)	48 (0.8%)	213 (4.0%)	59 (1.1%)
Electricity, Gas, Water and Waste Services	65 (1.1%)	8 (0.1%)	42 (0.8%)	11 (0.2%)
Construction	281 (5.0%)	44 (0.8%)	249 (4.6%)	21 (0.4%)
Wholesale Trade	94 (1.7%)	49 (0.9%)	107 (2.0%)	43 (0.8%)
Retail Trade	167 (3.0%)	339 (6.0%)	156 (2.9%)	277 (5.1%)
Accommodation and Food Services	135 (2.4%)	217 (3.8%)	121 (2.2%)	254 (4.7%)
Transport, Postal and Warehousing	198 (3.5%)	68 (1.2%)	135 (2.5%)	47 (0.9%)
Information Media and Telecommunications	14 (0.2%)	23 (0.4%)	11 (0.2%)	18 (0.3%)
Financial and Insurance Services	20 (0.4%)	39 (0.7%)	11 (0.2%)	53 (1.0%)
Rental, Hiring and Real Estate Services	25 (0.4%)	23 (0.4%)	29 (0.5%)	35 (0.7%)
Professional, Scientific and Technical Services	113 (2.0%)	146 (2.6%)	76 (1.4%)	109 (2.0%)
Administrative and Support Services	57 (1.0%)	122 (2.2%)	56 (1.0%)	87 (1.6%)
Public Administration and Safety	167 (3.0%)	118 (2.1%)	142 (2.6%)	104 (1.9%)
Education and Training	83 (1.5%)	311 (5.5%)	65 (1.2%)	357 (6.6%)
Health Care and Social Assistance	66 (1.2%)	507 (9.0%)	65 (1.2%)	484 (9.0%)
Arts and Recreation Services	28 (0.5%)	5 (0.1%)	12 (0.2%)	10 (0.2%)
Other Services	157 (2.8%)	101 (1.8%)	145 (2.7%)	101 (1.9%)
Inadequately described/Not stated	179 (3.2%)	88 (1.6%)	134 (2.5%)	73 (1.4%)
Total employed persons aged 15+	3,083 (54.5%)	2,574 (45.5%)	2,948 (54.8%)	2,432 (45.2%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Table 4-41 shows data for industry of employment at a more detailed level for the Narrabri LGA and Gunnedah LGA. The data suggests that grain and cotton growing are the main agricultural activities in the Narrabri LGA in terms of employment, while cattle grazing is also a key employer in the agricultural sector in the Gunnedah LGA. Coal mining is the main form of mining in both regions in terms of employment.

Between 2006 and 2016, there has been a structural shift in the industries of employment in Narrabri LGA and Gunnedah LGA.

In the Narrabri LGA, the overall size of the workforce declined slightly during this period (by 99 workers). However, the number of residents employed in the agriculture, forestry and fishing industry declined by 340 workers. The number of residents employed in mining replaced most of this loss, increasing by 282 workers. The increase in mining employment was lower than the decline in agricultural employment between 2006 and 2016 by around 60 workers.

In the Gunnedah LGA, the number of residents employed in the agriculture, forestry and fishing industry also declined (by 115 workers). However, the overall size of the workforce increased during this period by 701 workers, with the number of residents employed in mining increasing substantially (by 622 workers). The increase in mining employment therefore more than offset the decline in agricultural employment between 2006 and 2016 by around 500 workers.

Table 4-41. Industry of employment of residents (specific), Study areas (LGAs), 2006, 2011 and 2016

Industry	2006	2011	2016
Narrabri LGA			
<i>Agriculture, Forestry and Fishing</i>	1,450 (25.2%)	1,249 (21.4%)	1,110 (19.6%)
- Beef Cattle Farming (Specialised)	241 (4.2%)	184 (3.2%)	154 (2.7%)
- Grain-Sheep or Grain-Beef Cattle Farming	171 (3.0%)	141 (2.4%)	95 (1.7%)
- Other Grain Growing (other than rice)	274 (4.8%)	258 (4.4%)	230 (4.1%)
- Cotton Growing	321 (5.6%)	264 (4.5%)	175 (3.1%)
- Agriculture, not further defined (nfd)	65 (1.1%)	62 (1.1%)	164 (2.9%)
<i>Mining</i>	28 (0.5%)	227 (3.9%)	310 (5.5%)
- Coal Mining	9 (0.2%)	179 (3.1%)	268 (4.7%)
Total	5,756 (100%)	5,836 (100%)	5,657 (100%)
Gunnedah LGA			
<i>Agriculture, Forestry and Fishing</i>	852 (18.2%)	883 (16.9%)	737 (13.7%)
- Beef Cattle Farming (Specialised)	191 (4.1%)	214 (4.1%)	188 (3.5%)
- Grain-Sheep or Grain-Beef Cattle Farming	208 (4.4%)	158 (3.0%)	108 (2.0%)
- Other Grain Growing (other than rice)	173 (3.7%)	179 (3.4%)	128 (2.4%)
- Cotton Growing	69 (1.5%)	65 (1.2%)	28 (0.5%)
- Agriculture, not further defined (nfd)	25 (0.5%)	60 (1.1%)	115 (2.1%)
<i>Mining</i>	117 (2.5%)	391 (7.5%)	739 (13.7%)
- Coal Mining	76 (1.6%)	327 (6.3%)	661 (12.3%)
Total	4,680 (100%)	5,225 (100%)	5,381 (100%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017a) [Time Series Profile];

This data also potentially suggests that the Gunnedah LGA workforce has experienced a greater gain in employment in the mining sector compared to the Narrabri LGA workforce. Many of the currently operational mining projects in the area are located a similar distance away from both Narrabri and Gunnedah townships, and mine workers could therefore live in either location. However, according to this data, more than 70% of residents of the Narrabri LGA and Gunnedah LGA that are employed in the mining sector, are residents of the Gunnedah LGA.

Employment in the coal mining industry specifically is male-dominated, with around 90% of employed residents working in the coal mining industry being males in 2016 in the Narrabri LGA. Similarly, in the Gunnedah LGA, around 86% of employed residents working in the coal mining industry being males in 2016 (Table 4-42).

Table 4-42. Industry of employment of residents (specific), Males and Females, Study areas (LGAs), 2016

Industry	Narrabri LGA		Gunnedah LGA	
	Males	Females	Males	Females
<i>Agriculture, Forestry and Fishing</i>	832 (14.7%)	275 (4.9%)	543 (10.1%)	195 (3.6%)
- Beef Cattle Farming (Specialised)	116 (2.1%)	42 (0.7%)	136 (2.5%)	54 (1.0%)
- Grain-Sheep or Grain-Beef Cattle Farming	65 (1.1%)	32 (0.6%)	77 (1.4%)	29 (0.5%)
- Other Grain Growing (other than rice)	176 (3.1%)	56 (1.0%)	96 (1.8%)	35 (0.7%)
- Cotton Growing	141 (2.5%)	38 (0.7%)	19 (0.4%)	3 (0.1%)
- Agriculture, not further defined (nfd)	127 (2.2%)	40 (0.7%)	89 (1.7%)	27 (0.5%)
<i>Mining</i>	276 (4.9%)	36 (0.6%)	641 (11.9%)	101 (1.9%)
- Coal Mining	236 (4.2%)	27 (0.5%)	569 (10.6%)	93 (1.7%)
Total	3,083 (54.5%)	2,574 (45.5%)	2,948 (54.8%)	2,432 (45.2%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Non-local worker occupations

Non-local workers are workers that have a primary place of work in either the Narrabri LGA or Gunnedah LGA but live outside of both the Narrabri LGA and Gunnedah LGA.

Of the 611 non-local workers in the Narrabri LGA in 2016, large proportions were males working as machinery operators and drivers (37.5%) and technicians and trades workers (21.8%).

Of the 540 non-local workers in the Gunnedah LGA in 2016, similarly large proportions were males working as machinery operators and drivers (21.7%) and technicians and trades workers (14.3%), but there were also higher proportions of male managers (11.3%). There were higher proportions of female non-local workers in Gunnedah LGA, compared to Narrabri LGA, and they worked across a range of occupations, including as professionals (8.3%), community and personal service workers (5.7%) and clerical and administrative workers (5.6%).

Table 4-43. Occupation of non-local workers, Males and Females, Study areas (LGAs), 2016

Occupation	Narrabri LGA		Gunnedah LGA	
	Males	Females	Males	Females
Managers	55 (9.0%)	10 (1.6%)	61 (11.3%)	23 (4.3%)
Professionals	33 (5.4%)	32 (5.2%)	34 (6.3%)	45 (8.3%)
Technicians and Trades Workers	133 (21.8%)	4 (0.7%)	77 (14.3%)	12 (2.2%)
Community and Personal Service Workers	15 (2.5%)	10 (1.6%)	11 (2.0%)	31 (5.7%)
Clerical and Administrative Workers	10 (1.6%)	13 (2.1%)	9 (1.7%)	30 (5.6%)
Sales Workers	3 (0.5%)	3 (0.5%)	8 (1.5%)	16 (3.0%)
Machinery Operators and Drivers	229 (37.5%)	14 (2.3%)	117 (21.7%)	3 (0.6%)
Labourers	28 (4.6%)	10 (1.6%)	46 (8.5%)	13 (2.4%)
Inadequately described/Not stated	10 (1.6%)	4 (0.7%)	0 (0.0%)	4 (0.7%)
Total employed persons aged 15+	508 (83.1%)	103 (16.9%)	372 (68.9%)	168 (31.1%)

Notes: Based on place of work. Non-local workers work within Narrabri LGA or Gunnedah LGA but live outside these areas. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Of the 611 non-local workers in the Narrabri LGA in 2016, the majority were males working in the mining industry (54.7%). The remaining non-local workers work across a broad range of industry categories, with the next most common industry being agriculture, forestry and fishing, which employs 40 males and nine females from outside the Narrabri LGA and Gunnedah LGA. This data would not show any change in the gender diversity of employment over the last four years (2016-2020), however it remains the most appropriate source of data for this analysis.

The industries of employment of the 540 non-local workers in the Gunnedah LGA in 2016 are more balanced, with transport, postal and warehousing, mining, and agriculture, forestry and fishing industries all employing around 11-13% of non-local workers (mainly males) and education and training, and health care and social assistance employing around 7-9% of non-local workers (mainly females).

This data supports the anecdotal evidence that many of the non-local workers in Narrabri LGA are males employed in the mining industry. There is an opportunity to entice these non-local workers to move to the region permanently with their families. This would help to reduce the impact of population decline in Narrabri LGA since 2001 (Section 4.1.2) and ensure a good mix of household types in Narrabri LGA. However, this could also contribute to housing demand and impact housing affordability for lower income households.

Table 4-44. Industry of employment of non-local workers, Males and Females, Study areas (LGAs), 2016

Industry	Narrabri LGA		Gunnedah LGA	
	Males	Females	Males	Females
Agriculture, Forestry and Fishing	40 (6.5%)	9 (1.5%)	54 (10.0%)	20 (3.7%)
Mining	334 (54.7%)	17 (2.8%)	57 (10.6%)	3 (0.6%)
Manufacturing	4 (0.7%)	0 (0.0%)	16 (3.0%)	0 (0.0%)
Electricity, Gas, Water and Waste Services	4 (0.7%)	0 (0.0%)	11 (2.0%)	0 (0.0%)
Construction	26 (4.3%)	0 (0.0%)	48 (8.9%)	0 (0.0%)
Wholesale Trade	7 (1.1%)	0 (0.0%)	12 (2.2%)	0 (0.0%)
Retail Trade	0 (0.0%)	3 (0.5%)	18 (3.3%)	21 (3.9%)
Accommodation and Food Services	16 (2.6%)	12 (2.0%)	11 (2.0%)	12 (2.2%)
Transport, Postal and Warehousing	19 (3.1%)	0 (0.0%)	60 (11.1%)	3 (0.6%)
Information Media and Telecommunications	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Financial and Insurance Services	0 (0.0%)	5 (0.8%)	0 (0.0%)	4 (0.7%)
Rental, Hiring and Real Estate Services	9 (1.5%)	0 (0.0%)	4 (0.7%)	0 (0.0%)
Professional, Scientific and Technical Services	9 (1.5%)	6 (1.0%)	9 (1.7%)	8 (1.5%)
Administrative and Support Services	4 (0.7%)	0 (0.0%)	7 (1.3%)	6 (1.1%)
Public Administration and Safety	11 (1.8%)	7 (1.1%)	22 (4.1%)	9 (1.7%)
Education and Training	4 (0.7%)	12 (2.0%)	9 (1.7%)	41 (7.6%)
Health Care and Social Assistance	5 (0.8%)	24 (3.9%)	8 (1.5%)	31 (5.7%)
Arts and Recreation Services	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Other Services	6 (1.0%)	5 (0.8%)	11 (2.0%)	6 (1.1%)
Inadequately described/Not stated	7 (1.1%)	6 (1.0%)	9 (1.7%)	0 (0.0%)
Total employed persons aged 15+	508 (83.1%)	103 (16.9%)	372 (68.9%)	168 (31.1%)

Notes: Based on place of work. Non-local workers work within Narrabri LGA or Gunnedah LGA but live outside these areas. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.2.4.4 Tourism

Tourism sector

The tourism sector can be considered as an amalgam of activities across various industry sectors, including retail, accommodation, cafes and restaurants, and cultural and recreational facilities (Remplan, 2019). The tourism sector services the activities of persons travelling to and staying in places that are outside their usual place of residence for a period of no more than a consecutive year and for leisure, business and other purposes. The tourism estimates presented in this section for the Narrabri and Gunnedah LGA were derived using ABS 2016-2017 data and compiled by Remplan (2019).

Tourism statistics for Narrabri and Gunnedah LGA are shown in the table below (Table 4-45). The indicators include:

- "Employment" represents the number of people employed by businesses / organisations in each of the industry sectors in the defined regions. In this report the employment data is place of work data and represents total numbers of employees without any conversions to full-time equivalence.
- "Economic output" represents the gross revenue generated by businesses/organisations in each of the industry sectors in a defined region. Gross revenue is also referred to as total sales or total income.
- "Wages and salaries" refers to the value of entitlements earned by employees from their employers for services rendered, includes wages and salaries received by employees in cash and in kind (for example, provision of food, accommodation or motor vehicles), and employers' social contributions such as superannuation contributions and workers' compensation premiums.
- "Value-added" represents the marginal economic value that is added by each industry sector in a defined region. Value-added can be calculated by subtracting local expenditure and expenditure on regional imports from the output generated by an industry sector, or alternatively, by adding the wages and salaries paid to local employees, the gross operating surplus and taxes on products and production. Value-added by industry sector is the major element in the calculation of GRP.

These indicators show that 339 people were employed in the tourism industry in Narrabri LGA in 2016-17, representing 5.2% of total workers. While for Gunnedah LGA, 293 people were employed in the tourism industry, representing 5.8% of total workers.

Tourism contributed \$65.4 M to the Narrabri LGA economy in 2016-17, representing 2.3% of the economy. Tourism contributed \$59.4 M to the Gunnedah LGA economy, representing 3.3% of the economy.

Wages and salaries for workers in the tourism industry for Narrabri LGA was almost \$17.0 M in 2016-17, making up 3.0% of total wages. For Gunnedah LGA, the value for wages and salaries was \$15.5 M, making up 4.0% of total wages.

For Narrabri LGA, the value-added by the tourism industry was \$30.3 M, or 2.3% of the total value-added. For Gunnedah LGA, the value-added was \$26.7 M, or 3.3% of the total value-added.

Table 4-45. Tourism statistics, Narrabri and Gunnedah LGAs, 2016-17

Area	Employment	Economic Output	Wages and Salaries	Value-added
Narrabri LGA	339 (5.2%)	\$65.449 M (2.3%)	\$16.952 M (3.0%)	\$30.270 M (2.3%)
Gunnedah LGA	293 (5.8%)	\$59.421 M (3.3%)	\$15.517 M (4.0%)	\$26.730 M (3.3%)

Source: (Remplan, 2019);

Tourism visitation

Between 2014-17, there was an average of 261,000 visitors to Narrabri LGA each year (Table 4-46). These visitors included 2,000 international visitors, 126,000 domestic overnight visitors and 132,000 domestic day visitors. Although there were fewer international visitors than domestic overnight visitors, international visitors stayed for significantly longer periods (16 nights on average). Domestic overnight visitors are the main source of tourism spending at \$36 M out of a total \$50 M in the Narrabri LGA. Data on the number and expenditure of international visitors was not available for Gunnedah LGA, so there is incomplete data available. There was a total of 86,000 domestic overnight visitors and a total of 99,000 domestic day visitors to Gunnedah LGA on average each year between 2014-17.

Table 4-46. Tourism statistics, Narrabri and Gunnedah LGA, Averages 2014-2017

Measure	International	Domestic Overnight	Domestic Day	Total
Narrabri LGA				
Visitors	2,000	126,000	132,000	261,000
Nights	35,000	370,000	-	404,000
Average stay	16 nights	3 nights	-	3 nights
Total Spend	\$2 M	\$36 M	\$12 M	\$50 M
Average spend per trip	\$966	\$287	\$88	\$191
Average spend per night	\$59	\$98	-	\$95
Average spend (commercial accommodation) per night	NP	\$110	-	NP
Gunnedah LGA				
Visitors	NP	86,000	99,000	NP
Nights	NP	228,000	-	NP
Average stay	NP	3 nights	-	NP
Total Spend	NP	\$25 M	\$12 M	NP
Average spend per trip	NP	\$291	\$123	NP
Average spend per night	NP	\$109	-	NP
Average spend (commercial accommodation) per night	NP	\$180	-	NP

Note: The data is based on a four-year average from 2014 to 2017. 'NP' refers to unreliable data that is not published.

Source: (Australian Government [Tourism Research Australia], 2018);

For domestic overnight visitors to Narrabri LGA, 44,000 were travelling for business, 31,000 to visit friends and relatives and 30,000 were on holiday (Table 4-47). The largest proportion of visitors were travelling on their own (45,000 visitors). A large proportion of the nights spent in the Narrabri LGA by domestic overnight visitors were spent in "other accommodation" types (a total of 121,000 nights). "Other accommodation" includes guest houses and bed and breakfast accommodation, rented properties, own property, and any other commercial or private accommodation. It can therefore include private accommodation rented through online services, such as AirBNB, as well as a range of other arrangements. "Other accommodation" was followed by the home of a friend or relative (99,000 nights), commercial camping / caravan park (89,000 nights) and a hotel or similar (55,000 nights). For Gunnedah LGA, 26,000 domestic overnight visitors were on holiday and 23,000 visitors were visiting friends or relatives. The largest proportion of visitors were travelling on their own (37,000 visitors). A large proportion of nights spent in the Gunnedah LGA were spent at the home of a friend or relative (a total of 92,000 nights), compared to a hotel or similar (46,000 nights).

Table 4-47. Reason for visit, party type and accommodation type, Narrabri and Gunnedah LGAs, Averages 2014-2017

Visitors	International	Domestic Overnight	Domestic Day	Total
Narrabri LGA				
<i>Reason for visit (Visitors)</i>				
Holiday	NP	30,000	NP	NP
Visiting friends or relatives	NP	31,000	NP	NP
Business	NP	44,000	NP	NP
<i>Travel party type (Visitors)</i>				
Unaccompanied	NP	45,000	-	NP
Couple	NP	30,000	-	NP
Family group	NP	NP	-	NP
Friends/relatives travelling together	NP	NP	-	NP
<i>Accommodation (Nights)</i>				
Hotel or similar	NP	55,000	-	NP
Home of friend or relative	NP	99,000	-	NP
Commercial camping/caravan park	NP	89,000	-	NP
Backpacker	NP	NP	-	NP
Other accommodation	NP	121,000	-	NP
Gunnedah LGA				
<i>Reason (Visitors)</i>				
Holiday	NP	26,000	NP	NP
Visiting friends or relatives	NP	23,000	NP	NP
Business	NP	NP	NP	NP
<i>Travel party type (Visitors)</i>				
Unaccompanied	NP	37,000	-	NP
Couple	NP	21,000	-	NP
Family group	NP	NP	-	NP
Friends/relatives travelling together	NP	NP	-	NP
<i>Accommodation (Nights)</i>				
Hotel or similar	NP	46,000	-	NP
Home of friend or relative	NP	92,000	-	NP
Commercial camping/caravan park	NP	NP	-	NP
Backpacker	NP	NP	-	NP
Other accommodation	NP	NP	-	NP

Note: 'NP' refers to unreliable data that is not published.

Source: (Australian Government [Tourism Research Australia], 2018);

Tourism strategies and planning

Two tourism strategies were reviewed to consider their relevance to the Project and the way that the region is promoted to the tourism market. The two strategies reviewed were the:

- Narrabri Shire Destination Management Plan/Tourism Plan 2014-2019; and
- Gunnedah Shire Destination Management Plan 2015.

Both strategies were completed more than five years ago, and some of the findings and strategies may therefore be out of date. The key relevant findings of these studies related to the SIA include:

- Narrabri LGA:
 - Narrabri LGA is described as having a “patchwork of colour” across a vast “fertile landscape” with national parks and forests and sophisticated country life.
 - The characteristics of the region emphasised to the tourism market in 2014 included: agricultural landscapes, landforms, national parks, forests, the “healing” waters of the Great Artesian Basin, lakes and rivers, the ancient culture of the Kamilaroi people, and country hospitality.
 - The plan noted resource developments as a positive for tourism including contributing to increased investment and work-related visitation.
- Gunnedah LGA:
 - Gunnedah LGA is described as having “stunning, productive landscapes”, “natural wonders”, dreamtime connections, “panoramic sights”, and “country flavours”.
 - The natural assets of the region are noted in the report as tourism opportunities for the Shire, with landscapes and nature-based activities important to potential target markets. Natural assets such as koala viewing, the Namoi River corridor, Lake Keepit, Boonalla Aboriginal Area and Bindea Track are mentioned.
 - The rich Aboriginal culture is also mentioned as a potential opportunity to increase tourist visitation in 2015.
 - Amongst a range of challenges identified, the plan notes fluctuations and uncertainty in the mining sector as being a challenge for tourism in the Gunnedah LGA in 2015 mainly due to large temporary increases in accommodation requirements during construction and peak periods.
 - In addition, it notes that a decline in the koala population as a result of extreme weather events has meant that it is increasingly difficult for Gunnedah to deliver on its promise to visitors that koalas can be easily seen in their natural habitat.
 - At the same time, mining activities are noted as opportunities, including with regard to specialist industrial tours.

Although both strategies noted that the natural and agricultural character of the local area is part of their tourism marketing, both strategies also identify mining activity as an opportunity for the tourism sector, both in terms of utilising tourist accommodation for work-related trips as well as for mining-related tours and events.

Tourism events and infrastructure

Seven major tourist events were identified in the Narrabri LGA and Gunnedah LGA.

The Boggabri Drovers Campfire was the only event that occurred close to the Narrabri Mine. The event is held annually on the last weekend of April at the Boggabri Showgrounds and attracts caravanners, motorhome owners and travellers; providing a range of displays and activities.

The remaining identified events occurred in Narrabri and Gunnedah townships, including AgQuip, Nosh Narrabri, Narrabri Show, the Weeks of Speed Festival, Gunnedah Australia Day activities and Gunnedah Show. AgQuip is the largest of these events occurring in the broader area. It is a major primary industry field day, attracting some 100,000 visitors over three-days annually in August.

A total of 24 tourist-attracting facilities were identified in the audit, including a range of cultural, historic and nature-based attractions. Most of the tourist attracting facilities were located in Narrabri and Gunnedah townships (ten and eight, respectively). Three tourist attracting facilities were identified in Boggabri, all of which were nature-based attractions. Other facilities were located in Berrigal, Keepit and Pilliga.

These tourist events and attractions bring visitors to the region and contribute to the local economies of Narrabri LGA and Gunnedah LGA, including through the hiring of tourist accommodation. There are unlikely to be any impacts of the Project on tourism events and infrastructure. Accommodation providers however, could be impacted if mine workers and contractors were to use this form of accommodation, reducing the supply available for tourists at particular times of the year.

A total of 40 tourist accommodation facilities were identified in the audit, including a range of hotel/motels, caravan parks, apartments and bed and breakfast style accommodation. Most of the facilities were located in Narrabri and Gunnedah townships (16 and 23 tourist accommodation, respectively). There were three tourist accommodation facilities identified in Boggabri and one in Wee Waa.

The full audit of tourism events, infrastructure and accommodation is provided in Appendix D.

4.2.4.5 Narrabri Mine employment and contractors

Data provided by NCOPL has been used to summarise employment at the existing Narrabri Mine. Data was available for employees as well as on-site contractors. Many on-site contractors may only work for small periods of time and therefore an FTE basis has been used to measure this workforce, while for employees, the data would include all employees without considering their hours of work. For this reason, data for employees and contractors is considered separately below.

There were an estimated 20 female employees and contractors at NCOPL in 2020, representing 3.8% of the total workforce.

Employees

The Narrabri Mine employed 337 people in 2020.

More detailed data on the location of residence of employees was available for data collected in November 2019 when the total number of employees was 270 (Table 4-48). At this time, of the 270 employees, 99 employees (36.7%) lived in Narrabri LGA, while 106 employees (39.3%) lived in Gunnedah LGA. Within the LGAs, the majority of employees lived in the major town centres of Narrabri township and Gunnedah township, with only a few residing in smaller centres. A further 56 employees lived in areas outside of the Narrabri LGA and Gunnedah LGA, but within NSW (20.7%). Approximately nine employees lived in Queensland (3.3%).

Table 4-48: NCOPL employees by location of residence, November 2019

Location	Employees
Narrabri LGA	99 (36.7%)
Narrabri	86 (31.9%)
Boggabri	6 (2.2%)
Baan Baa	3 (1.1%)
Wee Waa	3 (1.1%)
Turrawan	1 (0.4%)
Gunnedah LGA	106 (39.3%)
Gunnedah	98 (36.3%)
Carroll	2 (0.7%)
Emerald Hill	1 (0.4%)
Milroy	1 (0.4%)
Curlewis	3 (1.1%)
Mullaley	1 (0.4%)
Tamworth LGA	11 (4.1%)
Gwydir LGA	1 (0.4%)
NSW Other	44 (16.3%)
QLD	9 (3.3%)
Total	270 (100.0%)

Source: Provided by NCOPL 2019;

Contractors

Data for on-site contractors was collected by NCOPL using an induction register over a twelve month period to November 2019 (see Table 4-49). Many on-site contractors may be working on-site for only a small period of time and therefore an FTE basis was used to measure this workforce.

Of the 254 FTE on-site contractors over the twelve-month period to November 2019, 60 FTE workers (23.6%) lived in Narrabri LGA, while 45 full-time equivalent workers (17.9%) lived in Gunnedah LGA. Within the LGAs, the majority of contractors came from the major town centres of Narrabri township and Gunnedah township.

A further 112 FTE contractors lived in areas outside of the Narrabri LGA and Gunnedah LGA, but within NSW (44.3%). Approximately 25 FTE contractors lived in Queensland (9.7%).

These statistics suggest that a higher proportion of contractors (based on FTE) were employed from outside the social area of influence (Narrabri LGA and Gunnedah LGA) (58.7%), compared to employees (24.1%). Contract work is more likely to be temporary and therefore it is understandable that contractors are less likely to move to the local area to work. This data may also suggest that local skills are not always available in the local area, so work is contracted out to companies located outside the local area.

Table 4-49: NCOPL on-site contractors by location of residence, Full-time equivalents and total hours, Twelve months to November 2019

Location	FTE and (Percentage of total)	Total hours	Hours per day
Narrabri LGA	60 (23.6%)	186,290	510
Narrabri	46 (18.3%)	144,194	395
Boggabri	3 (1.3%)	10,398	28
Baan Baa	1 (0.3%)	2,334	6
Wee Waa	7 (2.8%)	22,190	61
Turrawan	0 (0.1%)	408	1
Maules Creek	0 (0.0%)	121	0
Bellata	1 (0.2%)	1,837	5
Bohena Creek	1 (0.3%)	2,618	7
Harparary	0 (0.0%)	0	0
Bullawa Creek	1 (0.3%)	2,190	6
Gunnedah LGA	45 (17.9%)	141,037	386
Gunnedah	42 (16.4%)	129,194	354
Carroll	0 (0.0%)	32	0
Emerald Hill	0 (0.0%)	69	0
Curlewis	3 (1.2%)	9,282	25
Willala	0 (0.1%)	1,070	3
Ghoolendaadi	0 (0.2%)	1,390	4
Tamworth LGA	8 (3.3%)	26,149	72
NSW Other	104 (41.0%)	323,260	886
Queensland	25 (9.7%)	76,511	210
Victoria	1 (0.4%)	3,467	9
Northern Territory	0 (0.2%)	1,447	4
Tasmania	1 (0.2%)	1,571	4
Western Australia	0 (0.1%)	991	3
New Zealand	8 (3.1%)	24,666	68
Total	254 (100.0%)	788,912	2,152

Source: Provided by NCOPL 2019;

Change over time

The number of workers at Narrabri Mine has generally increased since operations began in 2012 (Table 4-50). Data provided by NCOPL suggested that the number of employees has increased from around 190 employees to around 337 employees between 2012/13 and 2020. The number of contractors has increased substantially over the past seven years and demonstrates that contractor numbers are highly variable based on planning, construction and operation activities.

Table 4-50: NCOPL count of employees and on-site contractors, 2012/13, 2013/14, 2014/15, November 2019, and 2020

Location	2012/13	2013/14	2014/15	2019	2020
Employees	190	254	276	270	337
Contractors	108	74	80	250	183
Total	298	328	356	520	520

Source: Provided by NCOPL 2020;

4.2.4.6 Financial resilience

Financial resilience can be measured by a survey question asking households if they would be able to raise \$2,000 within one week. Estimates of the age standardised rate of financial resilience for the Narrabri LGA and Gunnedah LGA population suggest that around 81% of local households were financially resilient in 2014 (Table 4-51). This proportion was slightly lower than for Regional NSW and NSW as a whole, suggesting that the Narrabri LGA and Gunnedah LGA populations may be slightly less financially resilient.

Table 4-51. Financial resilience measure estimates, Persons 18 years of age and older, 2014

Area	Persons		
	Number	ASR ¹ per 100	SR ²
Household could raise \$2,000 within one week			
Narrabri LGA	8,232	81.7	97
Gunnedah LGA	7,788	80.8	96
Regional NSW	1,686,761	82.1	98
NSW	4,770,921	83.1	99

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1).

1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

The estimates in this section have been derived using a synthetic estimation technique, which is described further in the box below. This modelling technique is used in a range of estimates provided in this social impact baseline chapter from the Public Health Information Development Unit (PHIDU) (Torrens University Australia 2019). These estimates have a range of limitations and are based on population modelling (explained in Box 4-1). To help overcome these limitations, where available, characteristics have been considered alongside findings from other sources, such as engagement activities.

4.2.5 Recreation activities

A collection of natural areas are located to the west of the Narrabri Mine site, including forestry land and conservation areas. Collectively, these areas are often referred to as the Pilliga Forest or The Pilliga, however there are different areas within this collective with different land uses, including some areas used for recreational and tourism activities.

There are two areas classified as state forest closest to the Narrabri Mine site: Jacks Creek State Forest and Bibblewindi State Forest. Jacks Creek State Forest covers an area of about 4,600 hectares and Bibblewindi State Forest covers an area of about 7,400 hectares.

Under the *Forestry Act 2012*, a permit is required for people who intend on using a state forest for recreational, sporting or commercial activities. For example, permits may be issued for a range of activities such as fossicking, hunting, filming, firewood collection, grazing and apiary sites (Australian Business Licence and Information Service, n.d.). These forestry areas therefore allow only limited public recreation access and would not be utilised for tourism activities.

Adjoining the state forest areas to the south west are conservation areas, including Pilliga East State Conservation Area (SCA), Pilliga Nature Reserve, Pilliga West SCA and Timmallallie National Park. These areas cover more than 500,000 hectares. Again, these areas are sometimes referred to as the Pilliga Forest or The Pilliga.

The Pilliga East SCA is the closest conservation area to Narrabri Mine, at approximately 14 km at its closest point. Under the *National Parks and Wildlife Act 1974* (NPW Act) (section 30G), the Pilliga East SCA is zoned as a Zone 3 Community Conservation Area (CCA). With regard to recreation and tourism uses, these areas are managed to:

“[Provide] for sustainable visitor or tourist use and enjoyment that is compatible with conservation of the state conservation area’s natural and cultural values and with uses permitted under other provisions of this Act in such areas”. (NPW Act, Section 30G)

A range of recreational and tourist activities are permitted within the Pilliga East SCA. The main purpose for tourist visits to the Pilliga East SCA would be centred on recreational driving, and to a lesser extent, nature-based recreation, such as bushwalking and birdwatching. Although tourism uses are allowed, there were no visitor facilities provided in the Pilliga East SCA and the area experienced low levels of visitation in 2014 (NSW Government Office Environment and Heritage, 2014). The Narrabri Mine is likely not visible from this location, and the low visitation suggests the impacts to tourism would be minor even if visible.

The Willala Aboriginal Area is located to the east of Pilliga East SCA and is also approximately 14 km from the Narrabri Mine at its closest point. The Willala Aboriginal Area is zoned as a Zone 2 CCA. With regard to recreation and tourism uses, these areas are managed to:

“[Provide] for sustainable visitor or tourist use and enjoyment that is compatible with the Aboriginal area’s natural and cultural values and the cultural values of the Aboriginal people”. (NPW Act, Section 30K)

No information was identified concerning the current use of this area by Aboriginal people or whether it is accessible to visitors.

Other possible recreation and tourism areas of the wider Pilliga Forest include:

- Sandstones Cave within the Pilliga Nature Reserve which is an important Aboriginal site for the Gomeroi people.
- Salt Caves campground and picnic area within the Timmallallie National Park (to the west of the Newell Highway).
- Gwabegar, a small village located between Pilliga West National Park and the Pilliga National Park. The village is an historically important town, and provides free camping and caravanning spaces at Anzac Park (Narrabri Shire Council , 2020).
- The Pilliga Discovery Centre, located in Baradine, provides information to visitors and books guided tours (Narrabri Shire Council , 2020).

Again, recreational and tourism use of these natural areas is unlikely to be impacted by the existing Narrabri Mine or the Project that would impact enjoyment of these areas given their distance away from the Project.

To the east of the Narrabri Mine, the Mount Kaputar National Park features a range of walking trails and scenic lookouts. Due to the topography of the area, tourists visiting Mount Kaputar National Park may be able to see the Narrabri Mine while visiting lookouts in the national park, however, at a distance of around 37 km, the visual impact is likely to be extremely low. The Project also includes limited additional surface infrastructure which is unlikely to be visible from such a distance.

The full audit of nature trails and camping locations has been provided in Appendix E.

4.2.6 Engagement findings

4.2.6.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, high proportions of local respondents to the community survey agreed or strongly agreed that the quality of life in the community is good (36.6%), the community has a good range of employment opportunities (36.6%), appropriate housing is affordable and available for most people (35.0%) and the local economy is strong (26.8%).

4.2.6.2 Council officer discussions

The NSC officers who participated in the engagement activities identified that local residents lack awareness about how to access training and employment opportunities at the Narrabri Mine. Some of the officers were themselves unaware that opportunities were available that allowed residents with no previous mining experience to obtain relevant training at the mine to then access employment opportunities.

The GSC officers who participated in the engagement activities highlighted the lack of affordable housing in the Gunnedah LGA and that rental housing available for low income households was limited. The officers believed that the small number of homeless in the LGA was connected to the limited dwellings available with low rents.

The GSC officers recognised the positive impacts the local mining industry has on employment. However, it was noted that there were still significant skills shortages, so attracting new workers to industries was a big concern. They suggested that local businesses were concerned that young people were being attracted to the mining industry due to the higher wages and local businesses were losing their trained staff.

4.2.6.3 Landholder discussions

Three nearby landholders recognised the positive impacts of the Narrabri Mine providing employment opportunities, including for many of the family members of the landholders interviewed.

They also recognised that the employment opportunities offered by the mine contributed to economic diversity more broadly, which was seen as important during drought periods where the agricultural industry has struggled. One of the landholders said:

“The mine is creating jobs at the moment, otherwise there wouldn’t be anything.”

One nearby landholder stated that it was difficult to access the highway from their properties during the shift change periods (twice a day).

4.2.6.4 Aboriginal groups discussions

Members of the Aboriginal groups that participated in engagement activities noted the high unemployment rates of Aboriginal people in the Narrabri LGA. They were also concerned that the types of jobs offered to members of the Aboriginal community at Narrabri Mine were low paying jobs or “lower status” jobs. They identified that additional career pathways were needed to encourage upskilling and higher incomes amongst their communities.

Aboriginal community members thought that there was a need for more training of young Aboriginal people (including job readiness training). Improved communication regarding available job vacancies would also increase interest in these positions.

Members of the Aboriginal groups noted that some Aboriginal employees at the mine experienced workplace discrimination or verbal abuse, which detracted from the work being done by NCOPL to encourage Aboriginal people to work at the mine. Two examples were provided. The first example was that Aboriginal people were considered by some staff to be employed based on quotas, and were therefore, considered to have a “token job”. The second example was due to a lack of cultural awareness. Due to the higher rates of illness and death for Aboriginal people and the cultural activities around death, Aboriginal staff have higher numbers of sick days and days off. This has resulted in other staff considering Aboriginal employees lazy or that they do not want to work.

Any form of harassment, bullying, discrimination or victimisation is not tolerated at NCOPL and all complaints will be taken seriously (as outlined in the Whitehaven Employee Code of Conduct). These types of experiences should therefore be dealt with appropriately by Whitehaven if brought to the attention of staff.

Members of the Aboriginal groups also highlighted concerns regarding the current affordability of housing and any potential for rising prices would affect low income households.

4.3 Health and Wellbeing

Although no significant additional construction or operational workforce is proposed as part of the Project likely to result in population growth, the extension may encourage some of the workforce that currently does not reside in the area of social influence to move into the area, and thus contribute to minimal additional demand on health infrastructure. The retention of the existing mining workforce for a longer period of time may also result in ongoing demands on health infrastructure. Therefore, it is important to understand population health outcomes currently and the range of health services and infrastructure available in the area to understand its vulnerability to possible small changes. The health information presented in this section will be utilised in the impact assessment (Section 5) as required to assess the relevant impacts of the Project on health and safety.

4.3.1 Health outcomes

4.3.1.1 General health outcomes

The rates of emergency department presentations in the Narrabri LGA and Gunnedah LGA were significantly higher than the rates for Regional NSW, NSW and Australia in 2012-13 (Table 4-52). Gunnedah LGA reported the highest total emergency department presentation rate at approximately 68,400 presentations per 100,000 population, which was higher than Narrabri LGA at approximately 53,700 presentations per 100,000 population.

The higher rates of emergency department presentations may be higher in regional centres as other options for healthcare are more limited at particular times of the day or week. The higher demand for emergency services needs to be considered in relation to the health infrastructure provided and the wait times to access services in the emergency department. This data is presented below.

Table 4-52. Total emergency department presentations, Persons, 2012-13

Area	Persons		
	Number	ASR ¹ per 100,000	SR ²
Narrabri LGA	7,383	53,706.2	186
Gunnedah LGA	8,861	68,414.4	237
Regional NSW	1,008,945	37,875.6	131
NSW	2,218,649	30,264.7	105

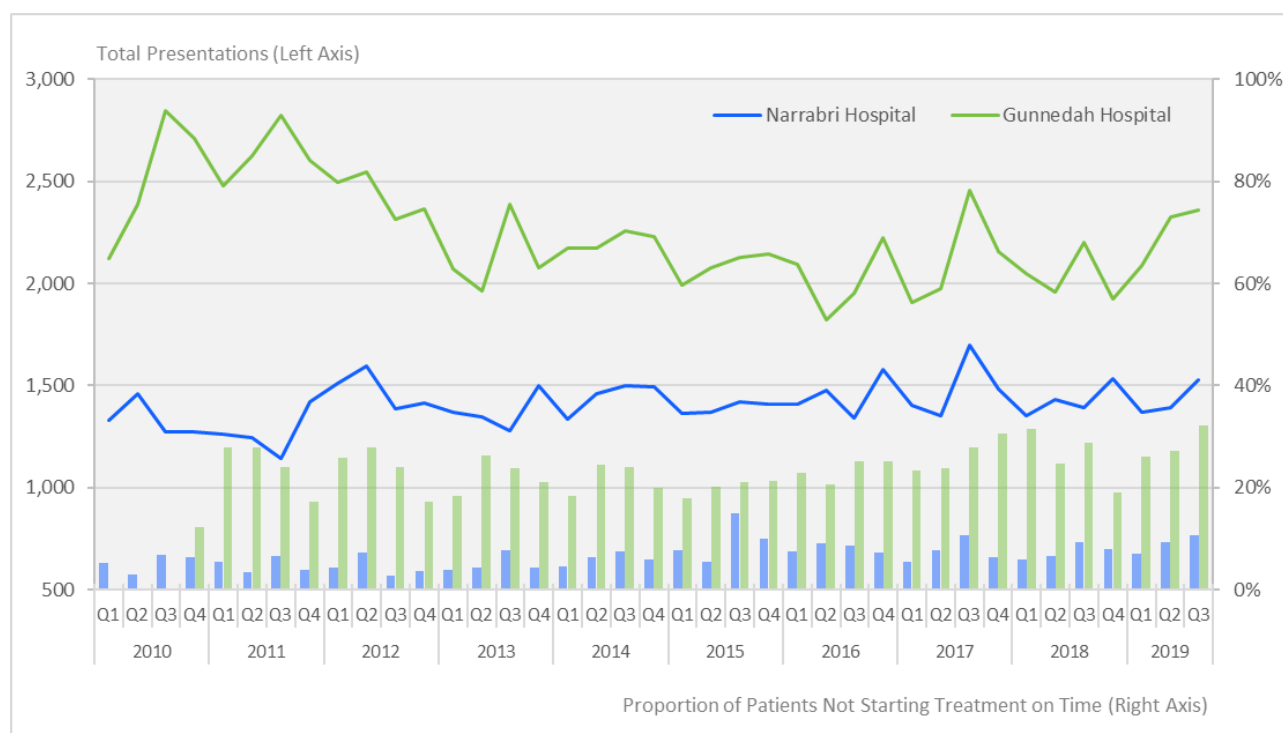
Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

Additional data for emergency department presentations is published by the NSW Government Bureau of Health Information (2020) (Figure 4-28). This shows trends over time as the data is available each quarter between 2010 and 2019. The number of emergency department presentations was higher at Gunnedah Hospital than at Narrabri Hospital between 2010 and 2019, however, the gap in the number of presentations has reduced from around 1,000 presentations in 2010-11 to around 500 presentation in more recent years. The number of presentations to Gunnedah Hospital has decreased slightly since around 2010-11, and the number of presentations to Narrabri Hospital has increased slightly between 2010 and 2019. Around 20% of patients presenting to the Gunnedah Hospital emergency department do not start treatment on time, whereas around 10% of patients to Narrabri Hospital do not start treatment on time. The longer wait times on average for Gunnedah Hospital may reflect the higher number of emergency department presentations.

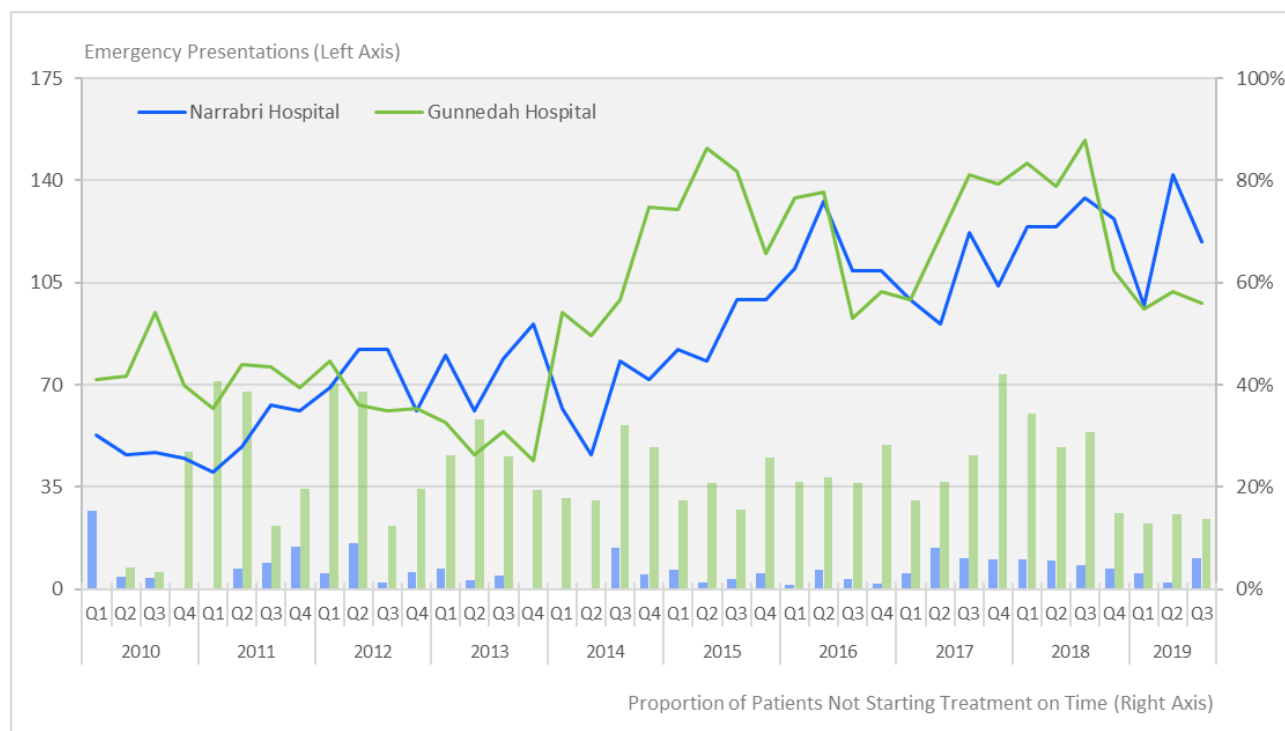
The number of emergency department presentations that were classified as emergencies has increased at both Narrabri Hospital and Gunnedah Hospital between 2010 and 2019 with the increase mainly occurring in 2014 and 2015 (Figure 4-29). Around 20-40% of patients presenting to the Gunnedah Hospital emergency department classified as emergencies do not start treatment on time, whereas around 0-5% of patients to Narrabri Hospital do not start treatment on time. The longer wait times on average for Gunnedah Hospital were evident before the increase in emergency presentations started in around 2014/15. The shorter wait times on average for Narrabri Hospital continued even after the increase in emergency presentations around 2014/15.

Figure 4-28. Total emergency department presentations, Narrabri and Gunnedah Hospitals, 2010-19



Source: (NSW Government [Bureau of Health Information], 2020);

Figure 4-29. Emergency department presentations classified as emergencies, Narrabri and Gunnedah Hospitals, 2010-19



Source: (NSW Government [Bureau of Health Information], 2020);

The rate of admissions to hospital for all persons was higher in the Narrabri LGA in 2016-17 than in Gunnedah LGA, Regional NSW and NSW, at 42,600 admissions per 100,000 population (Table 4-53). The rates of hospital admissions were higher in Narrabri LGA for both males and females. The rates of hospital admissions were lower in the Gunnedah LGA for all persons and males compared to Regional NSW and NSW, but the rate for females was similar to the comparison areas.

Table 4-53. Total admissions to hospital, Males, females and persons, 2016-17

Area	Males			Females			Persons		
	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²
Narrabri LGA	2,709	38,626.4	106	3,005	46,476.0	109	5,713	42,589.9	107
Gunnedah LGA	2,232	32,321.4	88	2,595	39,609.1	93	4,826	35,967.8	91
Regional NSW	544,492	35,681.6	98	595,705	40,484.0	95	1,140,209	38,146.6	96
NSW	1,331,790	34,198.0	94	1,567,303	39,660.1	93	2,899,150	36,951.2	93

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

The top three principal diagnoses for patients admitted to hospital for Narrabri LGA were digestive system diseases (703 admissions), injury, poisoning and other external causes (478 admissions) and respiratory system diseases (422 admissions) in 2016-17 (Table 4-54 and Figure 4-30). The rate of admission for endocrine, nutritional and metabolic diseases (approximately 1,350 admissions per 100,000 population) was well above the national average (79% higher than for Australia). These diseases may reflect lifestyle-related health issues such as unhealthy eating, lack of exercise, and higher alcohol consumption (see below) (World Health Organisation, 2020). The rate of admission for respiratory system diseases was also well above the national average (48% higher than for Australia), which may reflect higher rates of smoking (see next section) and/or potential air quality issues and asthma (Australian Institute of Health and Welfare, 2005). It could also relate to the higher Aboriginal and/or Torres Strait Islander population in the social area of influence, a group which experiences higher rates of these diseases (see Section 4.6.2) (Australian Bureau of Statistics, 2002) (Australian Institute of Health and Welfare, 2015).

For the Gunnedah LGA, digestive system and respiratory diseases were also the most common reason for admission to hospital (550 and 353 admissions, respectively), followed by injury, poisoning and other external causes (380 admissions) and musculoskeletal and connective tissue diseases (375 admissions). The rate of admission for respiratory system diseases was above the national average (approximately 2,500 admissions per 100,000 population, 22% higher than for Australia).

Table 4-54. Admissions to hospital by principal diagnosis, Males, females and persons, 2016-17

Area	Males			Females			Persons		
	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²
Narrabri LGA									
Infectious and parasitic diseases	#	..	..	#	..	..	#	..	..
All cancers	205	2,866.3	93	183	2,788.9	108	388	2,836.5	100
Endocrine, nutritional and metabolic diseases	69	978.6	153	113	1,753.4	199	182	1,357.9	179
Mental health related conditions	90	1,365.2	82	85	1,350.4	64	174	1,358.3	72
Nervous system diseases	66	926.8	68	95	1,433.5	105	161	1,173.6	86
Eye and adnexa diseases	147	2,103.9	137	142	2,185.5	118	290	2,145.6	127
Ear and mastoid process diseases	21	288.6	94	19	267.3	93	41	276.6	93
Circulatory system diseases	214	3,028.2	109	169	2,610.7	132	383	2,839.4	119
Respiratory system diseases	213	3,029.9	143	209	3,072.3	154	422	3,043.6	148
Digestive system diseases	348	4,993.4	114	355	5,460.8	125	703	5,228.3	119
Skin and subcutaneous tissue diseases	#	..	..	#	..	..	113	845.8	112
Musculoskeletal system and connective tissue diseases	206	2,912.6	98	162	2,473.4	72	369	2,701.1	85
Genitourinary system diseases	142	2,024.9	126	140	2,205.1	88	283	2,132.6	104
Pregnancy and childbirth (Females, 15-44 years)	NA	NA	NA	350	14,944.8	150	NA	NA	NA
Congenital malformations, deformations and chromosomal abnormalities	#	..	..	#	..	..	27	177.4	107
Injury, poisoning and other external causes	254	3,792.6	111	224	3,436.2	112	478	3,612.6	112

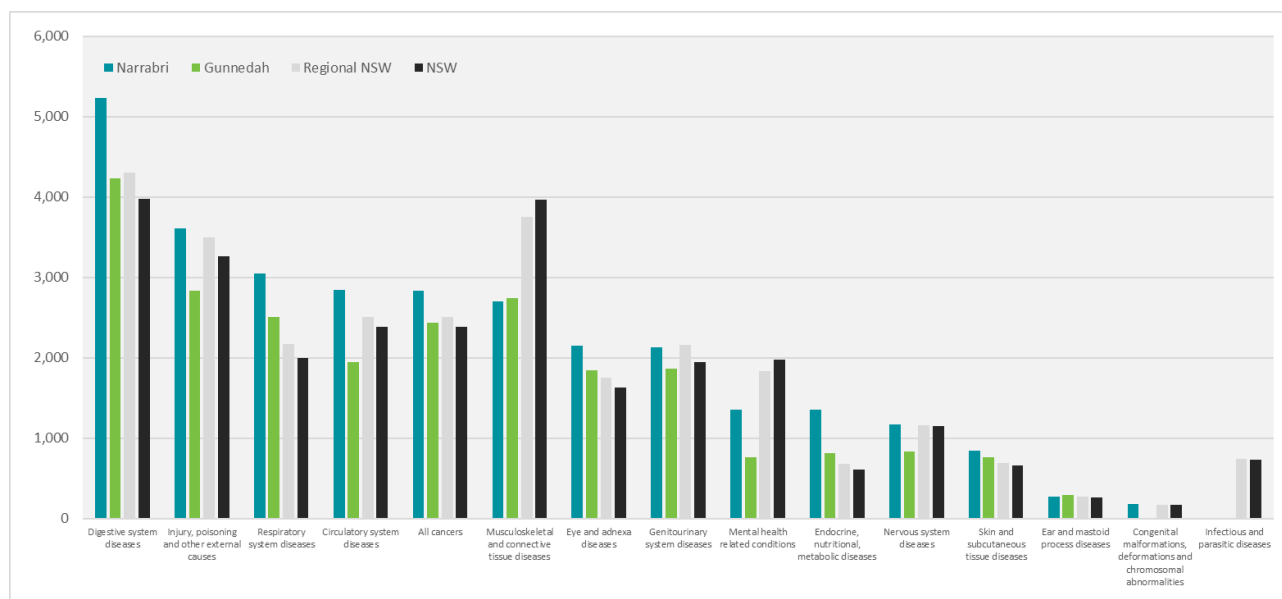
Area	Males			Females			Persons		
	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²
Gunnedah LGA									
Infectious and parasitic diseases	#	..	..	#	..	..	#	..	..
All cancers	177	2,449.9	80	165	2,422.8	94	343	2,433.6	86
Endocrine, nutritional and metabolic diseases	#	..	..	#	..	..	107	815.9	107
Mental health related conditions	42	687.1	41	51	831.5	40	93	758.5	40
Nervous system diseases	61	885.0	65	51	775.1	57	111	831.7	61
Eye and adnexa diseases	118	1,587.9	103	156	2,099.4	113	275	1,843.2	109
Ear and mastoid process diseases	24	342.5	111	17	252.7	88	41	297.5	100
Circulatory system diseases	161	2,207.1	79	123	1,674.6	84	284	1,948.0	82
Respiratory system diseases	186	2,613.1	123	167	2,401.7	120	353	2,505.9	122
Digestive system diseases	251	3,798.3	87	299	4,668.9	107	550	4,229.3	97
Skin and subcutaneous tissue diseases	63	963.6	119	37	556.3	80	100	760.2	101
Musculoskeletal system and connective tissue diseases	186	2,735.1	92	188	2,748.9	80	375	2,740.6	86
Genitourinary system diseases	111	1,606.6	100	130	2,102.8	84	242	1,862.1	90
Pregnancy and childbirth (Females, 15-44 years)	NA	NA	NA	308	13,986.3	140	NA	NA	NA
Congenital malformations, deformations and chromosomal abnormalities	#	..	..	#	..	..	#	..	..
Injury, poisoning and other external causes	205	3,126.8	92	175	2,539.5	83	380	2,831.1	88

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures.

2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

Figure 4-30. Admissions to hospital by principal diagnosis, Main diagnoses only, ASR per 100,000 population ¹, 2016-17

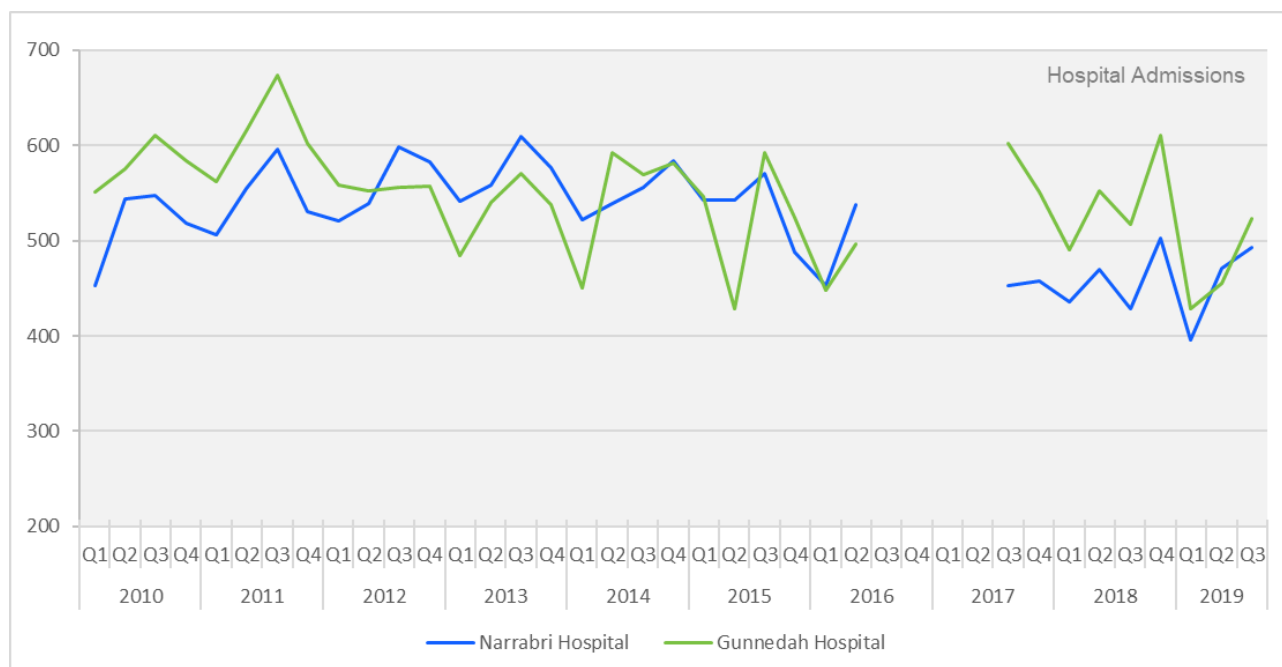


Notes: 1.ASR = Age standardised rate: Adjusts for different population age structures.

Source: (Torrens University Australia, 2019) [PHIDU];

Additional data for hospital admissions is published by the NSW Government Bureau of Health Information (2020). This information shows that the number of hospital admissions was similar for Narrabri and Gunnedah Hospitals between 2010 and 2019 at around 500 admissions per quarter (Figure 4-31).

Figure 4-31. Total hospital admissions, Narrabri and Gunnedah Hospitals, 2010-19



Note: Data for part of 2016 and 2017 was not available due to a policy change in the definition of patient stay types. Fair comparisons cannot be made during this period and therefore data has not been reported.

Source: (NSW Government [Bureau of Health Information], 2020);

4.3.1.2 Smoking and alcohol use

As noted in Section 4.3.1.1, both the Narrabri LGA and Gunnedah LGA have higher rates of hospitalisation due to respiratory system diseases than the national average, which could partially due to smoking rates. Estimates of rates of smoking in Narrabri LGA and Gunnedah LGA were well above the rates for Regional NSW, NSW and the national average in 2014-15 (Table 4-55). Gunnedah LGA was estimated to have the highest rate of smoking with 24.4% of the population smoking, which was 50% higher than the national average rate at that time. Males have higher rates of smoking than females in all of the study areas.

Table 4-55. Estimates of smoking, Males, females and persons, 2014-15

Area	Males			Female			Persons		
	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²
Narrabri LGA	1,419	28.7	152	847	18.3	137	2,260	23.8	148
Gunnedah LGA	1,313	29.1	154	853	19.0	143	2,165	24.4	152
Regional NSW	225,671	24.2	128	150,714	15.5	117	376,383	20.0	125
NSW	547,098	19.2	102	364,507	12.7	95	911,557	16.0	99

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1.ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

As noted in Section 4.3.1.1, the Narrabri LGA had a higher rate of admission for endocrine, nutritional and metabolic diseases than the national average. It was noted that this may be due to lifestyle health factors, including rates of alcohol intake, which is supported by estimated data for alcohol intake. It may also relate to the higher proportion of Aboriginal and/or Torres Strait Islander people in the social area of influence (see Section 4.6.2).

Estimated alcohol intake was high in both the Narrabri LGA and Gunnedah LGA compared to NSW and the Australian average, but similar to Regional NSW in 2014-15 (Table 4-56). Just over 20% of both the Narrabri LGA and Gunnedah LGA populations over 15 years of age have a high alcohol intake, meaning they consume two or more standard alcoholic drinks per day on average.

Table 4-56. Estimates of high alcohol intake, Persons, 2014-15

Area	Persons		
	Number	ASR ¹ per 100	SR ²
Narrabri LGA	2,231	21.6	129
Gunnedah LGA	1,963	20.1	120
Regional NSW	428,863	20.4	122
NSW	1,007,822	16.7	100

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1.ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

4.3.1.3 Mental health

Narrabri LGA had a slightly lower estimated rate of mental and behavioural problems compared to the other comparison areas in 2011-12 (12.9 people per 100 population) (Table 4-29). However, the estimated rate for Gunnedah LGA was above the NSW rate and similar to the national average. The estimated rates of mental and behavioural problems for males were slightly lower than the rates for females for the Narrabri LGA and Gunnedah LGA.

Table 4-57. Estimates of mental and behavioural problems, Males, females and persons, 2011-12

Area	Males			Females			Persons		
	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²
Narrabri LGA	827	12.1	100	865	13.7	91	1,692	12.9	95
Gunnedah LGA	765	12.4	103	874	14.5	96	1,639	13.5	99
Regional NSW	168,066	13.1	109	199,551	15.4	102	367,617	14.3	105
NSW	421,007	11.9	99	519,774	14.4	95	940,781	13.1	97

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.
Source: (Torrens University Australia, 2019) [PHIDU];

The estimated rates of psychological distress (high or very high psychological distress) were lower in the Narrabri LGA and Gunnedah LGA compared to Regional NSW, NSW and the national average in 2014-15 (Table 4-58).

Table 4-58. Estimates of high or very high psychological distress, Persons, 2014-15

Area	Persons		
	Number	ASR ¹ per 100,000	SR ²
Narrabri LGA	945	9.8	84
Gunnedah LGA	950	10.3	88
Regional NSW	232,930	11.8	101
NSW	630,720	11.0	94

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.
Source: (Torrens University Australia, 2019) [PHIDU];

Rates of admissions to hospital for mental health-related conditions and mood-affective disorders were lower in the Narrabri LGA and significantly lower in the Gunnedah LGA, compared to Regional NSW, NSW and the national average in 2016-17 (Table 4-59). In the Gunnedah LGA, rates of hospital admissions for these types of conditions were less than half the national average. These lower rates of admissions may reflect the small number of beds or facilities available in the region to admit patients with a mental health-related condition or a mood-affective disorder (see Section 4.3.2), rather than necessarily a lower rate of these types of conditions occurring.

Table 4-59. Admissions to hospital for mental health-related conditions, Males, females and persons, 2016-17

Area	Males			Females			Persons		
	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²	Number	ASR ¹ per 100	SR ²
Mental health-related conditions									
Narrabri LGA	90	1,365.2	82	85	1,350.4	64	174	1,358.3	72
Gunnedah LGA	42	687.1	41	51	831.5	40	93	758.5	40
Regional NSW	23,433	1,756.6	105	26,173	1,913.7	91	49,608	1,835.2	97
NSW	69,376	1,806.3	108	83,744	2,141.2	102	153,131	1,975.3	105
Mood-affective disorders									
Narrabri LGA	#	..	..	#	..	..	59	448.6	72
Gunnedah LGA	17	264.6	62	21	346.5	42	38	305.2	49
Regional NSW	6,014	438.2	102	11,080	795.3	97	17,095	618.4	99
NSW	16,452	428.2	100	30,283	773.9	95	46,737	602.7	96

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

Despite the low rate of hospital admissions for mental health-related conditions, there were 11 deaths due to suicide and self-inflicted injuries in 2011-15 in the Narrabri LGA, which represented a high average annual rate of suicide compared to Regional NSW, NSW and the national average (Table 4-60). Data for Gunnedah LGA was not available for this measure.

Table 4-60. Deaths due to suicide and self-inflicted injuries, Persons, 2011-15

Area	Persons		
	Number	ASR ¹ per 100,000	SDR ²
Narrabri LGA	11	17.8	155
Gunnedah LGA	#	..	..
Regional NSW	1,504	12.6	109
NSW	3,366	9.8	85

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SDR = Standardised Death Rate: Comparison of ASR to Australian rate which is assigned a value of 100. = Standardised Death Rate

Source: (Torrens University Australia, 2019) [PHIDU];

A Population Health Snapshot published by the Hunter New England and Central Coast Primary Health Network (2018) noted that there were 18 suicides in the Narrabri LGA between 2000 and 2013, while there were five suicides in the Gunnedah LGA. This would suggest a much higher rate of death due to suicide in the Narrabri LGA compared to Gunnedah LGA given their similar population size.

4.3.1.4 Injuries and traffic injuries/accidents

The rate of admission to hospital for injury, poisoning and other external causes was higher for the Narrabri LGA than for Regional NSW and NSW in 2016-17 (at approximately 3,610 admissions per 100,000 population) (Table 4-61). Gunnedah LGA, however, recorded a lower rate compared to Regional NSW and NSW (at approximately 2,830 admissions per 100,000 population). Males in the Narrabri LGA and Gunnedah LGA had higher rates of admission for injury, poisoning and other external causes, compared to females.

Table 4-61. Admissions to hospital for injury, poisoning and other external causes, Males, females and persons, 2016-17

Area	Males			Females			Persons		
	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²	Number	ASR ¹ per 100,000	SR ²
Injury, poisoning and other external causes									
Narrabri LGA	254	3,792.6	111	224	3,436.2	112	478	3,612.6	112
Gunnedah LGA	205	3,126.8	92	175	2,539.5	83	380	2,831.1	88
Regional NSW	54,429	3,845.6	113	48,558	3,162.7	103	102,988	3,494.3	108
NSW	132,719	3,433.8	101	123,075	3,092.9	101	255,799	3,262.3	101

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100.

Source: (Torrens University Australia, 2019) [PHIDU];

The average annual rates of death due to road traffic injuries/accidents in 2011-15 for Narrabri LGA and Gunnedah LGA were well above the rates for Regional NSW and NSW (Table 4-62). This rate is estimated based on the population of the Narrabri LGA and Gunnedah LGA throughout this period.

Table 4-62. Deaths due to road traffic injuries/accidents, Persons, 2011-15

Area	Persons		
	Number	ASR ¹ per 100,000	SDR ²
Premature deaths			
Narrabri LGA	6	9.6	199
Gunnedah LGA	5	9.2	191
Regional NSW	854	7.1	148
NSW	1,399	4.1	84
Avoidable deaths			
Narrabri LGA	10	16.1	273
Gunnedah LGA	5	9.2	155
Regional NSW	1,049	8.7	147
NSW	1,715	5.0	84

Notes: 1. ASR = Age standardised rate: Adjusts for different population age structures. 2. SDR = Standardised Death Rate: Comparison of ASR to Australian rate which is assigned a value of 100. = Standardised Death Rate

Source: (Torrens University Australia, 2019) [PHIDU];

4.3.1.5 Disability

For the ABS census, people with a profound or severe disability are defined as those needing help or assistance with one or more of the three core activity areas of self-care, mobility and communication, because of a disability, long-term health condition (lasting six months or more) or old age.

According to this measure, there were around 570 people in the Narrabri LGA who had a profound or severe disability, making up 4.4% of the population, and 665 people in the Gunnedah LGA, making up 5.4% of the population (Table 4-63). These were lower proportions than the proportions for Regional NSW and NSW, at 6.3% and 5.4%, respectively. The rates of disability were higher in Boggabri and Gunnedah townships at 6.7% and 6.4% respectively, and lower in Baan Baa and surrounds and Narrabri township at 3.7% and 5.2%, respectively.

There are limitations to relying on disability data for regional areas, as these locations may not have the facilities and services that are needed for support. Data may therefore reflect that local people move away from the area to access facilities and services, rather than reflecting lower levels of disability in the population.

Table 4-63. Disability, Study areas, 2016

Area	Disability
Baan Baa and surrounds	6 (3.7%)
Narrabri township	305 (5.2%)
Boggabri township	57 (6.7%)
Gunnedah township	513 (6.4%)
Narrabri LGA	572 (4.4%)
Gunnedah LGA	665 (5.4%)
Regional NSW	165,295 (6.3%)
NSW	402,049 (5.4%)

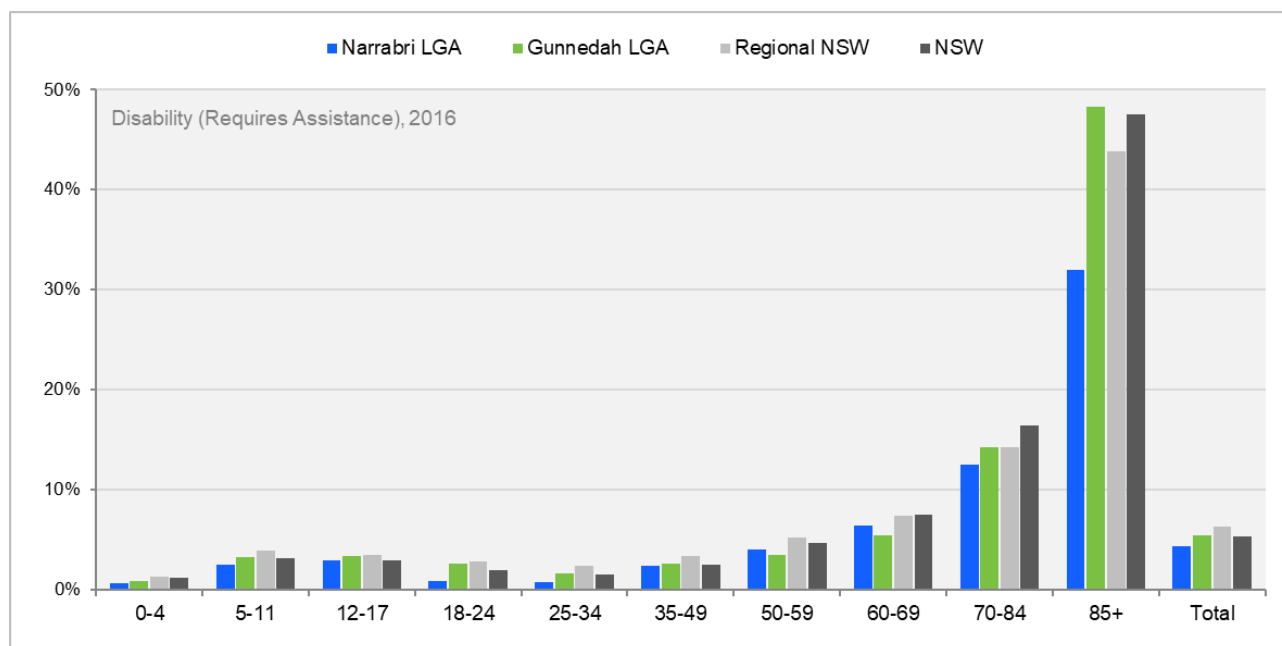
Notes: Based on place of usual residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Disability rates were lower in Narrabri LGA and Gunnedah LGA across a broad range of age groups compared to Regional NSW and NSW (Figure 4-32). Narrabri LGA had a lower proportion of residents over 85 years with a disability, compared to Gunnedah LGA, Regional NSW and NSW. There were 81 residents in this age group who were considered to have a profound or severe disability making up 32.0% of the population, compared to 48.3% for Gunnedah LGA, 43.8% for Regional NSW and 47.6% for NSW.

Disability rates by age were not analysed for the townships as these smaller population centres are impacted by low population numbers and are therefore unlikely to contribute to reliable conclusions.

Figure 4-32. Disability, Study areas (LGAs), 2016



Notes: Based on place of usual residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.3.2 Health infrastructure

Three hospitals were identified in the Narrabri LGA and Gunnedah LGA:

- Boggabri Multi-Purpose Service (17.4 km from Narrabri Mine): Closest health service to the Narrabri Mine:
 - Public hospital with four beds for acute/sub-acute care, co-located with residential aged care facility with 16 beds, Boggabri Medical Centre and Ambulance Service.
 - Provides inpatient services, community health, child and family nurse, 24-hour emergency department, X-ray and inpatient pathology service.
 - Provides for local health needs only, with more specialised services, including obstetrics and surgical treatments, available in Narrabri or Gunnedah.
- Narrabri Hospital – Hunter New England Health (25.1 km from Narrabri Mine):
 - Public hospital with 28 beds, including eight-bed surgery unit.
 - Caters for maternity, paediatrics, medical, surgical and palliative care.
 - Operating theatre available for routine surgery two days per week with emergency service provided 24 hours per day.
 - Provides community health services, and mental health, alcohol/drug and dentist services.
- Gunnedah Hospital – Hunter New England Health (52.8 km from Narrabri Mine):
 - Public hospital with 48 beds.
 - Provides emergency services, obstetrics, surgical and hospice care.
 - No dedicated mental health beds provided with patients required to be referred to Tamworth or NSW Mental Health Intake Line.

Mental health services are not available at Boggabri Multi-Purpose Service and are limited at both Narrabri and Gunnedah Hospitals.

A total of 16 other health facilities were identified in the audit in Narrabri, Gunnedah and Boggabri, including three community health care facilities, seven medical centres and six pharmacies.

The Winanga-Li Aboriginal Child and Family Centre, which was located in Gunnedah, is recognised by the NSW Child, Family and Community Peak Aboriginal Corporation, as an Aboriginal services provider in NSW. The Centre offers health services by linking families with local services and organising health-related activities (such as vaccination checks, health checks for children and adults, vision and hearing screening) and various support groups.

The Gunnedah Rural Health Centre Super General Practitioner (GP) Clinic was considered to be significant due to its size. The centre is located in the grounds of the Gunnedah District Hospital and offers: 14 consulting rooms for general practice doctors (GPs), practice nurse, allied health and visiting medical specialists, three treatment rooms, a three-bed observation ward and two minor operating rooms, four education consulting rooms, one large meeting room/audio-visual equipment, a library, and pathology services.

4.3.3 Public safety and security

4.3.3.1 Crime rates

Increased crime rates, or an increased feeling of being unsafe, are sometimes raised by community members as an impact of mining activities, and a limited number of engagement participants raised this as an issue. Mining has been undertaken in the area of social influence for the last 15 years (Boggabri Coal Mine [2006], Tarrawonga Coal Mine [2006], Rocglen Coal Mine [2008], Narrabri Mine [2012], Maules Creek Coal Mine [2015] – see Section 4.5.2) and crime data is available throughout this period allowing an assessment of the connection between crime rates and mining activity at a high level.

The NSW Government Department of Justice (2019) publishes data on the number of crimes recorded over a specified time period. The data for Narrabri LGA and Gunnedah LGA is provided below by category of offence.

The data comes with a number of disclaimers around the accuracy of the recording and reporting of offences. It notes that recorded crime statistics for some offence categories do not accurately reflect the actual level of crime in the community as:

- There may be low public willingness to report crime. Many crimes that occur are not reported to police and will therefore not be recorded, for example, a large number of assaults, sexual assaults and robberies are not reported to police.
- There may be shifts in policing policy. Recording of offences that are detected by, rather than reported to police, are strongly affected by policing practices, for example, recording of drug offences, drink driving offences, offensive behaviour and receiving stolen goods do not accurately reflect actual rates of incidences.
- Recorded crime rates may be impacted by high numbers of visitors compared to residents. Some areas have more visitors compared to residents, and crime rates in these areas, expressed as the number of incidences per 100,000 residents, may be higher than areas with fewer visitors.
- Recorded crime rates in LGAs with small population sizes are not always a good indicator of offending. Crime rates in areas with populations under 3,000 people may be unreliable and should be interpreted with caution.

The data is summarised into ten categories:

- Against justice procedures: Breach Apprehended Violence Order, Breach bail conditions, Escape custody, Fail to appear, Resist or hinder officer, and Other offences against justice procedures.
- Assault: Assault - domestic violence related, Assault - non-domestic violence related, and Assault Police.
- Disorderly conduct: Criminal intent, Offensive conduct, Offensive language, Trespass.
- Drug offences: Cultivating cannabis, Dealing, trafficking in: amphetamines, cannabis, cocaine, ecstasy, narcotics, other drugs, Importing drugs, Manufacture drug, Possession and/or use of: amphetamines, cannabis, cocaine, ecstasy, narcotics, other drugs, Other drug offences.
- Homicide: Attempted murder, Manslaughter – driving, Manslaughter – not driving, Murder, Murder accessory, conspiracy.
- Malicious damage to property: Malicious damage to property.

- Other offences: Abduction and kidnapping, Arson, Betting and gaming offences, Blackmail and extortion, Intimidation, stalking and harassment, Liquor offences, Other offences against the person, Pornography offences, Prohibited and regulated weapons offences, Prostitution offences, Transport regulatory offences, and Other offences.
- Robbery: Robbery with a firearm, Robbery with a weapon not a firearm, and Robbery without a weapon.
- Sexual offences: Sexual assault and Indecent assault, act of indecency and other sexual offences.
- Theft: Break and enter – dwelling, Break and enter - non-dwelling, Fraud, Motor vehicle theft, Other theft, Receiving or handling stolen goods, Steal from dwelling, Steal from motor vehicle, Steal from person, Steal from retail store and Stock theft.

Theft was the most often recorded category of crime in the Narrabri LGA and the Gunnedah LGA over the past 20 years (Table 4-64). This category of offence includes all types of theft, such as stealing from a dwelling, from a motor vehicle, from a person, and from a retail store and stock theft.

There were 411 thefts recorded in Narrabri LGA in 2018, as well as 167 assaults, 142 offences against justice procedures, 135 reports of malicious damage to property, 60 drug offences, 60 disorderly conduct offences, 32 sexual offences, two homicides and one robbery, as well as 215 offences fitting into the "other offences" category.

There were 499 thefts recorded in Gunnedah LGA in 2018, as well as 165 reports of malicious damage to property, 137 assaults, 109 offences against justice procedures, 62 disorderly conduct offences, 36 drug offences, 30 sexual offences and two robberies, as well as 210 offences fitting into the "other offences" category.

Rates of recorded crime per 100,000 population can be useful to compare the incidences of crime between two areas. As noted above, there are limitations with using resident populations for calculating crime rates, and this should be considered when interpreting these crime rates.

Over the past 17 years (2011-2018) the rate of thefts has been consistently higher than other forms of recorded crime in Narrabri LGA and Gunnedah LGA (Figure 4-33 and Figure 4-34). According to the analysis, rates of crime were trending down for most categories of crime over the 17-year period (where sufficient data was available to establish a trend). Rates of crime were increasing for breaches of justice procedures in Narrabri LGA and both breaches of justice procedures and "other offences" in Gunnedah LGA.

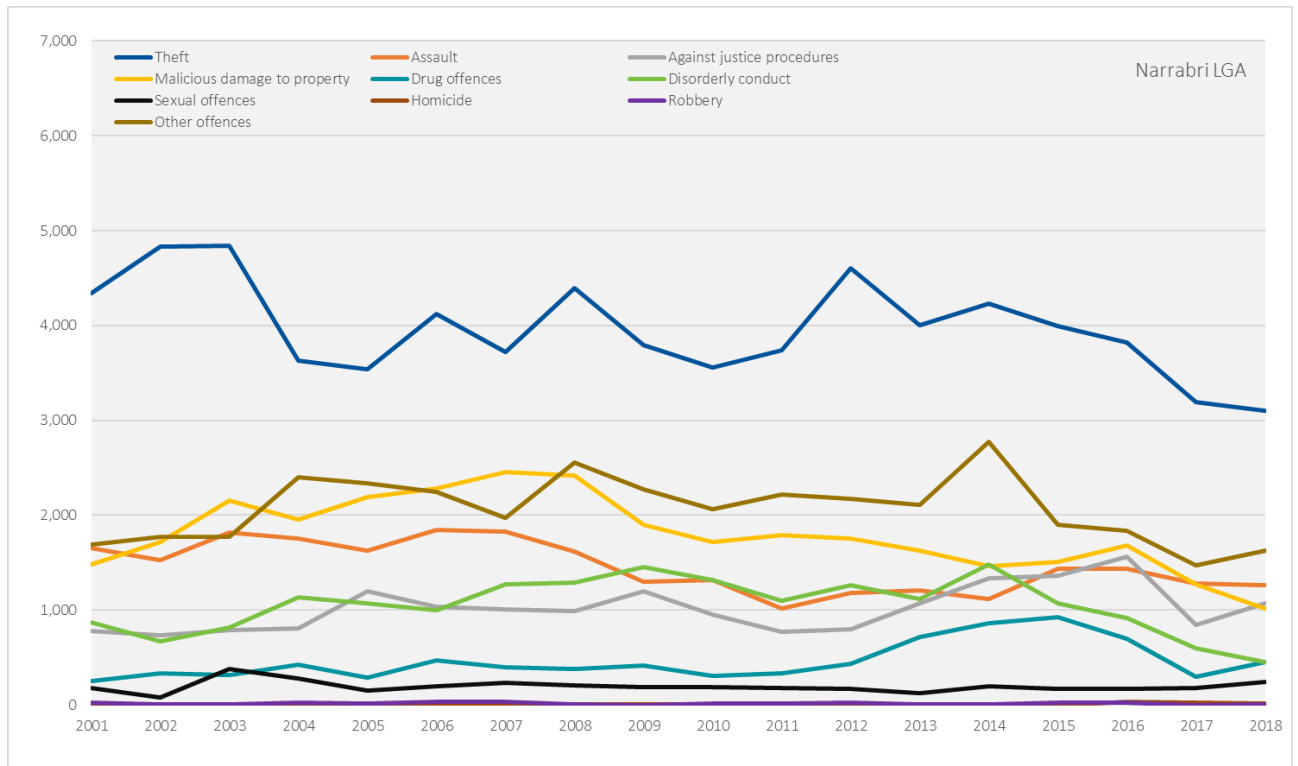
Over the last five years (2014 to 2018), trend analysis published by the NSW Government Department of Justice (2019) noted that all categories of crime were either stable or decreasing in Narrabri LGA and Gunnedah LGA (where sufficient data was available to establish a trend).

Table 4-64. Recorded incidents of offences by category, Narrabri LGA and Gunnedah LGA, 1999-2018

Crime	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Narrabri LGA																				
Theft	727	662	626	688	680	500	481	556	497	585	506	477	502	619	540	570	537	511	424	411
Assault	234	269	238	218	256	242	221	249	244	215	173	177	137	158	163	150	193	192	170	167
Against justice procedures	139	115	113	104	111	111	163	139	134	132	160	127	103	107	144	180	183	209	112	142
Malicious damage to property	298	302	213	245	303	270	298	307	328	322	253	230	240	236	220	197	203	225	169	135
Drug offences	57	74	36	48	44	58	39	63	53	50	55	41	45	58	97	116	124	93	40	60
Disorderly conduct	135	110	126	95	115	157	145	134	170	172	194	177	147	170	151	200	144	122	79	60
Sexual offences	63	25	26	11	53	39	21	27	31	27	25	25	24	23	17	27	23	23	24	32
Homicide	0	4	0	0	0	1	0	0	0	1	1	1	1	1	0	0	0	4	3	2
Robbery	8	2	4	1	1	3	2	5	4	1	0	2	2	3	1	1	3	3	0	1
Other offences	268	239	244	252	249	331	318	303	264	340	304	276	298	292	285	374	256	245	196	215
LGA Total	1,929	1,802	1,626	1,662	1,812	1,712	1,688	1,783	1,725	1,845	1,671	1,533	1,499	1,667	1,618	1,815	1,666	1,627	1,217	1,225
Gunnedah LGA																				
Theft	509	612	551	719	634	567	549	448	469	517	476	546	657	637	563	666	604	344	384	499
Assault	89	107	138	183	178	154	196	174	184	216	184	181	188	187	220	151	160	150	157	137
Against justice procedures	62	66	86	100	132	124	123	111	63	116	133	151	139	106	127	79	131	105	86	109
Malicious damage to property	161	240	196	186	223	207	225	285	303	289	230	296	250	267	344	228	233	191	152	165
Drug offences	56	54	49	60	78	42	33	28	20	35	57	85	37	37	48	37	48	41	31	36
Disorderly conduct	59	64	67	84	90	94	108	88	79	132	134	109	124	79	121	121	92	82	66	62
Sexual offences	25	33	36	22	44	16	24	27	32	24	15	28	28	21	31	29	36	36	24	30
Homicide	0	1	0	1	1	1	0	0	3	1	0	0	0	0	0	1	0	0	1	0
Robbery	3	7	1	2	1	2	6	1	2	5	2	4	1	1	2	1	1	0	1	2
Other offences	104	93	87	163	219	156	144	190	172	241	215	260	269	233	338	245	264	211	197	210
LGA Total	1,068	1,277	1,211	1,520	1,600	1,363	1,408	1,352	1,327	1,576	1,446	1,660	1,693	1,568	1,794	1,558	1,569	1,160	1,099	1,250

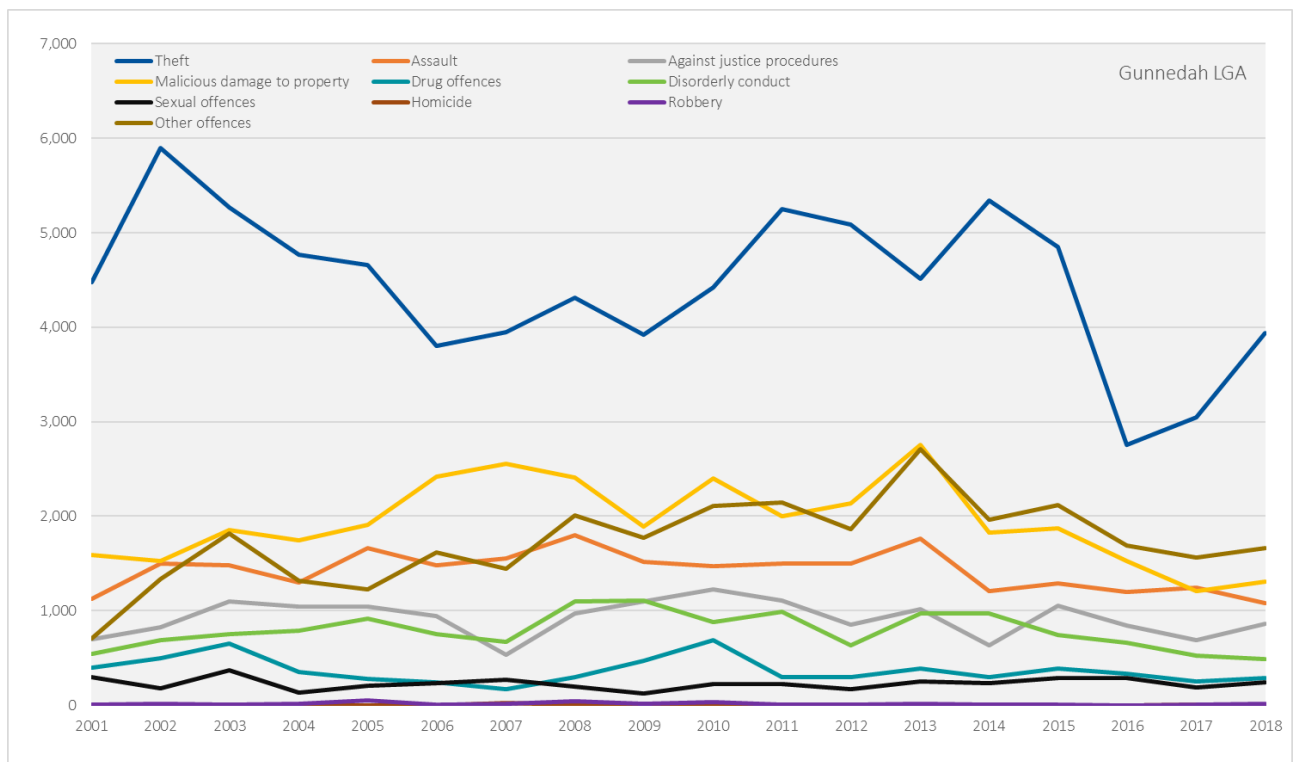
Source: (NSW Government [Department of Justice], 2019);

Figure 4-33. Recorded incidents of offences by category per 100,000 population, Narrabri LGA, 2001-2018



Source: (NSW Government [Department of Justice], 2019);

Figure 4-34. Recorded incidents of offences by category per 100,000 population, Gunnedah LGA, 2001-2018

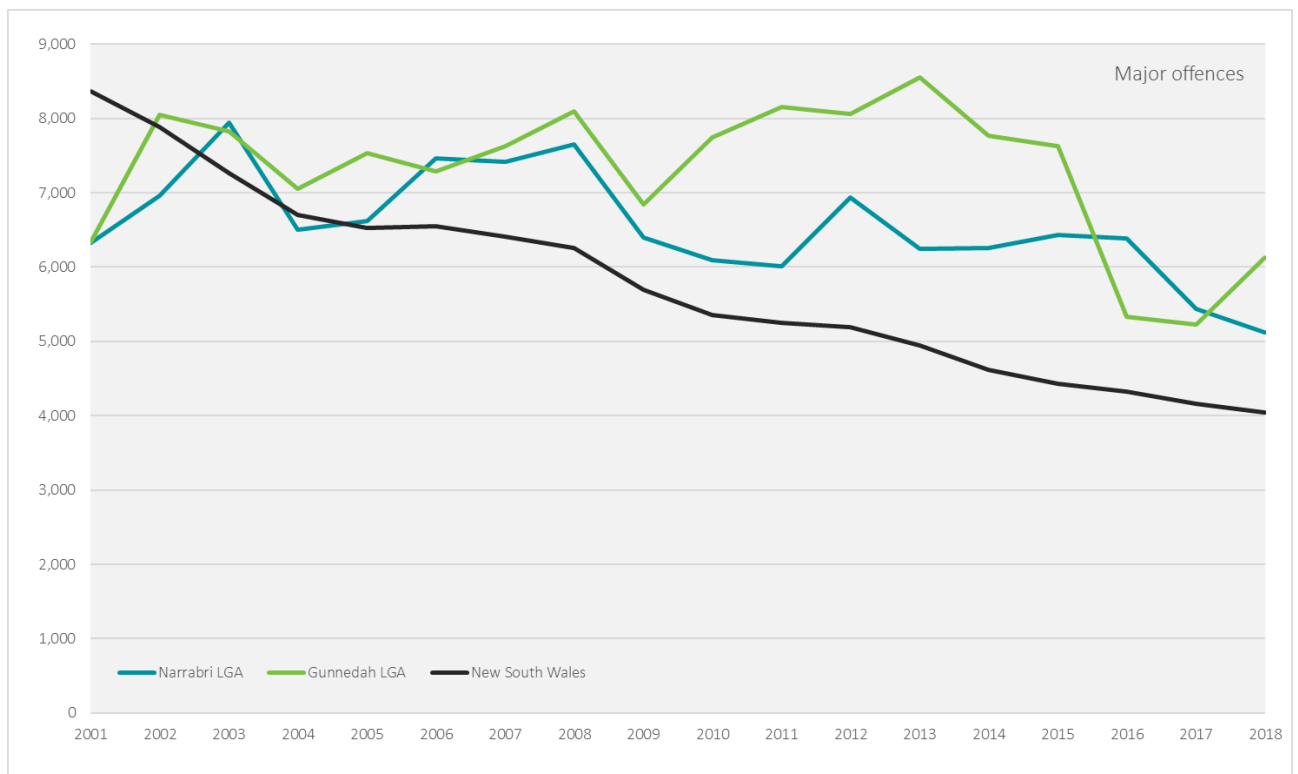


Source: (NSW Government [Department of Justice], 2019);

Overall, the rates of major crime have been decreasing in the Narrabri LGA and Gunnedah LGA over the past 17 years. However, the rates of major crime have been decreasing at a slightly slower rate than the decrease for NSW as a whole. Data for Regional NSW was not available so this decline may be impacted by large population centres such as Sydney.

The analysis does not suggest any change in crime overall or in the types of crimes that may create a feeling of being less safe (such as assault, for example) that could be attributed to an increase in mining during this period.

Figure 4-35. Recorded incidents of offences per 100,000 population, Major offences only, Study areas, 2001-2018

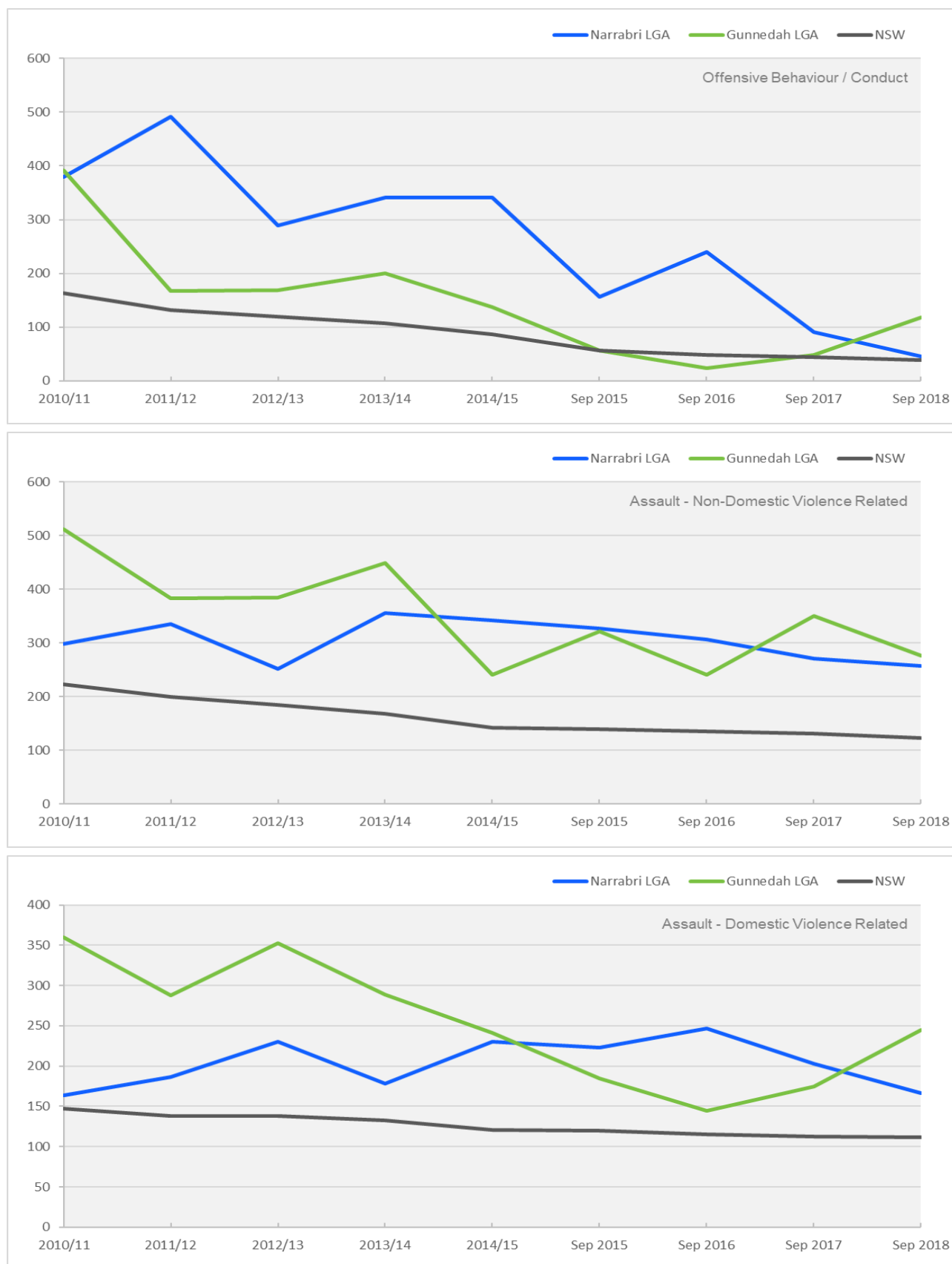


Source: (NSW Government [Department of Justice], 2019);

Rates of crime where police flagged the incident as being alcohol-related (alcohol-related crime) were generally higher in the Narrabri LGA and Gunnedah LGA than NSW as a whole (Figure 4-36). The Narrabri LGA had a higher rate of alcohol-related offensive behaviour or conduct than Gunnedah LGA and NSW, however the rate of occurrence of this form of incident has reduced between 2011 and 2018. Both the Narrabri LGA and Gunnedah LGA had higher rates of assault – both non-domestic violence-related, and domestic violence-related – compared to NSW. In the Narrabri LGA, these rates were steady across the time period, while for the Gunnedah LGA, the rate of non-domestic violence-related alcohol-related crime was trending down, and the rate of domestic violence-related alcohol-related crime was variable (trending down between 2011 and 2016, however, recently growing).

The datasets used to measure alcohol related crime rates, however, had a number of limitations, principally a change in the reporting periods utilised, which was published for financial years between 2010/11 and 2014/15, and changed to twelve-month periods to September from 2015 to 2018. Also, to calculate the rates of alcohol-related crime, population data for 30 June in each year was used meaning that the population data is not for the midway point in each of the twelve-month periods. However, these limitations are not likely to significantly reduce the validity of the analysis in terms of understanding trends.

Figure 4-36. Alcohol-related crime rates per 100,000 population, Study areas (LGAs), 2010/11 to 2014/15, and Year to September from 2015 to 2018



Source: (NSW Government [Department of Justice], 2019);

4.3.3.2 Perception of safety

Higher proportions of the Narrabri LGA and Gunnedah LGA residents report that they feel safe or very safe, compared to Regional NSW and NSW as a whole (Table 4-65). This data was from 2014 and may therefore no longer reflect current attitudes. However, at the time this data was collected, many of the mines in the area were operational including Narrabri Mine. The data should therefore capture any perception of feeling unsafe associated with increased mining activity in the area of social influence.

Table 4-65. Estimates of feeling safe/very safe, Persons 18 years of age and older, 2014

Area	Persons		
	Number	ASR ¹ per 100	SR ²
Felt very safe/safe walking alone in the area after dark			
Narrabri LGA	6,049	60.8	116
Gunnedah LGA	5,399	57.9	111
Regional NSW	1,107,228	55.9	107
NSW	3,054,012	53.4	102

Notes: Small areas are modelled and compiled by PHIDU from various data sources (see Box 4-1). 1. ASR = Age Standardised Rate: Adjusts for different population age structures. 2. SR = Standardised Ratio: Comparison of ASR to Australian rate which is assigned a value of 100. Source: (Torrens University Australia, 2019) [PHIDU];

4.3.4 Engagement findings

4.3.4.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, a high proportion of local respondents to the community survey agreed or strongly agreed that the community is a safe place to live (31.7%), while a lower proportion thought that the community is a clean and healthy place to live (24.4%).

4.3.4.2 Council officer discussions

The NSC officers who participated in the engagement activities did not raise health and wellbeing issues.

The GSC officers who participated in the engagement activities highlighted social challenges experienced in the Gunnedah LGA as being domestic violence, and drug and alcohol problems. They noted:

- There were 189 reported incidents of domestic violence each year, but they believed that not all are reported.
- Alcohol abuse and drug consumption were issues, including methamphetamines and abuse of prescription medicines.

4.3.4.3 Landholder discussions

Four nearby landholders reported that coal dust was impacting their quality of life and one landholder expressed concern about the health impacts of potentially drinking water and breathing air with coal dust in it.

4.3.4.4 Aboriginal groups discussions

Members of the Aboriginal groups did not raise health and wellbeing issues.

4.4 Infrastructure, Services and Facilities

Although no significant additional construction or operational workforce is proposed as part of the Project likely to result in population growth, the extension may encourage some of the workforce that currently does not reside in the area of social influence to move into the area, and thus contribute to minimal additional demand on infrastructure, services and facilities. The retention of the existing mining workforce for a longer period of time will also result in the continuation of existing demands on infrastructure, services and facilities over the extended period. Therefore, it is important to understand the existing situation to understand vulnerability to possible small changes. The information presented in this section will be utilised in the impact assessment (Section 5) as required to assess the relevant impacts of the Project on infrastructure, services and facilities.

4.4.1 Social infrastructure

4.4.1.1 Early learning facilities

A total of 20 early learning facilities were identified in the audit of social infrastructure including:

- Eight childcare facilities located in:
 - Narrabri: Four facilities providing 193 places.
 - Gunnedah: Four facilities providing 223 places.
- Twelve preschool facilities located in:
 - Narrabri: Four facilities.
 - Boggabri: One facility.
 - Gunnedah: Seven facilities.

The full audit of social infrastructure is included in Appendix F.

A benchmark provision of one childcare place per 6.6 children aged 0-5 years can be used to determine theoretical need for childcare places, based on 15% of the population in this age group attending childcare on a regular basis (Australian Social and Recreation Research Pty Ltd, 2008). When this ratio was calculated for the population of children aged 0-5 years in Narrabri LGA and Gunnedah LGA, the benchmark suggests that there is an adequate supply of childcare facilities. A comparison of the provision of places in early 2020, compared to the calculated theoretical need in 2016, is outlined below and suggests that an adequate supply is available.

Current Supply:

- 193 places in Narrabri LGA and 223 places in Gunnedah LGA in January 2020.

Theoretical Demand:

- 174 places in Narrabri LGA and 112 places for Gunnedah LGA in 2016 based on one childcare place needed per 6.6 children aged 0-5.

This is a high level analysis only and has a range of limitations. The one childcare place per 6.6 children aged 0-5 years is an estimate of need only and is used in a variety of contexts in Australia. It may not be relevant to the local context in Narrabri LGA and Gunnedah LGA. Also the analysis compares the provision of places in early 2020 with the population at 2016 and these time periods do not align. However, given age group estimates were not available for more recent years, this was the best data available. Also, as the area is not experiencing strong population growth, it is likely that the 2016 population of 0-5 year old children and the population of children at a more recent point would not have changed to a large extent to impact the results. In any case, the analysis should be considered as a broad indication of demand and supply for childcare places.

4.4.1.2 Primary and Secondary Education

Schools and enrolments

A total of ten primary schools and three secondary schools were identified in the audit within proximity of the Narrabri Mine (in Narrabri, Boggabri, Maules Creek and Gunnedah):

- Ten primary schools:
 - Government: Two in Narrabri, one in Boggabri and one in Maules Creek, and two in Gunnedah.
 - Non-Government: One in Narrabri and one in Boggabri, and two in Gunnedah.
- Three secondary schools:
 - Government: One in Narrabri, and one in Gunnedah. There is also a second high school located in the Narrabri LGA at Wee Waa.
 - Non-Government: One in Gunnedah.

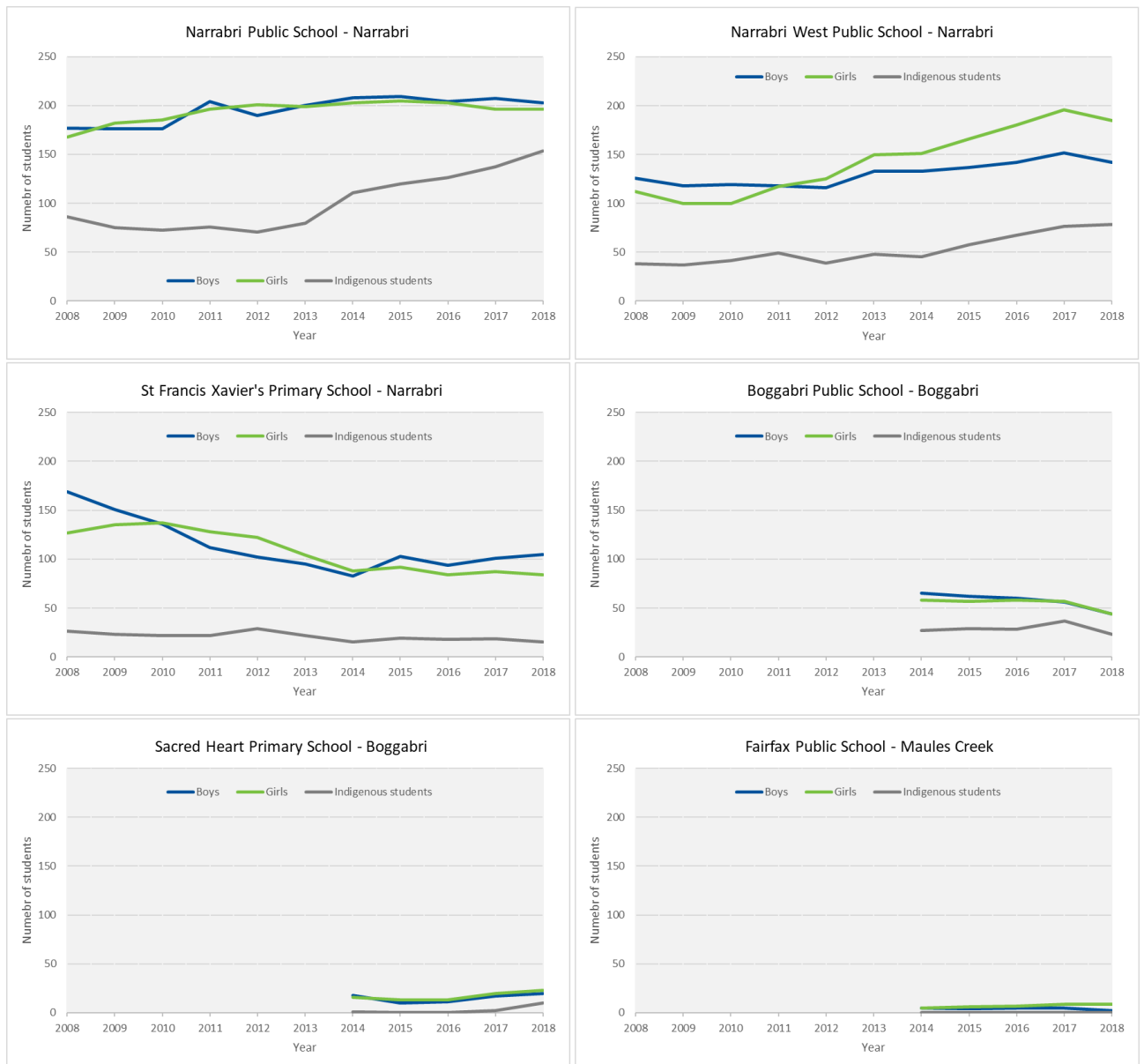
The full audit of social infrastructure is included in Appendix F.

Figure 4-37 shows enrolments for primary schools within proximity of the Narrabri Mine in the Narrabri LGA between 2008 and 2018 (where available) (Australian Curriculum, Assessment and Reporting Authority, 2020). There were four government primary schools and two non-government primary school. Enrolments at Narrabri Public School have remained consistent for boys and girls and has experienced a considerable rise in the number of Indigenous student enrolments since 2013. Similarly, Narrabri West Public School has experienced an overall rise in enrolments for boys, girls and Indigenous students since 2008. Enrolments at St Francis Xavier's Primary School have declined since 2008 levels. There were very low enrolments at Boggabri Public School, Sacred Heart Primary School and Fairfax Public School – the three schools closest to the Narrabri Mine.

Figure 4-38 shows a recent decline in enrolments at Narrabri High School, however, enrolments of Indigenous students has remained consistent throughout the time period and show a slight increase in 2018.

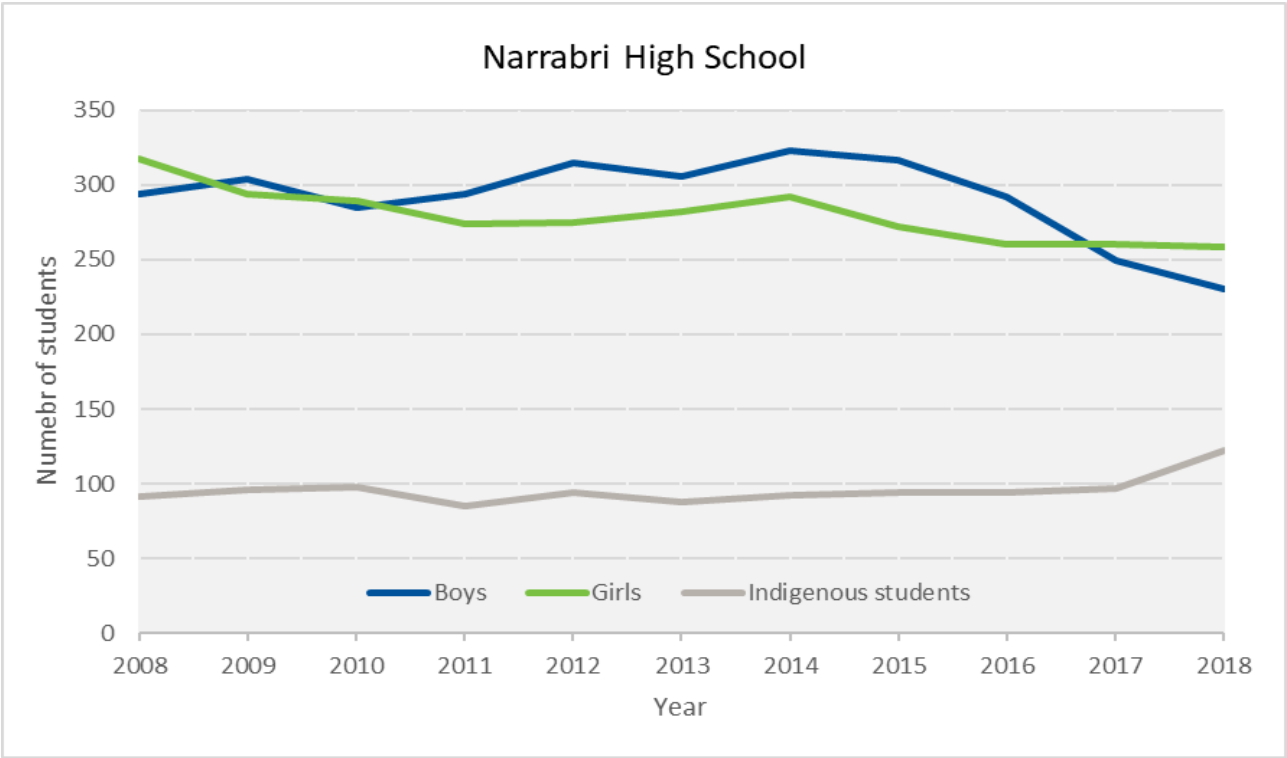
Figure 4-39 shows enrolments for primary schools in Gunnedah (Australian Curriculum, Assessment and Reporting Authority, 2020). There were two government primary schools, and two non-government primary schools. Enrolments at primary schools generally increased in recent years.

Two secondary schools were identified in Gunnedah. Figure 4-40 shows enrolments for boys and girls at Gunnedah High School have been falling since 2008. Indigenous enrolments, however, have been steady. The number of enrolments at St Mary's College have been variable but fairly flat overall in the period.

Figure 4-37. Primary school enrolments by school, Narrabri, Boggabri and Maules Creek, 2008-2018

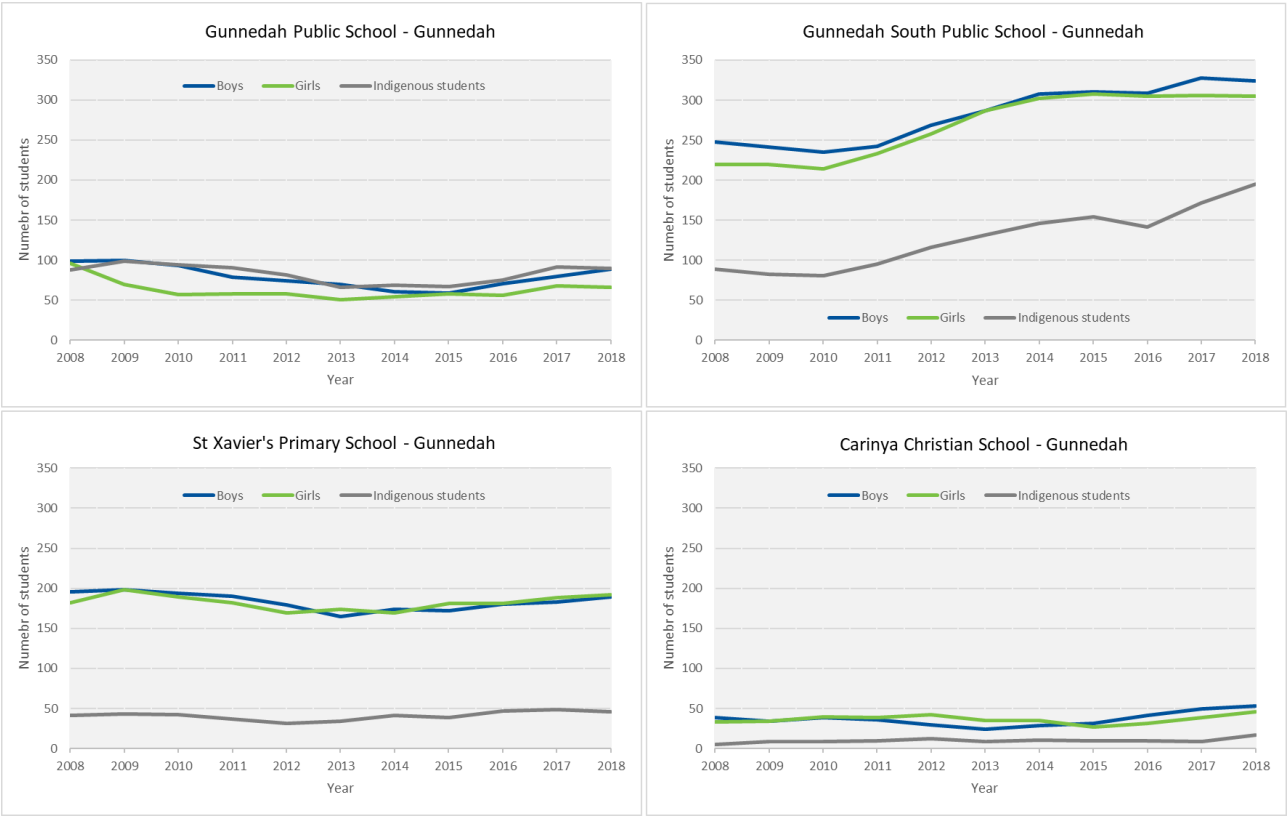
Source: (Australian Curriculum, Assessment and Reporting Authority, 2020);

Figure 4-38. Secondary school enrolments by school, Narrabri, 2008-2018

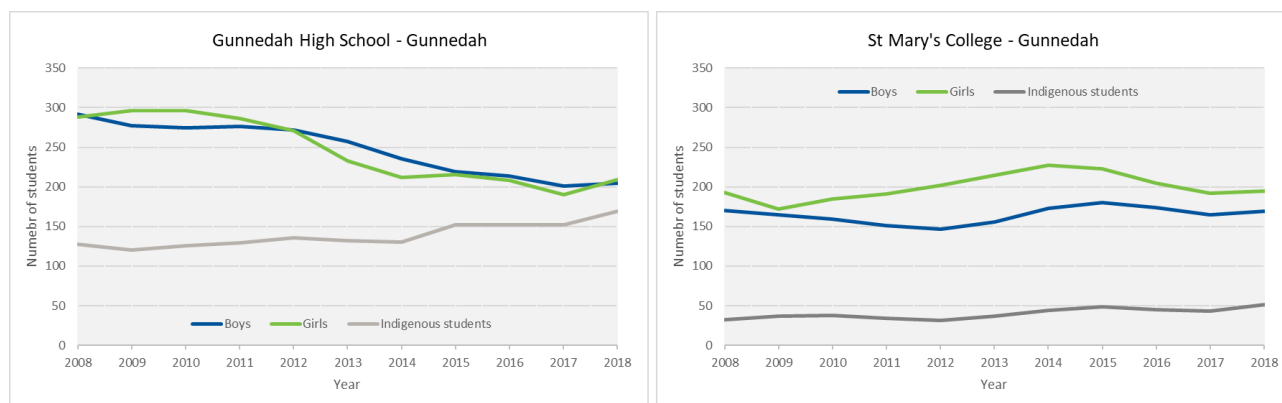


Source: (Australian Curriculum, Assessment and Reporting Authority, 2020);

Figure 4-39. Primary school enrolments, Gunnedah, 2008-2018



Source: (Australian Curriculum, Assessment and Reporting Authority, 2020);

Figure 4-40. Secondary school enrolments, Gunnedah, 2008-2018

Source: (Australian Curriculum, Assessment and Reporting Authority, 2020);

Future Need

Based on population projections undertaken by the NSW State Government (2019 Edition) (NSW Government [Department of Planning and Environment], 2019), the numbers of primary and secondary school aged children in Narrabri LGA are expected to decline between 2016 and 2041 (Table 4-66). The decline is projected to be around 310 primary school aged children and 120 secondary school aged children over this 25-year period. A decline of 310 primary school aged children may mean that one primary school would no longer be needed in the Narrabri LGA (given that even the largest primary school in Narrabri has around 400 enrolments). A decline of 120 secondary school aged children may also reduce the viability of the two high schools located in the Narrabri LGA (at Narrabri and Wee Waa) but would likely not result in closure.

The numbers of primary and secondary school aged children in Gunnedah LGA are also expected to decline between 2016 and 2041, by around 210 primary school aged children and 70 secondary school aged children. A decline of 210 primary school aged children may reduce the viability of the schools in Gunnedah depending on how the reduction in demand was distributed across schools but would likely not result in closure. A decline of 70 secondary school aged children may reduce the viability of the two high schools located in Gunnedah but would likely not result in closure.

It should be noted that the analysis in this section is only based on enrolments and high-level population projections. The NSW Government and non-government school authorities make decisions on school viability based on their own analysis. Also, the projections utilised do not consider the demographic impact of any major projects in the social area of influence that may increase population growth (see Section 4.5.2).

Table 4-66. School aged children projections, Study Areas (LGAs), 2016-41

Age Group	2016	2021	2026	2031	2036	2041	Change (2016-2041)
Narrabri LGA							
Primary school aged children	1,429	1,397	1,248	1,189	1,153	1,116	-313
Secondary school aged children	982	1,039	1,055	960	895	865	-118
Gunnedah LGA							
Primary school aged children	1,232	1,298	1,158	1,103	1,069	1,024	-208
Secondary school aged children	883	914	970	899	838	814	-69

Note: Primary and secondary school aged children were estimated based on 5-year age groups. Primary school aged children are 5-11 years and secondary school aged children 12-17 years.

Source: (NSW Government [Department of Planning and Environment], 2019); Estimates by CDM Smith;

4.4.1.3 Tertiary education

Four tertiary education facilities were identified in the audit, two in Narrabri township and two in Gunnedah township. The following is a summary of the courses available at each of the tertiary education facilities.

Table 4-67. Tertiary education and courses, 2019

Location	Courses Somewhat Related to Mining Industry Application	Courses Not Related to Mining Industry Application
TAFE NSW Narrabri Campus	<ul style="list-style-type: none"> ■ Certificate I in Access to Vocational Pathways (FSK10113) Certificate I in Access to Work and Training (10583NAT) Certificate I in Engineering (MEM10105) Certificate I in Information, Digital Media and Technology (ICT10115) Certificate I in Preparation for Work and Training (10582NAT)	Certificate II in Retail Services (SIR20216) Certificate I in Fundamental Aboriginal Languages for Personal Use (10703NAT)
Narrabri Community College Northern Inland	Certificate I in Information, Digital Media and Technology (ICT10115) Certificate in Construction (CPC20112) First Aid – One Day Workshop (HLTAID003)	Certificate IV in Disability (CHC43115) Certificate III in Individual Support – Ageing Specialisation (CHC33015) Certificate IV in New Small Business (BSB42618)
TAFE NSW Gunnedah Campus	Certificate III in Information, Digital Media and Technology (ICT30118) Certificate II in Automotive Servicing Technology (AUR20516) Certificate II in Construction (CPC20112) Certificate I in Information, Digital Media and Technology (ICT10115) Certificate II in Skills for Work and Vocational Pathways (FSK20113) Certificate I in Engineering (MEM10105) Certificate I in Preparation for Work and Training (10582NAT)	Diploma of Nursing (HLT54115) Certificate IV in Community Services (CHC42015) Certificate IV in Retail Management (SIR40316) Certificate III in Business Administration (BSB30415) Certificate III in Community Services (CHC32015) Certificate III in Early Childhood Education and Care (CHC30113) Certificate III in Health Services Assistance (Assisting in nursing work in acute care) (CHC30113) Certificate III in Individual Support (Ageing, Home and Community) (CHC33015) Certificate III in Retail (SIR30216) Certificate II in Business (BSB20115) Certificate II in Community Pharmacy (SIR20116) Certificate II in Kitchen Operations (SIT20416) Certificate II in Retail Services (SIR20216) Certificate II in Salon Assistant (SHB20216)
Gunnedah Community College Northern Inland	ICT10115 Certificate I in Information, Digital Media and Technology First Aid HLTAID003 – One Day Workshop	CHC33015 Certificate III in Individual Support – Ageing Specialisation

Source: (TAFE NSW, 2020b); (Community College Northern Inland, 2020a); (TAFE NSW, 2020a); (Community College Northern Inland, 2020b);

Only a small proportion of available courses at the four tertiary institutions were considered to be somewhat related to application in the mining industry. Courses that were considered to have some link to the mining industry included courses in construction, information technology, engineering and mechanics, as well as preparation for work courses. Most of these courses were available only to a low certificate level – Certificate I or II. Only one course was available at a Certificate III level, being a course in information technology.

Courses that were considered not to be related to the mining industry included qualifications in community services, health services, retail, childcare and aged care. Many of these courses were available to higher certificate levels - Certificate III and IV.

Also evident from this data, there was only a small number of courses delivered through tertiary education providers located in Narrabri township; a total of eleven courses. Of the eleven courses, seven were available only to a Certificate I level.

Most of the positions available at the existing Narrabri Mine require qualifications that are not obtainable within the area of social influence. However, around 100 positions have been created since 2017 at Narrabri Mine for people without any pre-existing training or qualification. Training is provided on-site to assist these staff to obtain a Certificate III in Underground Mining training.

The full audit of social infrastructure is included in Appendix F.

4.4.1.4 Community facilities

A range of other community facilities was identified in the audit including community halls, community centres, libraries, cultural facilities and major recreation facilities. Of the general community facilities identified in the audit, the Baan Baa Community Hall and playground are the only facilities located in close proximity to the Narrabri Mine. The community hall and playground, along with the Baan Baa Railway Hotel, provide an important meeting place for the local Baan Baa community and its catchment of surrounding rural properties.

The full audit of social infrastructure is included in Appendix F.

4.4.2 Road infrastructure and traffic

Road transport is considered in detail in the Road Transport Assessment (The Transport Planning Partnership, 2020). This section includes a brief description of the nearby road infrastructure and existing traffic trends.

Nearby road infrastructure includes:

- Kamilaroi Highway: Link between New England Highway at Willow Tree and Bourke, and passes through Gunnedah, Boggabri and Narrabri. In the vicinity of the Narrabri Mine, the Kamilaroi Highway travels almost north-south, has a sealed surface with a single travel lane in each direction, sealed shoulders and a posted speed limit of 100 kilometres per hour (km/h).
- Kurrajong Creek Road: A local road joining Kamilaroi Highway and Mayfield Road. It is a sealed two-way road with no centre line marking and a posted speed limit of 80 km/hr. Just off the highway, the road crosses the Werris Creek Mungindi Railway at a level crossing. The railway crossing is actively controlled with flashing lights and boom barriers. Access to Narrabri Mine is off Kurrajong Creek Road just after the railway crossing and just west of the interchange with the Kamilaroi Highway.
- Kurrajong Creek Road intersection: The Kamilaroi Highway is widened with channelised left and right turn lanes for vehicles turning into Kurrajong Creek Road, and sealed shoulders on both sides of the Kamilaroi Highway. Overhead street lighting is provided at the intersection.

Surveyed traffic volume in June 2019 included:

- Approximately 2,500 vehicles per weekday (19% heavy vehicles) and 1,900 per weekend day on Kamilaroi Highway north of Kurrajong Creek Road.
- Approximately 2,550 vehicles per weekday (17% heavy vehicles) and 1,850 per weekend day on Kamilaroi Highway south of Kurrajong Creek Road.
- Approximately 850 vehicles per weekday (9% heavy vehicles) and 400 per weekend day on the Narrabri Mine access road.

Narrabri Mine traffic trends included:

- Approximately 850 vehicles per weekday (9% heavy vehicles) and 400 per weekend day.
- Distinct peak in weekday inbound traffic between 5.00am and 7.00am with a lesser peak in outbound traffic between 4.00pm and 5.00pm on Monday to Thursday and 6.00pm to 7.00pm on Friday.
- Narrabri Mine generated traffic during average weekday morning peak hour (6.00am to 7.00am) was 128 vehicles per hour, with 78 from the north and 50 from the south.
- Narrabri Mine generated traffic during average weekday afternoon peak hour (4.00pm to 5.00pm) was 85 vehicles per hour, with 52 to the north and 33 to the south.

Narrabri Mine railway usage trends included:

- Narrabri Mine generates an average of four trains per day and a peak of eight trains per day.
- The Kurrajong Creek Road interchanged is occupied by Narrabri Mine-generated trains an average of eight times per day and a peak of 16 times per day.
- Train movements occur 24 hours per day and seven days per week.

4.4.3 Engagement findings

4.4.3.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, high proportions of local respondents to the community survey agreed or strongly agreed that the community has a good range of education and training opportunities (43.9%), that community, health and emergency services are good (39.0%) and that the roads are generally good (29.3%).

4.4.3.2 Council officer discussions

The NSC officers who participated in the engagement activities noted that the existing Narrabri Mine was impacting the road network around the site, however discussions were underway to reduce traffic impacts during busy times. Officers also noted that there was a community perception that mining projects created pressure on community infrastructure and services including health services (such as doctors). They noted that this was a community perception only.

The GSC officers who participated in the engagement activities noted that childcare services were currently at capacity and that this is likely to be an ongoing issue. However, analysis undertaken for the SIA suggested that the current provision of childcare places was appropriate. They also suggested that access to health care services was an issue due to a lack of doctors.

4.4.3.3 Landholder discussions

Landholders did not raise issues related to infrastructure, services and facilities.

4.4.3.4 Aboriginal groups discussions

Members of the Aboriginal groups who participated in engagement activities acknowledged the positive impact that community contributions provided by NCOPL are having on their local community, through community programs and services.

4.5 Surroundings

4.5.1 Natural areas

Located to the south west of the Narrabri Mine are Pilliga East SCA, Pilliga Nature Reserve, Pilliga West SCA and Timmallallie National Park. Together these areas are sometimes referred to as the Pilliga Forest or The Pilliga.

These areas include state conservation areas, national parks and nature reserves and Aboriginal areas. The differences between these types of conservation areas are described below (according to the NSW Government Department of Planning, Industry and Environment (2020b)):

- CCA are multiple-use protected areas that protect the environment but also allow for the sustainable use of the natural resources. The land in community conservation areas includes land reserved as:
 - National parks (CCA Zone 1) – National parks are areas of public land that play an important role in conservation. They protect a wide variety of native plants and animals and their habitats, as well as our historic and cultural heritage. National parks represent a wide variety of environments and provide places where people can share cultural and recreational activities.
 - Aboriginal areas (CCA Zone 2) – Aboriginal areas recognise Aboriginal cultural heritage on public land and allow Aboriginal people to use these lands for cultural purposes. An area may have educational, ceremonial or other cultural significance to local Aboriginal people, or could have been used for its natural resources. A number of community conservation areas have also been reserved as Aboriginal areas.
 - State conservation areas (CCA Zone 3) – State conservation areas (SCAs) are lands reserved to protect areas of significant natural and cultural value. They also provide opportunities for recreation and research. Unlike other reserves, such as national parks and nature reserves, state conservation areas provide for other uses including mineral exploration and mining, and petroleum exploration and production. SCAs are reviewed every five years and if this assessment shows there is no longer a need for mining or exploration activity, an SCA can be upgraded to the category of national park or nature reserve.
- Nature reserves are areas of land with significant conservation value because they are in a mostly untouched natural condition with high biodiversity. They differ from national parks in that recreational uses are not provided for.

The Pilliga East SCA (CCA Zone 3) is the closest conservation area to Narrabri Mine. It is approximately 14 km from the Narrabri Mine at its closest point. SCAs are managed in accordance with a range of principles including:

“(a) the conservation of biodiversity, the maintenance of ecosystem function, the protection of natural phenomena and the maintenance of natural landscapes

“provision for the undertaking of uses permitted under other provisions of this Act in such areas (including uses permitted under section 47J) having regard to the conservation of the natural and cultural values of the state conservation area

“(d) provision for sustainable visitor or tourist use and enjoyment that is compatible with the conservation of the state conservation area’s natural and cultural values and with uses permitted under other provisions of this Act in such areas”. (NPW Act, Section 30G)

The Willala Aboriginal Area is located to the east of Pilliga East SCA and is also approximately 14 km from the Narrabri Mine at its closest point. The Willala Aboriginal Area covers an area of 1,347ha (NSW National Parks and Wildlife Service, 2020) and is classified as an Aboriginal Area (CCA Zone 2). Aboriginal Areas are managed in accordance with a range of principles including:

“(a) the conservation of natural values, buildings, places, objects, features and landscapes of cultural value to Aboriginal people in accordance with the cultural values of the Aboriginal people to whose heritage the buildings, places, objects, features or landscapes belong

“(c) allowing the use of the Aboriginal area by Aboriginal people for cultural purposes

“(d) the promotion of public understanding and appreciation of the Aboriginal area’s natural and cultural values and significance where appropriate

“(g) provision for sustainable visitor or tourist use and enjoyment that is compatible with the Aboriginal area’s natural and cultural values and the cultural values of the Aboriginal people”. (NPW Act, Section 30K)

Both of the natural areas closest to the Project are designated as community conservation areas, but not national parks or nature reserves, meaning that certain tourism and other uses are allowed within them. The environmental and cultural value of these areas are unlikely to be physically impacted by the Project given the distance they are located away from the Project area.

4.5.2 Nearby major projects

The following table summarises the operational, proposed and approved major projects located near the Narrabri Mine, within the Narrabri LGA and Gunnedah LGA (Table 4-68). The projects listed in Table 4-68 are major projects that were identified on the NSW Government Major Projects website (NSW Government [Department of Planning, Industry and Environment], 2020a) at the time this assessment was undertaken, with the projects at various stages of planning.

Table 4-68 provides detail on the project type, size, location, proponent/owner, status, and estimated size of construction and operational workforces. It relies on publicly available information only and some gaps were identified in the data available, particularly for projects that were being planned (and EIS' being prepared).

Three currently operational open cut coal mines were identified, excluding Sunnyside Coal Mine, which is in rehabilitation. Together these three projects employ around 1,500 people within the Narrabri LGA and Gunnedah LGA.

Proposed or approved major projects include the Narrabri Gas Project and associated Western Slopes Gas Pipeline, Vickery Extension Project, two Inland Rail sections, five solar farms, the Narrabri Grain Storage and Rail Transfer Facility and the Queensland Hunter Gas Pipeline (which has been approved for many years).

Table 4-68. Nearby current and proposed major projects, February 2020

Project	Detail / Size	Location	Proponent / Ownership	Status	Workforce
Operational					
Boggabri Coal Mine – Open cut coal mine.	7 Mtpa of saleable coal (approved).	Narrabri LGA Approximately 25 km south-east of Narrabri Mine.	Idemitsu (80%).	Operational Commenced operations in 2006. Expected closure in 2033.	600 employees and contractors.
Tarrawonga Coal Mine – Open cut coal mine.	3 Mtpa run of coal (approved).	Narrabri LGA Approximately 25 km south-east of Narrabri Mine.	Whitehaven Coal (100%).	Operational Commenced operations in 2006. Expected closure in 2026.	Total workforce of 180 people.
Maules Creek Coal Mine – Open cut coal mine.	13 Mtpa run of coal (approved)	Narrabri LGA Approximately 20 km south-east of Narrabri Mine	Whitehaven Coal (75%)	Operational Commenced operations in 2015. Expected closure in 2055.	Total workforce of 700 people.
Proposed or Approved					
Western Slopes Gas Pipeline .	Gas supply pipeline.	Narrabri LGA Approximately 29 km west of the Narrabri mine.	APA Group.	Proposed EIS being prepared.	Unknown.
Inland Rail (Narromine to Narrabri Section) – Part of the Inland Rail Proposal from Brisbane to Melbourne.	Section of track connecting Melbourne and Brisbane.	Narrabri LGA Approximately 23 km north-west of the Narrabri Mine.	Australian Rail Track Corporation.	Proposed EIS being prepared.	Unknown.

Project	Detail / Size	Location	Proponent / Ownership	Status	Workforce
Silverleaf Solar Farm – Solar farm and associated infrastructure.	120 MW solar farm.	Narrabri LGA Approximately 28 km north-east of the Narrabri Mine.	ENGIE Renewables Australia Pty Ltd.	Proposed EIS submitted.	Construction workforce of 120 people (peak), 50 (average) Operational workforce up to six FTE onsite.
Wee Waa Solar Farm.	55 MW solar farm with energy storage	Narrabri LGA Approximately 48 km north-west of the Narrabri Mine.	Overland Sun Farming.	Proposed EIS being prepared.	Unknown.
Inland Rail (Narrabri to North Star Section) (Phase 1 and 2) – Part of the Inland Rail Proposal from Brisbane to Melbourne.	Section of track connecting Melbourne and Brisbane.	Narrabri LGA Approximately 24 km north-west of the Narrabri Mine.	Australian Rail Track Corporation.	Approved / Proposed Phase 1 approved 13/08/2020. Phase 2 EIS being prepared.	Construction workforce of 180 (average).
Narrabri Gas Project – Coal seam gas (CSG) project.	850 gas wells.	Narrabri LGA Located on the neighbouring properties to the west of the Narrabri Mine.	Santos.	Approved (30/09/2020).	Construction workforce of 1,300 people (peak) Operational workforce of 345 (including ongoing construction).
Vickery Extension Project – Open cut coal mine.	7.2 Mtpa of run of mine coal (avg pa).	Border of Narrabri LGA and Gunnedah LGA Approximately 36 km south east of Narrabri Mine.	Whitehaven Coal.	Approved (12/08/2020).	Construction workforce of up to 500 FTE Operational workforce of 450 FTE.
Orange Grove Sun Farm.	110 MW solar farm	Gunnedah LGA Approximately 68 km south east of the Narrabri Mine.	Overland Sun Farming.	Approved (25/07/19).	Construction workforce of 100 (peak), 80 (average) people Operational workforce of three people.
Gunnedah Solar Farm.	150 MW solar farm.	Gunnedah LGA Approximately 64 km south-east of the Narrabri Mine.	Gunnedah Solar Farm Pty Ltd.	Approved (12/03/19).	Construction workforce of 150 (peak) Operational workforce of ten people (max).
Narrabri South Solar Farm.	60 MW solar farm.	Narrabri LGA Approximately 15 km north of the Narrabri Mine.	Canadian Solar (Australia) Pty Ltd.	Approved (21/12/2018).	Construction workforce of 75 FTEs, and 112 (peak) Operational workforce of zero on-site, ten off-site (5.1 FTEs each year).
Narrabri Grain Storage and Rail Transfer Facility.	Grain storage silos and stockpiles with rail transfer facility.	Narrabri LGA Approximately 29km south-south-east of Narrabri mine.	Unknown.	Proposed EIS being prepared.	Unknown.

Project	Detail / Size	Location	Proponent / Ownership	Status	Workforce
Queensland-Hunter Gas Pipeline.	850km Gas Pipeline.	Narrabri/ Moree Plains Route passes to the East of Narrabri Mine.	Hunter Gas Pipeline Pty Ltd	Approved 11/02/2009 On 20 July 2018, the project was made a Critical State Significant Infrastructure project Lapse Date Extension 17/10/2019	Construction workforce of up to 600, operation workforce of 25. But timing uncertain.
Closed/Rehabilitation					
Sunnyside Coal Mine.	0.4 million tonnes run of mine pa.	Gunnedah LGA Approximately 55 km south-east of Narrabri Mine.	Whitehaven Coal.	Closed / Rehabilitation Rehabilitating site.	Total workforce of 20 people.
Rocglen Coal Mine – Open cut coal mine.	1.5 Mtpa of run of mine coal (approved).	Border of Narrabri LGA and Gunnedah LGA Approximately 43km south east of Narrabri Mine.	Whitehaven Coal (100%).	Closed/ Rehabilitation Commenced operations in 2008, now site being rehabilitated.	Total workforce of 20 people.

Note: Mw = Mega Watt.

Source: (Whitehaven Coal, 2019); (Idemitsu, 2019); (NSW Government [Department of Planning, Industry and Environment], 2020a); NCOPL 2020;

Workforce Timeline

Multiple overlapping projects may create potential cumulative social impacts mainly related to project workforce impacts, for example, if multiple projects are constructed at the same time they may contribute to large temporary population increases impacting housing affordability and creating skills shortages. Additional analysis of expected workforce timelines has therefore been undertaken.

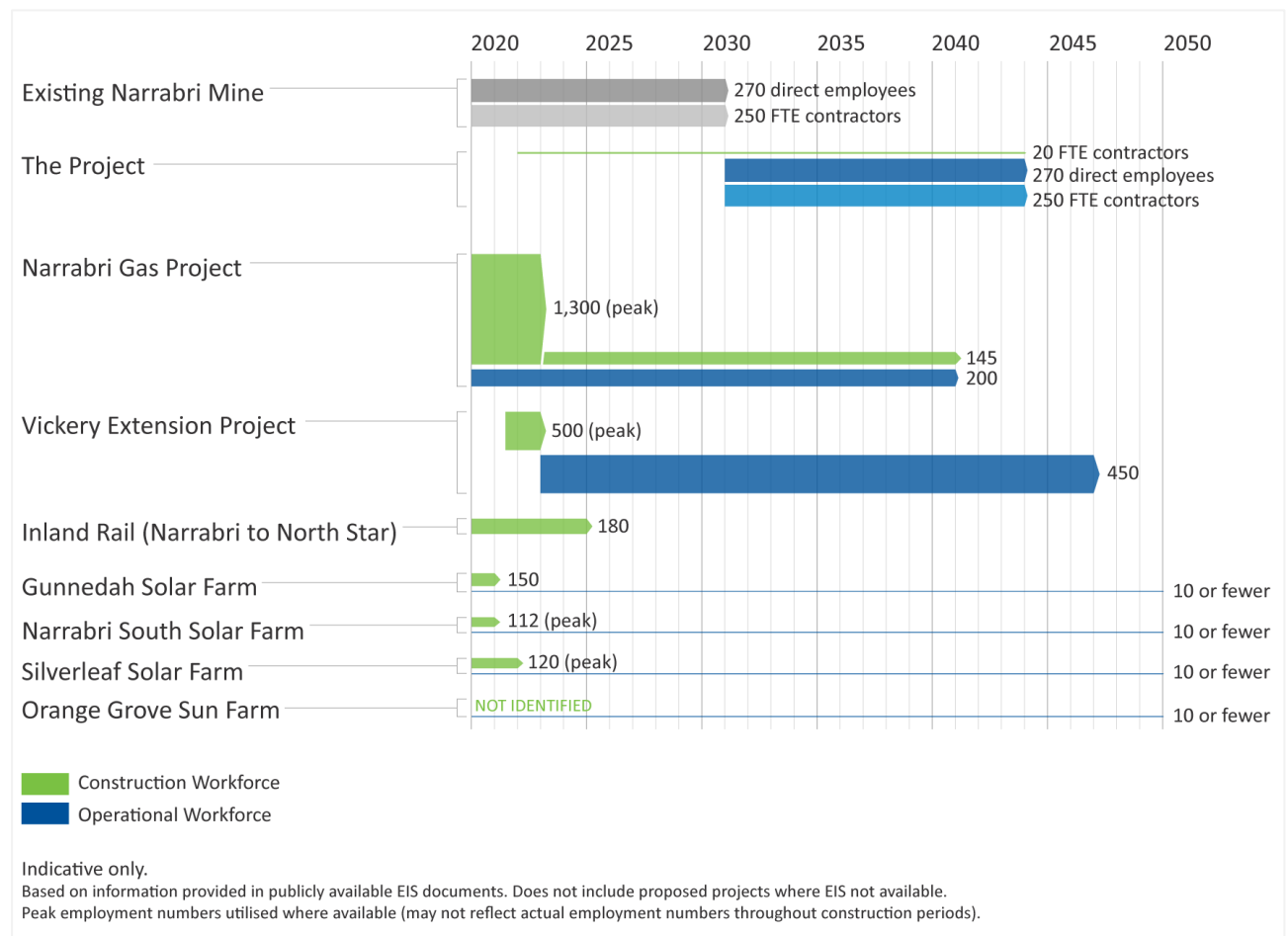
Workforce estimates for the major projects identified in the previous section have been shown in a simple visual representation below (Figure 4-41). As well as the limitations outlined in the previous section regarding workforce estimates, this figure has a number of additional limitations, including:

- It is based on workforce estimates provided in publicly available EIS documentation, and therefore does not include all major nearby projects presented in the previous section. It excludes:
 - Western Slopes Gas Pipeline
 - Inland Rail (Narromine to Narrabri)
 - Wee Waa Solar Farm
 - Narrabri Grain Storage and Rail Transfer Facility
 - Queensland Hunter Gas Pipeline (given uncertainty about timing).
- Some of the EIS documents suggest that the construction and operation of projects would have started by 2020, however construction has not yet started. Therefore, assumptions have been made about when projects may be approved and construction is started.
- The figure utilises the information provided only, and no separate analysis of their validity was undertaken.
- Only estimated peak employment numbers have been shown which may overstate the number of construction workers throughout the construction time periods.
- The timelines of some projects may be delayed or brought forward, and the workforce numbers may change (expanded or reduced). Some projects may also obtain further approvals which may change workforce numbers.
- The different workforce management strategies of different projects are not considered, for example, whether temporary workers camps are proposed.

- The geographic location of the intended construction or operational workforces is not considered, for example, some proportion of the operational workforces of some projects may not be located in the Narrabri LGA or Gunnedah LGA but in control centres elsewhere.

The figure is intended to provide an overall indication of the estimated construction and operational workforces of proposed major projects in the immediate area of the Project. Therefore, despite the limitations identified, the figure does clearly identify that, based on available information, the Project will not overlap with the construction periods of other major projects. The Narrabri Gas Project and Vickery Extension Project are expected to be operational alongside the Project, however they together have an ongoing workforce of around 650 workers, much fewer than their combined construction workforces. The solar farms are also expected to be operational alongside the Project however they generally have very small ongoing operational workforces and therefore are not expected to have much of a cumulative impact with the Project with regard to workforce numbers.

Figure 4-41. Workforce estimates of nearby proposed major projects, April 2020



4.5.3 Existing amenity impacts (noise, air quality, etc.)

4.5.3.1 Narrabri Mine Complaints

NCOPL records and responds to all community complaints in accordance with the requirements of the Narrabri Mine Environmental Management Strategy (NCOPL, 2015) and Project Approval 08_0144. The complaints register is published annually and updates throughout the year are provided through the CCC. Complaints data has been recorded since construction began in 2008. Full operations began in 2012 and the complaints register since this time is summarised below (Table 4-69).

All of the complaints were received from nearby landholders in the immediate vicinity of the Narrabri Mine. The analysis of complaints indicates that:

- Noise was the most complained about impact over the past eight years with 107 complaints recorded in total. There has been a large increase in the number of noise complaints in 2019, with nearly half of the total complaints between 2013 and 2019 occurring in 2019. A large proportion of the noise complaints in 2019 have been made by a single complainant (based on an analysis of CCC meeting notes in 2019).
- Air quality/coal dust was the second most complained about impact between 2012 and 2019, with 82 complaints recorded in total. The number of dust complaints recorded has decreased in recent years with just four recorded in the last two years (2018-2019).
- Complaints about odour and lighting impacts, rubbish on nearby roads and impacts on property values were recorded far less often compared to noise and air quality complaints. Even combined these issues were recorded 19 times over the eight-year period.
- The remaining three complaints were related to specific situations, including a perceived lack of communication about a specific activity at the Narrabri Mine, an issue with a neighbour that has an NCOPL lease arrangement and gates being left open by NCOPL staff on a leased property.

Table 4-69. Narrabri Mine complaints register summary since operations began (2012 to 2019)

Complaint Issues	2012	2013	2014	2015	2016	2017	2018	2019
Noise	1	10	10	13	14	4	5	50
Air quality/coal dust	3	22	31	3	12	7	1	3
Odour		1	1		1		1	4
Lighting			3	1		3		
Rubbish		1				1		
Property values			1				1	
Lack of consultation							1	
Issue with lessee			1					
Gates left open on leased property			1					
Issue not specified								1
Total complaint issues	4	34	48	17	27	15	9	58
Total number of complaints	4	28	39	17	25	12	6	57

Note: Some complainants complained about multiple issues. Each issue has been recorded separately in this table. The total number of complaint issues is therefore higher than the total number of complaints in most years.

Source: (Whitehaven Coal, 2020);

From 2015 onwards, complaints were recorded in less detail, with only a high-level issue recorded, for example, noise, odour and lighting. Prior to this time, additional details were recorded by NCOPL staff, including complaints related to noise, coal dust, rubbish and property access:

- Three complaints throughout 2013 related to noise that was loud enough to interrupt sleep (13 January 2013, 24 August 2013 and 19 November 2013).
- One complainant communicated that they were concerned about breathing in coal dust and about it settling on their roof and entering their drinking water (15 January 2014).
- One complainant communicated that they had coal dust in their house and it covered their feet while walking around inside, and that they were also having breathing difficulties (3 November 2014).
- One complainant communicated that they noticed an accumulation of rubbish adjacent to the main access road to the site that is used by NCOPL staff for smoking (as no smoking is allowed on-site) (20 February 2013).

- One complainant communicated that they were frustrated with NCOPL staff leaving gates open on their leased property (leased from NCOPL). The complaints register notes that this lessee wanted to stock this paddock but was not confident that the gates would be closed by NCOPL staff (23 September 2014).

4.5.4 Engagement findings

4.5.4.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, a low proportion of local respondents to the community survey agreed or strongly agreed that natural and conservation areas are protected and well maintained (15.0%).

4.5.4.2 Council officer discussions

The NSC officers who participated in the engagement activities suggested that water was a key concern for residents. They reported that there was a perception that mining uses too much water, exacerbating drought conditions. They suggested that this was a perception, rather than being accurate. This then adds to the current anxiety and stress around water access. They noted this was a community perception only.

The GSC officers who participated in the engagement activities did not raise issues related to surroundings.

4.5.4.3 Landholder discussions

Noise

Ten nearby landholders adjacent to the existing Narrabri Mine identified that they could often hear mine-related noise. Noise mainly originated from reversing bulldozers on the coal stockpile, but sometimes also from the main ventilation shaft.

Five landholders thought that noise was not a major issue; that it was a minor nuisance or interruption to the otherwise low noise environment of the rural area. However, for five other landholders, the noise was reportedly loud enough to cause impacts to their quality of life. Two landholders mentioned that noise was impacting their ability to sleep, including being woken up during the night.

One landholder likened the noise from the main ventilation shaft to be:

“Like a helicopter that never lands.”

The volume of noise was variable. Landholders stated that the volume of noise depended on various weather-related events, such as whether it was still or windy or cloudy. One landholder noted that the noise seemed louder in the lead-up to noise monitoring occurring on their property and quieter during periods when the noise monitoring was occurring. This landholder thought this was deliberate. One other landholder mentioned similar experiences but thought it a coincidence.

Also commonly mentioned was noise related to trains access to the site. Residents mentioned train-related noise was variable, seeming to depend on the skill/training of the drivers, as to whether they could slow down without excessive noise being generated as the wagons came to a stop.

Air Quality

Five nearby landholders reported experiencing air quality impacts, almost exclusively from coal dust. Landholders noted that they noticed coal dust in their homes, on their roofs, and in their drinking water filters. One landholder regularly washed off their roof to ensure rainwater did not wash coal dust into their rainwater tanks. Some landholders had water diverters provided by Narrabri Mine to reduce the coal dust entering rainwater tanks. One landholder stated that the amount of coal dust varied based on the speed and direction of wind.

Lighting

Two nearby landholders adjacent to the existing Narrabri Mine could see lights from the mine at night. For one of these landholders, lighting impacts were mainly not considered an issue, just a change to the normal darkness of the rural area.

However, lighting was an issue for one of the landholders. They suggested that it was like “looking down at Newcastle at night”.

Water (surface and ground water)

Two nearby landholders were concerned about water access and changing water patterns related to the existing operation. Some landholders believed they were directly affected by the existing operations, while other landholders thought it was a combination of factors in the area contributing to a change in access to overland water flow and underground water. The concerns related to how surface water flows over the existing Narrabri Mine site and on to their property, and how groundwater has been impacted by the existing operations (this concern was expressed by a landholder leasing land from NCOPL at the current site).

Odour

Four nearby landholders reported often experiencing odour associated with algae build-up in one of the dams, or ponds, on-site. They described the odour as a rotten smell. During discussions with these landholders, representatives from NCOPL explained that the smell is due to a build-up of algae in the pond, and a solution was being trialled to help reduce the frequency and severity of the odour. Most landholders thought the odour was an inconvenience and were satisfied that NCOPL was aware of the problem and looking to improve the issue.

4.5.4.4 Aboriginal groups discussions

Members of the Aboriginal groups that participated in engagement activities voiced concern about current site accessibility and measures to protect the cultural significance within the site. They suggested that these areas should be better fenced and have signage to warn people to protect the sites.

4.6 Aboriginal Culture and People

No areas or items of historical heritage were identified of relevance to the Project. Aboriginal cultural heritage items however were identified, and these are considered in detail in the Aboriginal Cultural Heritage Assessment (Whincop Archaeology Pty Ltd, 2020). This section includes a brief description of the Aboriginal cultural heritage values as well as analysis of the Aboriginal population within the area of social influence.

4.6.1 Aboriginal heritage values

The Aboriginal Cultural Heritage Assessment (Whincop Archaeology, 2020) notes that Aboriginal people of the Kamilaroi (or Gamilaraay) language group occupied the North West Slopes and Plains region at the time of European contact. The territory of the Kamilaroi extended from Singleton in the south to the Warrumbungle Mountains in the west and incorporated areas today associated with Quirindi, Tamworth, Narrabri, Boggabri, Walgett, Moree and Mungindi in northern NSW, as well as some parts of southern Queensland.

Europeans observed the Kamilaroi as hunter-fisher-gatherers who may have led semi-nomadic lifestyles. Aboriginal landscape management practices modified the landscape of the Namoi River valley to be more productive, while the Namoi River (located around 5km to the east of the project) and other streams and wetlands were also utilised for food. Extensive Aboriginal encampments near the Namoi River were a feature in drier months, while in cooler or wetter months, groups dispersed over plains and foothills.

Agricultural, forestry and pastoral uses have disturbed large portions of the area associated with the Project over the past 150 years which may have impacted the survival of Aboriginal cultural heritage sites.

A total of 60 Aboriginal cultural heritage sites are known to exist within the area associated with the Project. This includes 32 previously unidentified Aboriginal cultural heritage sites and 33 sites already registered on the AHIMS database at the time of field surveys, with one of the previously unidentified sites incorporating 5 previously recorded artefacts sites (i.e. the five previously identified sites were combined with a larger artefact scatter). 36 surface artefact scatters, 22 isolated surface artefacts and two grinding groove sites were identified.

None of the identified Aboriginal cultural heritage sites would be directly impacted by surface disturbance due to the Project. A single site of moderate scientific significance would likely be subject to indirect impacts associated with subsidence.

4.6.2 Aboriginal people

There were notably higher proportions of Aboriginal and/or Torres Strait Islander people across all of the study areas except the Baan Baa and surrounds locality, where only a small number of people identified as Aboriginal and/or Torres Strait Islander people (8 people, making up 4.9% of the population) (Table 4-70). Areas included the Narrabri township (13.9%), Boggabri township (13.6%) and Gunnedah township (15.1%), and the broader local government areas being considered (12.2% for Narrabri LGA and 12.8% for Gunnedah LGA).

The neighbourhood in Narrabri township located to the west of the Narrabri High School, between the Namoi River and railway line, was an area with a higher proportion of Aboriginal and/or Torres Strait Islander people. In Gunnedah township a neighbourhood located to the west of the Gunnedah Golf Club had a higher proportion.

Table 4-70. Aboriginal population, Study areas, 2016

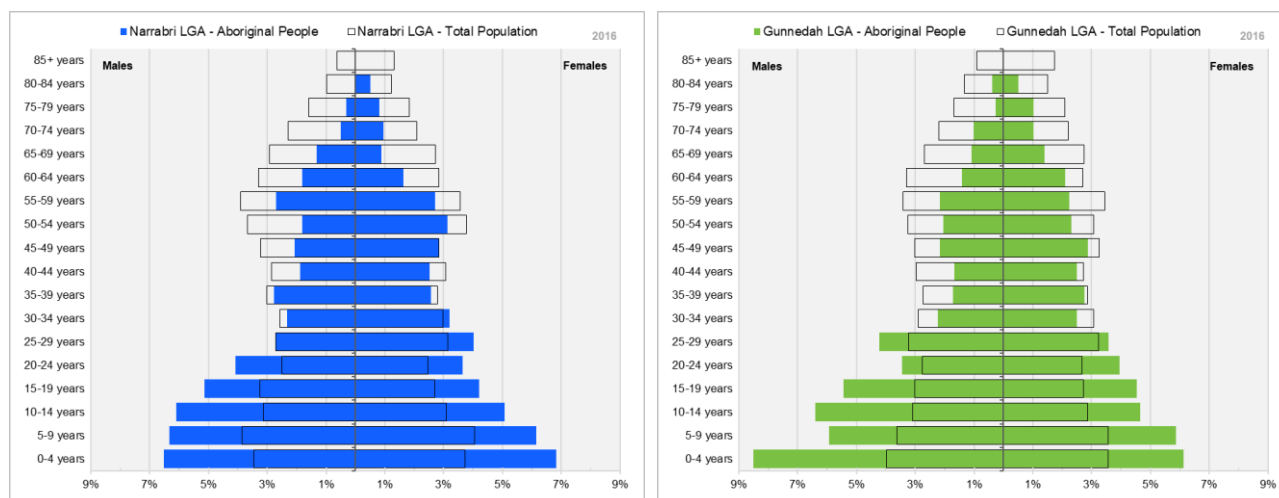
Area	2016
Baan Baa and surrounds	8 (4.9%)
Narrabri township	819 (13.9%)
Boggabri township	116 (13.6%)
Gunnedah township	1,204 (15.1%)
Narrabri LGA	1,591 (12.2%)
Gunnedah LGA	1,569 (12.8%)
Regional NSW	145,189 (5.5%)
NSW	216,171 (2.9%)

Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

The median age of Aboriginal and/or Torres Strait Islander people was 22 years in the Narrabri LGA and 21 years in the Gunnedah LGA in 2016 (ABS 2017 [Quickstats]). These median ages were well below the median age for the total population at 40 years for both the Narrabri LGA and Gunnedah LGA.

The age structure for Aboriginal and/or Torres Strait Islander people included considerably higher proportions of children and young adults (to 29 years of age), and lower proportions of adults and older adults, compared to the total population (Figure 4-42).

Figure 4-42. Aboriginal age structure, Study areas (LGAs), 2016

Note: Based on usual place of residence. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.6.3 Aboriginal employment and training

Aboriginal and/or Torres Strait Islander people had lower levels of workforce participation than the total population as well as lower participation levels in full-time work and higher proportions of people looking for work (Table 4-71). Some part of the differences between the Aboriginal and/or Torres Strait Islander population and the total population can be explained by the heavy skewing of the Aboriginal population towards younger people (including people between 15 and 24 years). However, after accounting for this difference, the Aboriginal and/or Torres Strait Islander population of the local areas still have lower rates of workforce participation and higher rates of unemployment.

There were around 100 Aboriginal and/or Torres Strait Islander people in each of the Narrabri LGA and Gunnedah LGA who were looking for work, with slightly higher numbers of men looking for work than women.

Table 4-71. Workforce participation and employment, Aboriginal people, Study areas (LGAs), 2016

Area	Looking for Work ¹			Full-Time Labour Force ²			Workforce Participation ³		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Narrabri LGA	53 (19.3%)	46 (18.5%)	97 (18.7%)	155 (56.6%)	87 (35.1%)	246 (47.4%)	274 (61.2%)	248 (48.4%)	519 (54.3%)
Gunnedah LGA	52 (18.3%)	40 (15.9%)	96 (17.5%)	176 (62.0%)	103 (40.9%)	285 (51.9%)	284 (64.8%)	252 (50.7%)	549 (58.1%)
Regional NSW	4,694 (18.5%)	3,748 (15.8%)	8,444 (17.2%)	14,034 (55.4%)	8,724 (36.8%)	22,760 (46.4%)	25,322 (56.9%)	23,697 (50.4%)	49,023 (53.6%)
NSW	6,540 (16.4%)	5,295 (14.2%)	11,831 (15.3%)	23,320 (58.6%)	15,052 (40.3%)	38,369 (49.7%)	39,808 (59.3%)	37,343 (52.6%)	77,145 (55.9%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon. 1. People looking for work as a proportion of the total workforce. 2. People employed full-time as a proportion of the total workforce. 3. People who are part of the workforce (including looking for work) as a proportion of the total population 15 years of age and older.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

Of all the employed Aboriginal and/or Torres Strait Islander people across both the Narrabri LGA and Gunnedah LGA, around 20% were employed as labourers, followed by around 17% as machinery operators and drivers, 15% as community and personal workers, and 13% as technicians and trades workers (Table 4-72). Compared to Regional NSW, higher proportions of Aboriginal and/or Torres Strait Islander people in both the Narrabri LGA and Gunnedah LGA were employed as machinery operators and drivers and lower proportions were employed as professionals.

Table 4-72. Occupation of residents, Aboriginal people, Study areas (LGAs), 2016

Occupation	Narrabri LGA	Gunnedah LGA	Regional NSW	NSW
Managers	23 (5.4%)	28 (6.3%)	2,654 (6.5%)	4,757 (7.3%)
Professionals	31 (7.3%)	32 (7.2%)	5,036 (12.4%)	8,803 (13.5%)
Technicians and Trades Workers	57 (13.4%)	59 (13.2%)	5,661 (14.0%)	9,017 (13.8%)
Community and Personal Service Workers	64 (15.0%)	68 (15.2%)	7,336 (18.1%)	11,168 (17.1%)
Clerical and Administrative Workers	40 (9.4%)	40 (8.9%)	4,447 (11.0%)	8,061 (12.3%)
Sales Workers	35 (8.2%)	36 (8.1%)	3,752 (9.2%)	5,997 (9.2%)
Machinery Operators and Drivers	70 (16.4%)	77 (17.2%)	3,570 (8.8%)	5,735 (8.8%)
Labourers	88 (20.7%)	91 (20.4%)	7,011 (17.3%)	9,909 (15.2%)
Inadequately described/Not stated	13 (3.1%)	20 (4.5%)	1,110 (2.7%)	1,866 (2.9%)
Total employed persons aged 15+	426 (100%)	447 (100%)	40,578 (100%)	65,316 (100%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

In the Narrabri LGA, Aboriginal and/or Torres Strait Islander people are employed in a range of industries, including health care and social assistance (12.7%), agriculture, forestry and fishing (10.8%), retail trade (8.2%), construction (7.7%), and accommodation and food services (7.3%) as the top five industries of employment (Table 4-73). Compared to Regional NSW, higher proportions of Aboriginal and/or Torres Strait Islander people in the Narrabri LGA were employed in agriculture, forestry and fishing and mining, and lower proportions were employed in health care and social assistance, public administration and safety and manufacturing.

There was a slightly different mix of employment industries in the Gunnedah LGA, with Aboriginal and/or Torres Strait Islander people employed in health care and social assistance (14.1%), mining (11.0%), accommodation and food services (10.1%), retail trade (8.3%), and manufacturing (8.3%) as the top five industries. Compared to Regional NSW, higher proportions of Aboriginal and/or Torres Strait Islander people in the Gunnedah LGA were employed in mining and manufacturing, and lower proportions were employed in public administration and safety and construction.

In both Narrabri LGA and Gunnedah LGA, a relatively high proportion of Aboriginal and/or Torres Strait Islander people did not state their industry of employment or provided inadequate detail for this to be determined.

Higher proportions of Aboriginal and/or Torres Strait Islander people are employed in the mining industry in Narrabri LGA and Gunnedah LGA. Higher proportions of Aboriginal and/or Torres Strait Islander workers are employed in mining than the population overall in Narrabri LGA (6.6%, compared to 5.5% for the total population). However, in Gunnedah LGA, Aboriginal and/or Torres Strait Islander workers are underrepresented in mining compared to the total population (11.0%, compared to 13.7% for the total population).

Table 4-73. Industry of employment of residents, Aboriginal people, Study areas (LGAs), 2016

Industry	Narrabri LGA	Gunnedah LGA	Regional NSW	NSW
Agriculture, Forestry and Fishing	46 (10.8%)	19 (4.3%)	1,431 (3.5%)	1,573 (2.4%)
Mining	28 (6.6%)	49 (11.0%)	1,039 (2.6%)	1,127 (1.7%)
Manufacturing	8 (1.9%)	37 (8.3%)	2,074 (5.1%)	3,286 (5.0%)
Electricity, Gas, Water and Waste Services	12 (2.8%)	4 (0.9%)	481 (1.2%)	740 (1.1%)
Construction	33 (7.7%)	18 (4.0%)	3,601 (8.9%)	6,256 (9.6%)
Wholesale Trade	12 (2.8%)	11 (2.5%)	537 (1.3%)	1,073 (1.6%)
Retail Trade	35 (8.2%)	37 (8.3%)	3,909 (9.6%)	6,136 (9.4%)
Accommodation and Food Services	31 (7.3%)	45 (10.1%)	3,708 (9.1%)	5,509 (8.4%)
Transport, Postal and Warehousing	23 (5.4%)	20 (4.5%)	1,498 (3.7%)	3,015 (4.6%)
Information Media and Telecommunications	0 (0.0%)	0 (0.0%)	234 (0.6%)	652 (1.0%)
Financial and Insurance Services	3 (0.7%)	8 (1.8%)	464 (1.1%)	1,159 (1.8%)
Rental, Hiring and Real Estate Services	3 (0.7%)	3 (0.7%)	357 (0.9%)	675 (1.0%)
Professional, Scientific and Technical Services	10 (2.3%)	11 (2.5%)	861 (2.1%)	1,821 (2.8%)
Administrative and Support Services	23 (5.4%)	21 (4.7%)	1,667 (4.1%)	2,528 (3.9%)
Public Administration and Safety	22 (5.2%)	18 (4.0%)	3,568 (8.8%)	6,013 (9.2%)
Education and Training	29 (6.8%)	30 (6.7%)	3,905 (9.6%)	6,116 (9.4%)
Health Care and Social Assistance	54 (12.7%)	63 (14.1%)	6,779 (16.7%)	10,098 (15.5%)
Arts and Recreation Services	8 (1.9%)	6 (1.3%)	557 (1.4%)	1,106 (1.7%)
Other Services	12 (2.8%)	32 (7.2%)	1,602 (3.9%)	2,531 (3.9%)
Inadequately described/Not stated	39 (9.2%)	36 (8.1%)	2,320 (5.7%)	3,889 (6.0%)
Total employed persons aged 15+	426 (100%)	447 (100%)	40,578 (100%)	65,316 (100%)

Notes: Based on place of usual residence. Employed residents only. All census data has been 'confidentialised' using a randomised adjustment technique. Small numbers are most impacted by this technique and should not be relied upon.

Source: (Australian Bureau of Statistics, 2017b) [TableBuilder Pro];

4.6.4 NCOPL Aboriginal/Torres Strait Islander employees

According to information provided by NCOPL, Narrabri Mine employed 22 people who identified as being Aboriginal and five people who identified as being both Aboriginal and Torres Strait Islander people in 2018. At the time, there were a total of 298 employees of the Narrabri Mine, meaning these 27 employees made up a total of 9.1% of total employees. NCOPL employed approximately 35% of the Indigenous population of Narrabri LGA and Gunnedah LGA who were employed in the mining industry in 2016.

4.6.5 Engagement findings

4.6.5.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, a low proportion of local respondents to the community survey agreed or strongly agreed that local cultural and heritage values are respected (15.0%).

4.6.5.2 Council officer discussions

The NSC officers did not raise issues related to culture.

The GSC officers who participated in the engagement activities highlighted the high unemployment rate of Aboriginal people in the Gunnedah LGA, which they identified to be up to 17%.

4.6.5.3 Landholder discussions

Landholders did not raise issues relating to culture.

4.6.5.4 Aboriginal groups discussions

Members of Aboriginal groups voiced concerns over the current access to the Narrabri Mine site that impeded the ability to protect culturally sensitive areas. The reduced ability to access the site also impeded the ability to educate young people about plants and animals within the Project area.

It was also suggested that more needs to be done to protect identified cultural heritage sites on the Narrabri Mine site, including improved fencing.

4.7 Personal and Property Rights

4.7.1 Nearby properties

Properties that are adjacent to the existing Narrabri Mine and associated infrastructure, intersecting MLAs 1 and 2 or adjacent to MLAs 1 and 2 were identified as being of relevance to the social baseline. Thirty-three properties were identified and these are considered nearby landholders.

Nearby landholders were able to provide input into the SIA via a number of engagement activities:

- Community information session.
- Community survey.
- Face-to-face meetings.
- Website, email and phone number contact to NCOPL (see Section 3 for more information).

4.7.2 Engagement findings

4.7.2.1 Community survey

There were no question or comments from the community survey relating to personal and property rights.

4.7.2.2 Council officer discussions

The NSC and GSC officers did not raise issues relating to personal and property rights.

4.7.2.3 Landholder discussions

Three nearby landholders were concerned about the value of their properties. They thought that their properties had been devalued to some extent due to the proximity of their property to Narrabri Mine. This was usually because they were experiencing noise and other amenity impacts and thought that potential buyers would be discouraged.

One of the nearby landholders was trying to sell their property and thought that the existing mining operation was reducing interest in their property (the property had been on the market for a number of years). The landholders noted that they had bought another property prior to selling, and so were therefore paying two mortgages, a substantial impact on their livelihood.

Other landholders were concerned more generally about whether their property would be worth less when they were wanting to sell in the future.

4.7.2.4 Aboriginal groups discussions

Members of the Aboriginal groups did not raise issues relating to personal and property rights.

4.8 Decision-Making Systems

4.8.1 Engagement findings

4.8.1.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, a relatively high proportion of local respondents to the community survey agreed or strongly agreed that they feel empowered to have a say in the decisions that impact their life (34.1%), however a low proportion thought that community opinion is considered in decision-making (10.0%).

4.8.1.2 Council officer discussions

The NSC and GSC officers did not raise issues relating to decision-making systems.

4.8.1.3 Landholder discussions

Four landholders thought that they had a lack of agency in decisions made by Narrabri Mine. This was primarily due to a lack of communication and engagement about decisions before they are made.

For some of the landholders, discussions held for the SIA were the first time that anyone from NCOPL had sought them out for a direct conversation despite their proximity to the Narrabri Mine. The reported that this lack of communication had impacted their level of trust in NCOPL. For example, one landholder thought that the proponent had been misleading about their original plans for the mine and were always going to extend, but never provided this information to properties that might be impacted so they could plan their futures.

Landholders expressed unhappiness with the process for making complaints to NCOPL. Communication was often poor, with staff expecting landholders to know the name and details of what was making the noise or odour so it could be investigated. Landholders said that a satisfactory response was often not provided by NCOPL after a complaint was made. This created a sense that they were completely powerless in decision-making around how the mine operates to minimise impacts at their property. Most of the nearby landholders thought that communication could be improved from NCOPL.

One landholder felt that the CCC was not an adequate avenue of participating in a dialogue with NCOPL, as they thought many of the CCC members were conflicted by links to Narrabri Mine or NCOPL.

4.8.1.4 Aboriginal groups discussions

Members of the Aboriginal groups did not raise issues relating to decision-making systems.

4.9 Fears and Aspirations

4.9.1 Engagement findings

4.9.1.1 Community survey

A community survey was undertaken to gather data for the social baseline, impact identification and analysis. An overview of the survey methodology is provided in Section 3.3.1, a summary of the results of the community survey is provided in Section 3.4.1 and the full analysis is provided in Appendix B. This section summarises the results of the survey for the social baseline related to community impacts.

In this section, the results for local respondents are summarised. Local respondents stated their address was a location within the Narrabri LGA or Gunnedah LGA (the area of social influence), while non-local respondents stated their location was anywhere else in Australia.

Relative to other statements about the local community, a relatively low proportion of local respondents to the community survey agreed or strongly agreed that they feel confident about the future of their community (17.1%).

The NSC and GSC officers did not raise issues relating to fears and aspirations.

4.9.1.2 Landholder discussions

Four nearby landholders reported they were experiencing stress and anxiety due to uncertainty about whether their property would be acquired for a future mine extension. Some expected the Narrabri Mine would expand over time, necessitating further land acquisition, and were therefore unsure as to whether they should invest in their homes and businesses, given this expectation. Others mentioned a lack of long-term planning from NCOPL, and communication about these plans, which made decisions difficult.

Four nearby landholders were concerned about the value of their properties. One landholder felt “trapped” as they were trying to sell their property and they felt the level of interest in the property was low due to its proximity to Narrabri Mine. This was having a substantial impact on their finances due to them having already purchased another property elsewhere. The three other landholders expressed more general concerns about whether their property would be worth less when they wanted to sell in the future.

4.9.1.3 Aboriginal groups discussions

Members of the Aboriginal groups that participated in engagement activities reported that current Aboriginal employees at the Narrabri Mine had experienced discrimination and verbal abuse within the workplace. This detracted from the work being done by the proponent to encourage Aboriginal people to work at the Narrabri Mine. As noted, any form of harassment, bullying, discrimination or victimisation is not tolerated at NCOPL and all complaints will be taken seriously (as outlined in the Whitehaven Employee Code of Conduct). These types of experiences should therefore be dealt with appropriately by Whitehaven if brought to the attention of staff.

4.10 Summary of Social Baseline

The data relied upon in this summary, including engagement findings, have a range of limitations that should be considered when reading this summary. The limitations for each dataset are included in the individual baseline sections and have not been repeated here. Please refer to the relevant section.

Summary of Social Baseline

- **Employment: Sense of place (Section 4.1.6):** Residents of Narrabri regarded agriculture, rural characteristics, community cohesion and economic diversity as key elements of their sense of place according to background research. Local respondents to the community survey undertaken for the SIA considered the rural and agricultural character of the area as an integral part of the sense of place, especially in contrast to mining. The majority of local survey respondents thought that the nature of the area was changing with more mining activity, and some local respondents thought that this change was negatively impacting community cohesion. They also mostly expressed a lack of confidence about the future of their community that may have been related to these trends.
- **Community cohesion (Section 4.1.7):** Community cohesion was identified as an issue in Narrabri township particularly, but in other parts of the area of social influence as well. This was identified from background literature as well as from the community and stakeholder engagement findings. It was suggested that community cohesion was being impacted by income inequalities brought about by higher paying jobs in the mining and CSG industry as well as the sense of place that some residents hold of Narrabri as an agricultural place that is being threatened by mining and CSG activity. CSG and coal mining were mentioned often with regard to community cohesion, and therefore it is difficult to determine the extent to which coal mining alone is contributing to disharmony.
- **Housing affordability (Section 4.2.2):** The median sale price of houses has increased substantially in the Gunnedah LGA between 2000 and 2019, and to a lesser extent in the Narrabri LGA. Increased demand due to mining activity and the higher incomes of mine workers may have contributed to median price increases during this period. The affordability and availability of housing was raised as an issue for low income households in both the Narrabri LGA (Narrabri and Boggabri townships) and the Gunnedah LGA.
- **Employment (Section 4.2.4):** Narrabri Mine employed 270 people according to data provided by NCOPL from November 2019, as well as around 250 full-time equivalent contractors in the twelve months to November 2019. The mining industry contributed to the economic diversity of the Narrabri LGA and Gunnedah LGA (providing jobs for around 5% of workers in the Narrabri LGA and 14% of workers in the Gunnedah LGA), which is important in times of drought when the agricultural sector is challenged. However, the unemployment rates in the Narrabri LGA and Gunnedah LGA were still slightly above the Regional NSW average in 2019, and the unemployment rate for Aboriginal and/or Torres Strait Islander people in 2016 was much higher than for non-Indigenous people. Although the mine contributes to employment and economic diversity in the area of social influence, opportunities to improve training and employment at Narrabri Mine were raised by stakeholders, including through improved access to training and employment and career pathways for Aboriginal people.
- **Key Health Issues (Section 4.3.1):** The Narrabri LGA and Gunnedah LGA had high rates of emergency department presentations compared to NSW. The rates of hospital admissions were high for endocrine, nutritional and metabolic diseases in the Narrabri LGA and respiratory system diseases in both Narrabri LGA and Gunnedah LGA. These higher rates may be related to lifestyle-related health issues such as unhealthy eating, lack of exercise, alcohol consumption, smoking and/or potential air quality issues. The higher Aboriginal and/or Torres Strait Islander population in the social area of influence may also impact these rates (12% in the Narrabri LGA and 13% in the Gunnedah LGA, compared to 3% in NSW).

- **Crime (Section 4.3.3):** Rates of major crime have been decreasing in the Narrabri LGA and Gunnedah LGA over the past 17 years, however are decreasing slower than NSW, meaning that the rates were higher than NSW over the last 17 years. Alcohol-related crime was higher in the Narrabri LGA and Gunnedah LGA than in NSW as a whole, including for both non-domestic violence and domestic violence related assault. Estimated alcohol intake was high in both the Narrabri LGA and Gunnedah LGA with more than 20% of residents over 15 years of age consuming two or more standard alcoholic drinks per day on average.
- **Social infrastructure (Section 4.4):** A range of social infrastructure was identified in the audit for Narrabri LGA and Gunnedah LGA, with the Baan Baa Community Hall being the only facility in close proximity to the Narrabri Mine. The facility provides an important meeting place for the local Baan Baa community and surrounding rural properties. As a whole, the provision of community, health and emergency services were highly rated by local survey respondents. A quantitative analysis undertaken of theoretical need for childcare places suggested that the provision of places was appropriate, however, engagement suggested that additional childcare services may be needed in Gunnedah (and in Boggabri).
- **Existing amenity impacts (noise) (Section 4.5.3):** Nearby landholders said they had experienced noise impacts from surface machinery, the main ventilation shaft and coal trains. Nearby landholders expressed different levels of noise impacts, with more distant landholders describing the noise as only a nuisance, and those closer to the noise sources describing noise that impacted their quality of life. Even for these closer landholders, the noise level was variable, however, they noted instances where noise had interrupted their sleep or made falling asleep difficult. Noise was also the most common cause of complaints to NCOPL between 2015 and 2019.
- **Existing amenity impacts (air quality) (Section 4.5.3):** Nearby landholders said they had experienced issues with coal dust, including needing to wash roofs to reduce runoff into rainwater tanks and needing to clean interiors more regularly. Nearby landholders also said that they had found coal dust in their water filters and worried about the health impacts of drinking and breathing in coal dust. Coal dust was one of the main causes of complaints to NCOPL between 2015 and 2019.
- **Droughts and water access (Section 4.5.3):** Stakeholders who participated in engagement, local respondents to the community survey, landholders and council officers, raised concerns with the use of water by the mining industry. This added to stress and anxiety around water availability, along with drought conditions that were occurring in the area. In contrast, others recognised the importance of mining employment to help ensure the economy was diverse and resilient to drought.
- **Aboriginal values (Section 4.6):** Around 12% of the population of the Narrabri LGA and Gunnedah LGA were Aboriginal and/or Torres Strait Islander people, which was a high proportion compared to other areas of NSW. Indigenous people made up a slightly lower proportion of the Narrabri Mine workforce, at 9%, however are well represented in the mining industry overall. Local survey respondents noted a general disrespect towards the Aboriginal and/or Torres Strait community, while members of Aboriginal groups who took part in engagement thought that high unemployment rates were a key issue leading to social disadvantage for Aboriginal people. They also expressed concern around a lack of affordable housing in Narrabri and concerns about inadequate fencing of culturally significant sites at the Narrabri Mine.
- **Fear and anxiety (Section 4.9):** Nearby landholders reportedly experienced stress and anxiety about the lack of certainty over their long-term land tenure, as many landholders expected that the Narrabri Mine would be extended and their properties acquired. Given this, they were uncertain as to whether they should invest in their homes and businesses, but were not able to plan for either eventuality given the uncertainty. Nearby landholders also expressed fear and anxiety around the value of their properties and the ability to sell their properties when they wanted to, given the noise and air quality impacts.

Section 5 Social Impacts Identification and Significance Assessment

5.1 Explanation of Method

This section assesses the likely social impacts and benefits of the Project proceeding. The method utilised to identify and assess the significance of social impacts for the Project closely follows the process outlined in the SIA Guideline (NSW Department of Planning and Environment, 2017b). The process undertaken included:

1. Identifying and clearly articulating the impact, including the parties affected and timing.
2. Assessing consequence, based on consideration of the extent, duration and severity of the impact and the sensitivity of the affected party.
3. Assessing likelihood of the impact occurring.
4. Utilising a risk assessment model to determine overall significance of each impact.

Each of these elements of the process is described in more detail below.

5.1.1 Identifying impact

Describing the social impacts of the Project involved identifying potential changes to the social baseline, including changes to trends that were already evident at the time of the analysis. The Narrabri Mine is an existing mine approved to operate until 2031. Therefore, the Narrabri Mine (to 2031) is part of the existing social baseline. The proposed mine life extension to 2044 and the geographic extension to the south of the existing mine, however, are not part of the social baseline.

There are two main changes associated with the Project that are assessed in the SIA:

- Continuation of current impacts for extended period. The Project involves a 13-year extension to the mine life of the existing Narrabri Mine operation, from 2031 to 2044. The existing operation would continue with no change to the maximum production rate, main surface infrastructure, main entry/exit access, train frequency, etc. Mine closure would still occur; however, the Project would result in delay of mine closure (and the resultant employment impacts) for a 13-year period.
- Extension of the mining operation to the south of the existing Narrabri Mine. The Project involves an extension to the south of the approved underground mining area and development of supporting surface infrastructure (as outlined in Section 2.1), such as mine ventilation, access tracks, gas management and other infrastructure. All surface infrastructure would be located on land that will be acquired for the Project (some properties have been acquired recently in preparation).

Note that, as the Project involves an extension to the mine life of the Narrabri Mine, closure and post-closure impacts have already been evaluated and managed in previous approvals and the approved closure plan and are not considered in this SIA. The approved closure plan remains valid.

Social impacts were identified based on engagement findings, impacts identified from other similar projects and other studies supporting the EIS, as well as quantitative and qualitative research methods undertaken for this Project. Quantitative analysis involved a detailed description of the social baseline based on a range of measures and indicators to provide a clear understanding of current data and trends. Quantitative data was also gathered from an online community survey undertaken for the Project. Qualitative research included primary research undertaken for the SIA, including an online community survey, engagement with local governments, and discussions with nearby landholders. Literature was also drawn on to gather an understanding of current values and aspirations.

For each social impact identified, the likely affected party and timing (project stage) was also identified. Each impact is also labelled to assist with tracking numbers through the impact identification and analysis (Section 5.1.5), significance assessment (Section 5.3), and residual significance assessment (Section 6.5).

5.1.1.1 Potentially affected parties

Potentially affected parties were identified for each social impact, including directly and indirectly affected parties, as well as parties that may be cumulatively impacted. Particular attention was given to vulnerable groups within affected parties, for example, low income households within the community.

For the impact assessment, the following potentially affected parties were defined:

- Neighbouring Landholders: Landholders whose properties are within or adjacent to the Project, including:
 - those currently experiencing impacts due to the existing Narrabri Mine, and impacts would be generally unchanged by the Project; and
 - those who may experience new or increased levels of impact.
- Nearby Local Rural Community: The community within 5 km of the Narrabri Mine and/or the Project.
- Community within the Area of Social Influence: The Narrabri LGA and Gunnedah LGA communities, combined.
- Local Aboriginal Groups.
- Local Businesses: Businesses operating in the Narrabri LGA and Gunnedah LGA communities, combined.
- NSC and GSC.
- International Community.

5.1.1.2 Timing

The expected timing of each potential social impact was aligned with the phases of the Project, such as planning, development, operation, closure and post-closure. Development of supporting surface infrastructure required for the Project would be undertaken over multiple short construction periods over the remainder of the mine life. Accordingly, there is no discernable difference between construction and operational phases of the Project from a social impact perspective. Therefore, in the SIA, these phases will be referred to only as the operation phase.

The phases of the Project assessed by the SIA are:

- Planning: Project planning commenced in 2018 and will continue up until mine development for southern longwalls (amended by the Project) starts being installed in 2022.
- Operation: Project operation would commence when mine development for southern longwalls (amended by the Project) starts being installed in 2022, continuing until Project closure in 2044.

5.1.2 Assessing consequence

The consequence of each potential social impact was assessed as minimal, minor, moderate, major or catastrophic/substantial in accordance with the SIA Guideline. When determining the consequence of a potential impact, four elements were considered:

- Extent: The geographical area affected by the impact or the number or proportion of the population impacted.
- Duration: The timeframe over which the impact would be likely to occur.
- Severity/Scale: The severity, scale or degree of change from the baseline condition or trend as a result of an impact.
- Sensitivity: The susceptibility or vulnerability of impacted people, communities or economies to adverse changes caused by the impact, or the importance placed on the matter being impacted, for example:
 - Vulnerability of people, communities or economies.
 - Resilience to change or the capacity of people, communities or economies to adapt.
 - Uniqueness, rarity, value or importance of the matter to people or communities.

As noted in the SIA Guideline, the definition of each of the consequence categories listed above should be relevant to the impact. Definitions have been developed for each of these consequence elements to guide categorisation of impacts compared to the social baseline (Table 5-1):

- Geographic Extent: Derived from analysis of different study areas and the outcomes of consultation identifying current impacts of the existing mine (positive or negative).
- Population Impacted: Populations relative to the various study areas as above.
- Duration/Frequency: Derived from understanding of the nature of current impacts of the existing mine (positive or negative).
- Severity/Scale: The likely change to the baseline given current operations.
- Sensitivity: Vulnerability or resilience from demographic baseline analysis comparing population indicators with Regional NSW averages.

Table 5-1. Consequence definitions by element

Consequence Element	Consequence definitions				
	Low	Medium Low	Moderate	Medium High	High
Extent – geographic extent OR population impacted	Site and adjacent neighbours within approximately 1 km of the Project.	Surrounding neighbours and Baan Baa within approximately 5 km of the Project.	Within approximately 20 km of the Project including most of Narrabri LGA.	Within approximately 100 km of the Project including all the area of social influence.	NSW, national or international scale.
	<5% of Narrabri/Gunnedah LGA population impacted.	5-10% of Narrabri/Gunnedah LGA population impacted.	50% of Narrabri/Gunnedah LGA population impacted.	100% of Narrabri/Gunnedah LGA population impacted.	Population of larger region impacted.
Duration/ Frequency	Temporary or occurs rarely as an intermittent event.	Short-term (1-5 years) or occurs intermittently every 1-5 years.	Within the life of the Project (approx. 10-15 years) or occurs irregularly each year (1-2 times per year).	Life of the Project (approx. 25 years) or occurs regularly each year (6-12 times per year).	Permanent impact or occurs regularly each year (>12 times per year).
Severity/Scale	No change to existing baseline condition including existing trends.	Negligible change to existing baseline condition including existing trends.	Minor change to existing baseline condition including existing trends.	Major change to existing baseline condition including existing trends.	Significant change to existing baseline condition including existing trends.
Sensitivity of impacted group – Relative vulnerability OR resilience/ adaptability	Similar or lower vulnerability to Regional NSW average.	→	Higher vulnerability than Regional NSW average.	→	Significantly higher vulnerability than Regional NSW average.
	Similar or higher ability to adapt to Regional NSW average.	→	Lower ability to adapt than Regional NSW average.	→	Significantly lower ability to adapt than Regional NSW average.

These consequence elements are combined into a single category of overall consequence as below (Table 5-2).

Table 5-2. Consequence definitions

Overall Consequence	Consequence Definitions				
	Minimal	Minor	Moderate	Major	Catastrophic
Consequence	<div> <div>Temporary impacts with no change to social baseline or change limited to a few local people who are not vulnerable, or have low vulnerability.</div> <div>→</div> <div>Permanent impacts with significant change to social baseline affecting many people across a large area that are highly vulnerable.</div> </div>				

5.1.3 Assessing likelihood

The likelihood of each potential social impact was determined to be rare, unlikely, possible, likely or almost certain in accordance with the SIA Guideline. The measures of likelihood used in the assessment are included below (Table 5-3). They are derived from understanding of the nature of current impacts of the existing mine (positive or negative) and impacts experienced in similar projects. The assessment of likelihood applied the precautionary principle where information was unknown, resulting in categorising negative impacts as more likely and positive impacts as less likely, to conservatively estimate the resulting impacts of the Project.

Table 5-3. Likelihood definitions by social impact types

Likelihood Element	Likelihood Definitions				
	Rare	Unlikely	Possible	Likely	Almost Certain
Chance	In the order of 0-5% chance of occurring	In the order of 10-30% chance of occurring	In the order of 40-60% chance of occurring	In the order of 60-80% chance of occurring	In the order of 95-100% chance of occurring
Occurrence on similar projects	Never experienced in similar projects	Almost never occurs in similar projects	Occurs sometimes in similar projects	Occurs consistently in similar projects	Occurs consistently in all similar projects

5.1.4 Determining significance

The significance of each social impact was then determined by combining the assessment of consequence and likelihood of the impact, based on the matrices below (Figure 5-1). The SIA Guideline provides a matrix for negative impacts only, and this matrix is used with minor adjustments to the terms used (extreme significance adjusted to very high significance). For positive impacts, the same matrix is utilised with minor adjustments to the terms used (catastrophic consequence adjusted to substantial consequence). The significance matrix provided in the SIA Guideline, and utilised in this report, is similar to international best practice (International Association for Impact Assessment, 2015). Other SIAs may utilise a different significance matrix and, therefore, impacts of low, moderate, high and very high significance may be classified differently (likely as having lower significance) and are not directly comparable.

Figure 5-1. Significance matrices for negative and positive impacts

Negative Impacts		Consequence				
Likelihood	Almost Certain	Minimal	Minor	Moderate	Major	Catastrophic
	Likely	A1	A2	A3	A4	A5
	Possible	B1	B2	B3	B4	B5
	Unlikely	C1	C2	C3	C4	C5
	Rare	D1	D2	D3	D4	D5
		E1	E2	E3	E4	E5
		Low	Moderate	High	Very High	

Positive Impacts		Consequence				
Likelihood	Almost Certain	Minimal	Minor	Moderate	Major	Substantial
	Likely	A1	A2	A3	A4	A5
	Possible	B1	B2	B3	B4	B5
	Unlikely	C1	C2	C3	C4	C5
	Rare	D1	D2	D3	D4	D5
		E1	E2	E3	E4	E5
		Low	Moderate	High	Very High	

Source: Adapted from SIA Guideline

5.1.5 Social Impacts Considered in other Assessments

Stakeholders raised some concerns with associated potential social impacts that were assessed by subject matter experts. To avoid duplication these issues are not reassessed in this SIA. These impacts are summarised below, and a rationale provided for not also including these as social impacts (Table 5-4).

Table 5-4. Concerns considered in other assessments

Concern with Potential Social Impact	Assessment	Comment
Groundwater and surface water impacts to surrounding landholders.	Surface Water Assessment (WRM, 2020) Groundwater Impact Assessment (Australasian Groundwater and Environmental Consultants, 2020)	Concern about groundwater and surface water impacts was the most frequently raised issue from stakeholders involved in engagement. Groundwater and surface water impacts were investigated fully in separate studies undertaken by subject matter experts and therefore have not been reassessed in the SIA. Stress and anxiety related to water availability concerns were assessed in the SIA.
Significant amenity impacts related to noise, air quality, lights and odour to surrounding landholders.	Noise and Blasting Assessment (Wilkinson Murray, 2020) Air Quality and Greenhouse Gas Assessment (Jacobs, 2020)	Significant amenity impacts were investigated in studies undertaken by subject matter experts. No air quality exceedances of recommended thresholds were noted and a limited number of noise exceedances were noted. The SIA has assessed impacts that are generally considered less significant in these assessments but still impact the quality of life of nearby landholders.

Concern with Potential Social Impact	Assessment	Comment
Greenhouse gas emissions and their impact on the environment and society generally.	Air Quality and Greenhouse Gas Assessment (Jacobs, 2020)	The SIA has included some assessment of the global social implications of climate change at a high level, drawing on greenhouse gas emissions assessment undertaken by subject matter experts. The full assessment of greenhouse gas emissions is provided separately.
Impacts on nearby natural areas.	Biodiversity Development Assessment Report (Resource Strategies, 2020)	Impacts related to nearby natural areas were considered by subject matter experts. There were no findings suggesting social impacts related to these impacts.
Subsidence impacting long-term agricultural viability and surface water access.	Surface Water Assessment (WRM, 2020) Agricultural Impact Statement (2rog Consulting, 2020)	Impacts related to subsidence were considered by subject matter experts. There were no findings suggesting social impacts related to these impacts.
Appropriate fencing of Aboriginal cultural heritage sites to protect the site and discourage unauthorised visitation.	Aboriginal Cultural Heritage Assessment (Whincop Archaeology Pty Ltd, 2020)	Appropriate fencing of Aboriginal cultural heritage sites was a recommended management measure identified in this assessment which would address the concern expressed in engagement activities undertaken for the SIA.

5.2 Social Impact Identification and Analysis

5.2.1 Community

5.2.1.1 Population and community composition

Population growth and community composition change (Impact Comm-1)

The Project would involve no change to the existing maximum operational workforce at the Narrabri Mine. An estimated additional 20 full-time equivalent (FTE) workers would be required during development of the Project, which would likely be on a contractual basis (as outlined in Section 2.1.2).

Short-term employment increases during peak development activities

Given the nature of contract work, the additional development employment associated with the Project would be unlikely to result in any significant change to population. Project management measures will preference local employment whenever skills are available. It is highly unlikely that construction workers employed from outside the Narrabri LGA and Gunnedah LGA would decide to move to the local area given this work is temporary and sporadic. This assessment is supported by current Narrabri Mine data. In 2019, 41.5% of contractors to the Narrabri Mine lived in the Narrabri LGA or Gunnedah LGA (compared to 76.0% of employees) (see Section 4.2.4.5), however not all of these contractors moved to the area due to their employment at Narrabri Mine; rather it is likely that many were based in the local area already.

Applying the precautionary principle, a scenario can be developed to provide some sensitivity testing of this conclusion. If it was assumed that the current proportion of locally employed mine contractors were attracted to move to the local area of the 20 additional contractors (FTE) required for the Project, fewer than eight additional workers could move to the local area. Assuming an average household size of 2.5 people (the average for Narrabri LGA and Gunnedah LGA), this would result in overall population growth of fewer than 20 people, which is less than 0.1% of the estimated resident population of the area of social influence in 2016 (being the combined Narrabri LGA and Gunnedah LGA). This scale of growth is unlikely to result in any noticeable change to the community composition of this area.

Operational workforce

The Project would involve no change to the maximum operational workforce at the Narrabri Mine. Given that the Project consists of an extension of mining activities from 2031 to 2044, an additional 13 years, some current employees of the mine who lived outside the area of social influence may decide to relocate. Instead of their employment ending in approximately 11 years (from now), this would be extended to approximately 24 years, which would represent a life-long career for many workers. The extension may encourage some employees to view their job as more of a long-term prospect and consider moving with their household into the local area.

In 2019, 53 Narrabri Mine workers lived in Queensland or in parts of NSW outside of Narrabri LGA, Gunnedah LGA, Tamworth LGA and Gwydir LGA (see Section 4.2.4.5). If a small proportion of these workers were to move to Narrabri LGA with their families, this could result in some, albeit minimal, population growth. A scenario was developed to estimate the potential population growth associated with any change. The base data, assumptions and outputs are summarised below:

- In 2019, 53 Narrabri Mine workers lived in Queensland or in parts of NSW outside of Narrabri LGA, Gunnedah LGA, Tamworth LGA and Gwydir LGA. From experience with other resource projects, it is considered unlikely that more than 30% of these workers could decide to move to the Narrabri LGA given the Project life extension. It was considered unlikely that a higher proportion of workers would be persuaded to move only on the basis of the extension of mine life, as they would have chosen their current place of residence based on a range of factors including, for example, access to education if they have families. Given this assumption, approximately 16 currently employed workers may decide to move to the local area.
- A proportion of these workers may move with their family, although some could be single³. An average household size of 2.5 people could be used to estimate the total population change (the average for Narrabri LGA and Gunnedah LGA). Given this assumption, the population may increase by 40 people in total.

Given the uncertainty around this scenario eventuating, it is more appropriate to assume the population increase would be somewhere between a continuation of the existing baseline situation (with no population growth associated with the Project) and this scenario (an increase of 40 residents due to the extension of the mining period associated with Project).

Regardless, the impacts of any outcome within this band of potential population increase would be minimal. An increase of 40 residents would be equivalent to a population growth of around 0.2% of the estimated resident population of the area of social influence in 2016. Any impact would be further minimised given the population is likely to move into larger centres such as Narrabri or Gunnedah township (as is currently the case with workers at the Narrabri Mine).

Impact on population and community composition

The estimated resident population of the Narrabri LGA declined between 2001 and 2008, but was relatively stable between 2008 and 2017. The estimated resident population of the Gunnedah LGA declined between 2001 and 2006, however has since grown. The stabilisation and growth of the total population in these areas seems to have aligned with the start of resource activity in the area of social influence, as demonstrated in the social baseline section (see Section 4.1.2). Resource-related development has contributed to arresting population decline in the area of social influence, a decline that would have negative implications for community composition, livelihoods and access to services.

However, the trends driving this decline remain present outside the resource sector. The latest NSW Government population projections suggest that the population of Narrabri LGA will decline at an average annual rate of 0.3% between 2016 and 2041, while the population of Gunnedah LGA is expected to increase only slightly during this period (by around 124 people) (see Section 4.1.2). The retention of the mine and its workforce for an additional 13 years is beneficial in this context. The additional small population increase of up to an additional 40 residents associated with the operational workforce would also potentially contribute to population stabilisation and growth in the area of social influence, and positively impact livelihoods and the viability of services.

³ If these workers have a similar household mix to the Narrabri and Gunnedah LGA, this would mean 30% are lone person households, 35% are couples, and 35% are couples with children. No information was available on the age or household mix of existing employees.

The potential population increase would also have very minimal impact to the overall community composition of the area of social influence. Any incoming residents would likely have a similar household makeup to the existing population. The incoming residents would likely include a mix of singles, couples and families. Regardless, even if all those currently employed who were enticed to relocate were single, young males, it would be only 16 men. This would not be enough additional residents to impact the overall community composition of the area of social influence.

It is noted that if the Project is not approved, the mine would cease to operate in 2031. Around 250 households could leave the area if suitable work is not found (assuming 76% of current 2020 workforce of 337 employees live within the area of social influence). This would contribute further to weak population growth or population decline.

Cumulative impacts

The NSW Government population projections referenced in the previous section are unlikely to fully consider proposed major projects in the area of social influence. These need to be considered as they may cumulatively change the baseline trends. An analysis of nearby major projects was provided in the social baseline (see Section 4.5.2), and it was noted that there is unlikely to be any overlap in the peak construction periods of the identified major projects with the mine life extension for the Project (Figure 4-41).

The smaller, ongoing construction and operational cumulative workforces of around 820 workers would overlap with the extension period of the Project. The majority of these 820 workers are expected to work as part of the Narrabri Gas Project (145 ongoing construction workers and 200 operational workers) and Vickery Extension Project (450 operational workers). At the time of consultation for this SIA, the Vickery Extension Project EIS and the Narrabri Gas Project EIS were being assessed. The Vickery Extension Project and Narrabri Gas Project were approved during finalisation of this SIA.

Of the ongoing construction and operational workers required for the Narrabri Gas Project, only 140 workers were expected to reside within the area of social influence according to the SIA submitted for that project (GHD, 2016). These 140 local workers were expected to include 50 workers sourced from outside the area who relocate to Narrabri township. GHD (2016) predicts that the resultant overall population growth in the area of social influence would be 130 residents.

Of the operational workers required for the Vickery Extension Project, a large majority were expected to ultimately reside within the area of social influence. However, 70% of operational workers were expected to be existing residents of the area (315 workers) and 30% were expected to move into Narrabri township bringing family members with them (135 workers) (Elliott Whiteing, 2018). The SIA submitted for that project, noted that this would result in a total population growth of around 308 new residents within the Narrabri LGA and Gunnedah LGA (182 new residents for Gunnedah township, 71 new residents for Boggabri, 44 new residents for Narrabri and 11 new residents for elsewhere in the region⁴).

Cumulatively, these two projects (if both approved), combined with this Project, may contribute to population growth of 478 people (130 people for the Narrabri Gas Project, 308 people for Vickery Extension Project and 40 people for the Project). As noted in the SIA reports for these projects, this population would be spread across the area of social influence and would represent population growth of around 1.9% of the estimated resident population of this area in 2016.

As with other resource projects in the area of social influence over the past 15 years, proposed major projects may assist to arrest the trend of declining population in the area of social influence and contribute to a small net increase in population. This would likely have limited negative impact on the local community in terms of stress on existing services (and may not encourage growth to the provision of new services or amenities), but may beneficially support the ongoing viability of livelihoods and existing service provision, and help to offset ageing trends by attracting and retaining younger people (as considered further below).

⁴ Excludes 30 new residents expected in Manilla, outside the area of social influence for the Project.

Young adult retention (Impact Comm-2)

The young adult population (15 to 34 years) declined slightly in Narrabri LGA from around 3,450 people in 2001 to 2,900 people in 2016; a decline of around 550 people over 15 years (see Section 4.1.2). However, the young adult population of Gunnedah LGA increased from around 2,650 people to 2,900 people during the same period; an increase of around 200 people.

NSW Government population projections predict that the young adult population (15 to 34 years) will decline in Narrabri LGA and Gunnedah LGA between 2016 and 2041 (see Section 4.1.2). For Narrabri LGA, the number of young adults is expected to decline by around 360 people (from 23.0% to 21.7% of the total population). For Gunnedah LGA, the decline is greater; the number of young adults is expected to decline by around 540 people (from 24.7% to 20.2% of the total population).

The outflow of young adults from Narrabri LGA since 2011 has been identified by Council as an issue impacting economic growth (Narrabri Shire Council, 2007b). Its reversal was a key strategic objective, with attracting and retaining labour seen as key to retaining young people and promoting population growth. Council sought to support this through improved education opportunities and quality of life enhancements.

The Project would support this strategic objective, contributing to ongoing training and employment opportunities in the area of social influence for an additional 13-year period and offering a long-term career option for local residents. Without this opportunity, it is likely that a higher number of young adult residents would move away from the area, in line with NSW Government projections. The Project would therefore help to sustain the youth population due to the proposed mine life extension.

Whilst it is noted that some employment at the existing Narrabri Mine requires qualifications that are not obtainable within the area of social influence (see Section 4.4.1.3), this employment provides the opportunity for young people to return to their hometown once these qualifications are obtained.

However, around 100 positions have been created since 2017 at the Narrabri Mine for people that do not require pre-existing training or qualification. Training is provided on-site to qualify these staff to obtain a Certificate III in Underground Mining. As an avenue for young people to stay in the local area while they undertake training, this program is expected to continue for the Project.

Cumulative impacts

As noted in the previous section, other proposed major projects will, if approved, support the retention and attraction of young adults by providing opportunities for stable, rewarding, long-term careers in the area of social influence.

However, the total number of additional jobs made available to local young people cumulatively provided by the two largest proposed projects, the Narrabri Gas Project and Vickery Extension Project, would not be enough to arrest the expected decline in the number of young adults to 2041. The two largest proposed projects are expected to employ 490 additional local workers (in total) compared to a decline of around 900 young people between 2016 and 2041 (total of 40 workers for the Narrabri Gas Project [plus an unknown number of ongoing construction workers who are unlikely to be local given the required skill levels], and total of 450 workers for the Vickery Extension Project). The actual jobs available to unqualified local young people would be fewer.

This would also be the case even if all the workers expected to be attracted to the local area were also young adults. The two largest proposed projects, combined with the Project, are expected to attract a total of 201 additional workers (50 workers for the Narrabri Gas Project, 135 workers for the Vickery Extension Project and 16 workers for the Project). This would result in 691 new jobs in total compared to a decline of around 900 young adults between 2016 and 2041. The actual jobs available to unqualified local young people would be fewer.

Together, these projects may contribute to lessening the expected decline of young adult numbers by a small amount, however, this will not fully address the expected decline in the number of young people. The multiplier effect of associated population growth may support employment growth in other industries and may also provide training and employment opportunities for young adults, aiding their retention.

Imbalanced gender profile (Impact Comm-3)

One respondent to the community survey suggested that the Project would contribute to an increase in male-dominated mining culture in the community. This issue was not raised by other stakeholders during other engagement activities.

Despite being an issue only raised by one individual, this issue has arisen due to other resource projects elsewhere and is considered in this SIA. Data presented in the social baseline on the current mix of males and females within the area of social influence suggests there is no demographic or gender imbalance present in Narrabri LGA and Gunnedah LGA overall in 2016 (see Section 4.1.2), nor in each of Narrabri township and Gunnedah township. There was however a slightly higher proportion of male residents in Boggabri township (50.7% males, compared to 49.6% females) and a higher proportion of males in Baan Baa village and surrounds (55.2% males, compared to 46.0%). However, it should be noted that the population of Baan Baa village and surrounds was just 163 people, so males outnumber females by just 15 people. Being close to the Narrabri Mine and other mines in the area, it is understandable that some mine workers would choose to live in Baan Baa and surrounds. This is a minor impact of current mining operations, unaffected by the proposed extension. Further, the social baseline review has not indicated that there is any incidence of violence or disruption in Baan Baa village which is beyond that typically experienced in a rural community.

However, males made up around 87% of the overall Whitehaven workforce (across all positions and locations) (Whitehaven, 2019) and 96% of the total 520 Narrabri Mine workers and contractors (NCOPL estimate). NCOPL recognises the benefits of workplace diversity and inclusion, including the value they can bring to workplace efficiency, safety and productivity. Whitehaven has policies and processes to maximise its workforce diversity and reports on its progress annually to the Workplace Gender Equality Agency (WGEA).

The proportion of FIFO/DIDO non-local workers in a community can also influence the perception within a local community that there is a gender imbalance within their locality. It is the case that in 2016 these non-local workers were mostly male (around 80% in Narrabri LGA, 500 males, and 70% in Gunnedah LGA, 370 males) (see Section 4.1.3). Contractors that visit the area of social influence regularly for work would not be included in these figures and no information was available on their number or gender mix.

The number of non-local workers is small relative to the overall resident populations of the area of social influence (representing 3.9% for Narrabri LGA and 3.0% for Gunnedah LGA). Although making up a very small proportion of the population, non-resident workers can be highly visible (or are more likely to be noticed) given their activities and work uniforms.

The Project would result in an additional 20 FTE contractors being required intermittently but on an ongoing basis throughout the life of the Project, with no increase to the existing ongoing workforce. Despite their low numbers, non-local workers can be highly visible in the community, with distinctive uniforms and vehicles when visiting towns to access facilities (shops, restaurants, pubs, etc.). This may lead to a perception that the community is changing even when the actual change is small. The perception of a change to the sense of place for residents of Narrabri LGA and Gunnedah LGA is discussed in other sections of this SIA.

Approval of the Project would maintain the slight overrepresentation of males (such as in Baan Baa village and surrounds), and the ongoing perception of a gender imbalance from within a small segment of the community.

Localised community composition changes (Impact Comm-4)

Trends in the agricultural industry, including responses to deregulation, industrialisation and globalisation, have contributed to amalgamations of rural properties into larger operations around Australia (Commonwealth of Australia [Productivity Commission], 2005). This trend has undoubtedly contributed to the reduction in employment in agriculture in the area of social influence over many years. This reduction in employment is evident in the Narrabri LGA and Gunnedah LGA even in the ten-year period between 2006 and 2016 (see Section 4.2.4). This decline has in turn resulted in declining rural populations across Australia.

Two nearby landholders to the Narrabri Mine noted these broader trends and acknowledged they had led to the loss of neighbours and local connections/communities. However, these landholders also thought that previous property acquisitions for the Narrabri Mine had contributed to this loss of connections, the impact of which has been strongly felt at the individual level in these examples.

Approximately six additional privately owned properties may be acquired for the Project (Section 4.7.1), estimated to contain 12 people. The owners of the properties that are acquired would not necessarily be required to leave immediately as they may have the option to lease back their property from NCOPL until land is required. However, given this leaseback arrangement, some of the landholders may be more likely to move off the land than they otherwise would if they owned their property. However, it is the intent of the proponent that these properties will remain occupied, where possible.

The small number of acquisitions and the ability of landholders to lease back their properties in some cases, means that impacts to localised community composition is likely to be low and impact a very small number of people in a localised geographic area. However, there would be meaningful changes to individual resident relationships as a result of the acquisitions. Although impacting only a small number of local residents, the impact of changes to localised community composition – that is, changes to neighbours, a reduction in connections within their local community, and feelings of change – may be an individually significant impact leading to a feeling of isolation or a lack of belonging.

5.2.1.2 Sense of place

Continued changes to sense of place (Impact Comm-5)

Community members of the Narrabri township regard agriculture, rural characteristics, community cohesion and economic diversity as key elements of their sense of place (see Section 4.1.6). Resource extraction activities, including both coal mining and CSG, are seen by some community members as threats to these elements of sense of place in that these activities:

- can be undertaken on land that was previously used for agriculture and therefore can directly displace agricultural activities;
- can result in changes to the landscape that are highly visible from a distance, and therefore impact the overall impression of an area as being predominantly rural in nature;
- are generally progressed by large firms that are ‘outsiders’ and utilise ‘experts’ from outside the local community; and
- can disrupt community cohesion in a range of ways, including through introducing new income disparities and altering the community composition.

Engagement undertaken for the SIA found similar findings within the area of social influence. The majority of local respondents to the community survey suggested that the rural and agricultural character of the area was an integral part of the sense of place, especially in contrast to mining, which was considered by most not to be a central part of the community identity (see Section 4.1.9). The majority of local respondents also thought that mining was changing the community.

As an extension, the Project is likely to continue to contribute to a sense amongst these residents that the area has changed from a predominantly rural and agricultural place to a place with a mix of activities. However, the significance and extent of impact will remain unchanged. This change occurred almost a decade ago in 2012 when the Narrabri Mine was commenced as a longwall mining operation. Although the Narrabri Mine has been operating since 2012, the Project would result in a continuation of mining activities for a longer period, potentially exacerbating concerns regarding sense of place. In addition, being related to an underground operation, the Project’s contribution to a changed sense of place is substantially less than that experienced from an open cut operation, as the infrastructure of the mine and changes to the landscape are predominantly not visible.

Sense of place is however not just impacted by the visibility of the activity itself or the physical change in land use (as noted above), but also to the visibility of workers in the industry, the prominence of discussions around mining activities, and the increasing importance of the mining industry to the economy compared to agriculture. As a continuation of operations, with only a small increase in the size of the workforce, these intangible aspects would be unchanged by the Project.

Cumulative impacts

Open cut coal mining and CSG projects are proposed in the area of social influence and may contribute significantly to a changing a sense of place. As these other projects would commence prior to the end of the currently approved mine life in 2031, they would have a cumulative impact with the existing Narrabri Mine’s operations. Cumulative impacts associated with the Project would therefore be a continuation of those from the existing operation.

5.2.1.3 Community cohesion

Continued impact to community cohesion (Impact Comm-6)

Research, such as Askew and Askland (2016), has identified that resource-extractive industries (both coal and CSG) has impacted the traditionally high level of community cohesion in Narrabri township (the geographic area considered in the analysis is not outlined) (see Section 4.1.7):

“Narrabri is defined as a traditionally cohesive and inclusive community by its residents. This is a key value in Narrabri. The intensification of the extractive industries is destabilising and creating new, potentially conflictual relationships due to changes in the economic and social basis of the town.”

“Locals are forced to actively manage their relationships with others in order to avoid conflict. Some residents feel socially isolated. The key value of cohesion as a definitive feature of the Narrabri community is threatened.”
(Askew & Askland, 2016, p. 39)

Many of the participants in this research conflated their views of mining and CSG activities as one group of activities, and therefore it was difficult to tease out the impacts specifically related to mining activities compared to CSG activities.

News articles published more recently suggest that the divisions summarised by Askew and Askland in 2016 may remain in 2020. The engagement undertaken for the SIA also noted ongoing community cohesion tensions.

Local respondents to the community survey also rated whether they thought the Project would have a major or minor negative or positive impact on community cohesion, connectedness and harmony. Of the 37 local respondents who answered this question in the community survey, one thought that the Project would have a major or minor positive impact on this characteristic (2.7%) and 33 thought it would have a major or minor negative impact (81.1%).

Three local respondents to the community survey provided additional comments expressing thoughts that community cohesion was an issue. On the other hand, one local respondent to the community survey thought that community disharmony was generally overstated.

The NSC officers who participated in engagement activities suggested that there was a feeling that residents of Narrabri LGA were missing out on the benefits of mining, and that there was competition for mining jobs between the Narrabri LGA and Gunnedah LGA populations (Section 4.1.9). GSC officers thought that there was tension between the mining and agricultural industries in Gunnedah LGA (Section 4.1.9). This was often related to a perception that the mining industry utilised water that should alternatively be available for agricultural use and also pushed up the price of water for others (although minimal external water is used at Narrabri Mine).

One interviewed nearby landholder provided their view that there was an existing divide between the “haves” and the “have nots”. This divide has been present for many years in the farming community. The interviewee identified that mining jobs had joined this divide. They noted that this divide was felt, for example, in the price of goods in Narrabri, for example. Prices are perceived to be higher because they are affordable for mine workers with higher incomes; however, they are less affordable for other residents, creating a feeling of exclusion and division.

An analysis of academic literature (Askew & Askland, 2016) on social cohesion identified three ways that community cohesion can potentially be impacted by mining activities:

1. **Between mine workers and ‘traditional’ workers:** Tensions brought about by mining workers being employed with higher wages and having different backgrounds to ‘traditional’ residents working in agriculture and services.
2. **Between Narrabri and Gunnedah communities:** Tensions brought about by a perception that these communities were competing against each other to capture the benefits of mining activities, including tension between Aboriginal groups based around the Narrabri and Gunnedah areas.
3. **Between residents:** Disagreements over the benefits and consequences of mining. The disagreements were highly emotive given that some residents felt the nature of their community was threatened as it transitioned away from a predominantly rural/agricultural place.

The Narrabri Mine is currently operational and has been operating in the Narrabri LGA since 2012. However, given that the Project would extend the life of the mine by 13 years, the Project may contribute to the continuation of community tensions as described above, with no change in their intensity or frequency.

These community tensions may have been historically present, for example, competition between different local areas and friction between groups with different socio-economic status are likely to have existed throughout the history of these communities. However, the Project still contributes to these existing tensions.

The tensions are unlikely to be worsened by the Project given there are no significant changes to the number of employees and contractors, nor to the activities being undertaken. Being an underground mine, the Project is also less visible and is, therefore, thought of differently to some other resource activities such as open cut coal mining, which have a more visible impact on landscapes and land use.

Cumulative impacts

Open cut coal mining and CSG projects are proposed in the area of social influence and may contribute more significantly to community tensions. As these other projects would commence prior to the end of the currently approved mine life in 2031, they would have a cumulative impact with the existing Narrabri Mine's operations. Cumulative impacts associated with the Project would therefore be a continuation of those from the existing operation.

5.2.1.4 Community investments

Continued community investments (Impact Comm-7)

Since 2012, NCOPL has contributed to the local community through a yearly program of community investments, including contributions to local government (NSC and GSC) to improve social infrastructure provision. As outlined in the baseline, these community contributions are in accordance with conditions of approval and consist of:

- Upgrade and seal of a 7-km length of the Kurrajong Creek Road for the NSC.
- A \$7,000 contribution to the NSC for provision of bushfire services.
- A total contribution of \$93,000 to the NSC for community infrastructure.
- A total contribution of \$100,000 to the GSC for the Gunnedah Urban Riverine Scheme.
- A total contribution of \$1,500,000 to the NSC for the Narrabri Swimming Complex.
- A total contribution of \$100,000 to the GSC for community enhancement.

The investments therefore equate to approximately \$225,000 per year.

More broadly, NCOPL and Whitehaven have contributed to the Westpac Rescue Helicopter and the nationwide Girls Academy, the leading provider of school-based engagement programs for Aboriginal and Torres Strait Islander girls in Australia.

Three local respondents to the community survey were sceptical of the community contributions made by NCOPL. They suggested that NCOPL only contributed as much as is required under their approval conditions.

The Project would result in the continuation of community investments for an extended 13-year period. These contributions would continue to help achieve positive social outcomes, supporting local service provision and community infrastructure and community resilience improvements.

5.2.1.5 Summary of impacts identified (community)

The table below summarises the impacts identified in this section.

Table 5-5. Identified impacts on community and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
Comm-1	The Project may attract current non-local employees to move to the area of social influence, resulting in minimal population growth (up to 40 people – workers and their families) contributing in a small way to the stabilisation of the Narrabri LGA and Gunnedah LGA population supporting viability of existing service provision.	Operation	Positive	Community within the Area of Social Influence
Comm-2	Continuation of training and employment at the Narrabri Mine may assist with maintaining young adult population which may otherwise decline further.	Operation	Positive	Community within the Area of Social Influence
Comm-3	Continuation of existing employee and contractor employment trends maintaining a community perception that the locality is dominated by males.	Operation	Negative	Community within the Area of Social Influence
Comm-4	Small number of land acquisitions (approximately six properties) would lead to a small loss of farming families over time, in turn resulting in a change to localised community composition and loss of individual personal connections.	Planning and Operation	Negative	Newly Impacted Neighbouring Landholders
Comm-5	The Project maintains a change in the community's sense of place from agricultural activities to extractive industries.	Planning and Operation	Negative	Community within the Area of Social Influence
Comm-6	Continuation of existing tension between community members related to the socio-economic changes within these communities; tension and competition between Narrabri and Gunnedah residents to capture the benefits of mining; and community tensions related to the perceived threat to sense of place being the change from traditional agricultural activity to inclusion of mining.	Planning and Operation	Negative	Community within the Area of Social Influence
Comm-7	Continued community contributions supporting positive social outcomes, social infrastructure investments and/or community resilience improvements.	Operation	Positive	Community within the Area of Social Influence

5.2.2 Way of Life

5.2.2.1 Housing

Housing affordability (Impact WL-1)

The affordability and availability of housing for low income households in both Narrabri LGA (Narrabri and Boggabri townships) and Gunnedah LGA was raised as an issue by NSC and GSC officers who participated in the engagement activities, as well as by Aboriginal groups (see Section 4.2.6).

Local respondents to the community survey rated whether they thought the Project would have a major or minor negative or positive impact on housing affordability and availability. Of the 35 local respondents who answered this question in the community survey, one thought that the Project would have a positive impact on this characteristic (2.9%) and 35 thought it would have a negative impact (85.7%).

Purchase affordability

The median sale price of houses increased substantially in the Gunnedah LGA between 2000 and 2019, and also increased to a lesser extent in the Narrabri LGA. However, this increase in median sale prices was consistent with increases throughout Regional NSW. Increased demand due to mining activity and the higher incomes of mine workers, may have contributed to median prices increasing during this period, particularly in the context of the decline in importance of other industry sectors (see Section 4.2.2.3).

However, the proportion of very low, low, and moderate income households experiencing mortgage stress was lower in Narrabri LGA and Gunnedah LGA in 2016 compared to Regional NSW. In addition, higher proportions of housing stock that was available for purchase was classified as affordable for very low, low, and moderate income households compared to Regional NSW (see Section 4.2.2.6). Therefore, even for low income households, housing affordability is less significant of an issue in the area of social influence compared to other areas of Regional NSW. However, the increase in median sale and rental prices since 2000 will have affected very low and low income households.

The extent to which the Narrabri Mine may have contributed to these house price increases is difficult to establish, given that multiple major projects began operation in the area of social influence at a similar time to the Narrabri Mine.

Rental affordability

A healthy vacancy rate is between 2.5% and 3.5% (Real Estate Institute of Queensland, 2018). Rental vacancy rates in Narrabri township (Postcode 2390) have increased since around 2015, to more healthy levels of around 3%. In the Gunnedah township (Postcode 2380), the rental vacancy rate has been variable but has averaged around 3% vacancy since 2013.

Median rents for new bonds increased gradually between 2014 and 2019 (see Section 4.2.2.4). Lower proportions of very low, low, and moderate income households were in rental stress in Narrabri LGA and Gunnedah LGA in 2016 compared to Regional NSW. In 2017, 48% of available rental dwellings were classified as affordable to rent for very low income households in Narrabri LGA and 28% in Gunnedah LGA (see Section 4.2.2.6). The proportions of rental stock that were affordable for very low, low and moderate income households declined in Narrabri LGA and Gunnedah LGA between 2001 and 2017, however this was a similar trend to the Regional NSW average. Higher proportions of rental stock were affordable for these households in the local area compared to Regional NSW. This suggests that rental affordability is a less significant issue in the area of social influence, compared to other areas of Regional NSW.

Social housing and homelessness

The homeless population in the Narrabri LGA in 2016 was estimated to be 33 people, and the homeless population in the Gunnedah LGA was estimated to be 18 people.

At 30 June 2018, there were 54 applicants on the waiting list for social housing in the Narrabri Allocation Zone, and 96 applications on the waiting list in the Gunnedah Allocation Zone (see Section 4.2.2.9). The wait time for a three-bedroom dwelling in the Narrabri Allocation Zone was up to two years, but five to ten years in the Gunnedah Allocation Zone. Wait times for smaller dwellings were two to five years. Of the total applicants, one was a priority applicant in the Narrabri Allocation Zone and 19 were priority applicants in the Gunnedah Allocation Zone. Priority applicants are those identified as in urgent need of housing and are unable to find housing in the private rental market due to their complex life circumstances.

Analysis

The Project would result in a negligible increase in housing demand and would maintain the existing housing demand from employees of the Narrabri Mine for an additional 13-year period. The impact of housing affordability would in turn be negligible.

It is assessed that up to an additional 16 households may relocate to the Narrabri LGA and Gunnedah LGA for long-term employment as a result of the Project (Section 5.2.1.1). An additional 16 households would represent just 0.2% of the 9,140 households residing in the Narrabri LGA and Gunnedah LGA, and are therefore likely to have negligible impact on overall housing demand and housing values. This demand will occur in a housing market that is generally more affordable for its residents, compared to other areas in Regional NSW. The (NSW Government [Department of Planning, Industry and Environment], 2020a) found that future housing developments in Narrabri would be able to accommodate additional demand.

However, it is noted that if the Project is not approved, the mine would cease to operate in 2031. If alternative employment is not available to mine workers, up to 250 properties could be excess to demand if all workers moved away, resulting in significant downward pressure on sale and rental prices.

The assumed 20 additional full-time equivalent contractors expected to be required sporadically throughout the Project are likely to utilise Civeo Narrabri Village (purpose-built mining camp in Narrabri township) and other short-term accommodation in Narrabri. These additional temporary workers are therefore not expected to impact the local long-term housing market. The potential impact on short-term accommodation is considered in Section 5.2.2.5.

Cumulative impacts

Construction workers, including ongoing construction workers, for Narrabri Gas Project, Vickery Extension Project and the Project are expected to reside in temporary accommodation camps or existing or expanded workers accommodation facilities. Construction workers are therefore not expected to have any cumulative impact on the housing market. The potential impact on tourist accommodation is considered in Section 5.2.2.5.

During operation, the two largest projects proposed for development in the area of social influence, combined with the Project, are expected to attract a total of approximately 201 additional households to the Narrabri LGA and Gunnedah LGA (50 households for the Narrabri Gas Project, 135 households for the Vickery Extension Project and 16 households for the Project) (see Section 5.2.1.1). Together these 201 additional households represent just 2.2% of the 9,140 households residing in the Narrabri LGA and Gunnedah LGA.

These additional households would create additional short-term housing demand and therefore put some upward pressure on housing sale and rental prices and spur additional stock to be added in these markets (given relatively normal overall dwelling occupancy and rental vacancy rates) (see Section 4.2.2.5). Given dwelling approvals of around 40 dwellings per year (even in recent years when development approvals have been lower) (see Section 4.2.2.5), it may take up to five years for additional dwellings to be approved and constructed and for dwelling occupancy and rental vacancy rates to return to normal. Given that these workers would be moving to the area of social influence during the operational phase of other major projects, their movement may be staggered over up to five years, limiting the potential short-term impacts on affordability.

It should also be noted that without these projects, population projections presented in Section 4.1.2 suggest that the population of Narrabri LGA is expected to decline (by around 700 people between 2016 and 2041 and by around 180 people in the next ten years) (see Section 4.1.2).

Conclusion

The Narrabri Mine and other mines in the area employ workers on relatively high incomes and this may have contributed to increased accommodation prices over the past 20 years – both sales and rental prices. The Project would maintain housing and rental prices in the area of social influence for an additional 13 years, and would neither increase nor decrease housing affordability at that time, as additional housing demand generated by the Project is expected to be minimal. The increase in households due to the Project is expected to be in the order of 16 households and these households would be expected to move to the area of social influence over a number of years, having negligible additional impact on affordability.

5.2.2.2 Transport

Difficulty accessing Kamilaroi Highway (no impact)

Local respondents to the community survey rated whether they thought the Project would have a major or minor negative or positive impact on transport. Of the 37 local respondents who answered this question in the community survey, one thought the Project would have a positive impact on this characteristic (2.7%) and 28 thought it would have a negative impact (67.6%).

One nearby landholder stated that it was difficult to access the highway when shift changes were occurring twice a day.

The Road Transport Assessment undertaken for the Project (The Transport Planning Partnership, 2020) undertook a traffic survey program to quantify existing traffic conditions on roads serving the Project in June 2019, including surveys of daily traffic volumes and intersection turning movements. The traffic survey program identified Narrabri Mine generated traffic:

- During an average weekday afternoon peak hour (4.00 pm to 5.00 pm) of 85 vehicles per hour, with 52 vehicles per hour from/to the north on the Kamilaroi Highway (25% of the total 208 vehicles counted at this location in total) and 33 vehicles per hour from/to the south on the Kamilaroi Highway (16% of the total 207 vehicles counted at this location in total).

This volume of traffic may cause some delay for some landholders trying to access the highway, particularly given that the speed limit on the highway in most locations near the Narrabri Mine is 100 km/hr. This speed requires wider-spaced gaps in passing traffic for entering vehicles to safely merge. This afternoon peak traffic period is generally short-lived according to information provided in the assessment, with traffic volumes falling quickly from after 6.00 pm.

- During an average weekday morning peak hour (6.00am to 7.00am) of 128 vehicles per hour, with 78 vehicles per hour from/to the north on the Kamilaroi Highway (48% of the total 164 vehicles counted at this location in total) and 50 vehicles per hour from/to the south on the Kamilaroi Highway (34% of the total 148 vehicles counted at this location in total).

The morning traffic peak on the Kamilaroi Highway has a lower volume of traffic compared to the afternoon peak, but the Narrabri Mine contributes substantially to the volume of traffic. The morning peak hour volume is maintained for several hours with other workers and school trips, however the contribution of the Narrabri Mine to traffic reduces significantly after 7.00 am.

The Road Transport Assessment found that the Project would have minor or no impact on the levels of service experienced by drivers on the Kamilaroi Highway. The key intersections that would be used by Project traffic are expected to operate at good levels of service with short delays and spare capacity without requiring upgrading. There would be no road closures or road diversions as a result of the Project.

The Project would not result in a material change to the accessibility to surrounding properties.

5.2.2.3 Livelihoods and economic diversity

Employment and skills development at Narrabri Mine (Impact WL-2)

As a continuation of an operational mine, additional employment associated with the Project is likely to be minimal. However, approval of the Project would support this level of direct employment for an additional 13-year period.

Narrabri Mine employed approximately 270 people in November 2019 (NCOPL data, see Section 4.2.4.5). Around 9% of this workforce identify as being Aboriginal and/or Torres Strait Islander people (a slightly lower proportion than approximately 12% of the total population of area of social influence) (see Section 4.6.4).

Any additional short-term development workforce is likely to be engaged on a contractual basis (as outlined in Section 2.1.2). Contractors are also more likely to be located outside the area of social influence, according to the analysis undertaken, and therefore may not provide employment and skills development for local residents.

Engagement undertaken for the SIA suggested that training and employment opportunities within the area of social influence were issues of concern for some stakeholders.

Local respondents to the community survey rated whether they thought the Project would have a major or minor negative or positive impact on employment and training opportunities. Of the 37 local respondents who answered this question in the community survey, 11 thought that the Project would have a positive impact on this characteristic (27.0%) and 17 thought it would have a negative impact (40.5%).

Two local respondents to the community survey thought that the Project would ensure continuation of local jobs, while four local respondents were sceptical of the level of local employment created by the Project.

The unemployment rate in the Narrabri LGA and Gunnedah LGA was slightly above the Regional NSW average in 2019 and has generally been above the Regional NSW average since late 2014 (see Section 4.2.4.3), confirming the importance of the employment directly and indirectly generated by the resources sector in the area of social influence. There are also some areas of severe socio-economic disadvantage within the area of social influence, some within the bottom 5% of all areas in Australia in terms of disadvantage.

The Project would ensure the continued employment of workers and contractors at the existing Narrabri Mine for an additional 13 years. The mine life extension would extend existing job opportunities and training for local people, including young people and Aboriginal people.

High unemployment was the most significant issue of concern for representatives of the Aboriginal groups who participated in engagement activities (see Section 4.6.5). The Project would provide continuing employment and training opportunities for Aboriginal and/or Torres Strait Islander people to support employment for this population sub-group. The unemployment rate for Aboriginal and/or Torres Strait Islander people in 2016 was much higher than for non-Indigenous people in the Narrabri LGA and Gunnedah LGA at around 18%, however this was similar to the rate in Regional NSW (see Section 4.6.3). Stakeholders suggested that more could be done to reduce barriers to employment at the Narrabri Mine for Aboriginal people and to encourage Aboriginal people into higher-skilled positions (these suggestions are summarised in Section 6.2). Consideration of the impact of training and employment of Aboriginal people is included below in Section 5.2.6.2.

It is noted that if the Project is not approved, the mine would cease to operate in 2031. If alternative employment is not available to mine workers, up to an additional 250 workers may be looking for work.

GSC officers noted that the resources sector, including the Narrabri Mine, competed against local businesses to employ staff. They identified that local businesses were training new workers only to have them leave for higher paying jobs at mines in the Narrabri LGA and Gunnedah LGA (Section 4.2.6). This comment was related to new coal mine projects that require employment of a large workforce in a short period of time. The Project would have minimal impact on skilled labour given an expected increase of only 20 additional FTE construction workers throughout its life.

Procurement from local business (Impact WL-3)

According to data provided by NCOPL, in the 2018-19 financial year Whitehaven (majority owner of NCOPL) spent more than \$23 million with 61 businesses based in Narrabri township (around \$59 million over the past five years), as well as \$1.7 million with 11 businesses based in Boggabri (around \$5.3 million over the past five years). NCOPL would contribute a proportion of these overall Whitehaven amounts. Data could not be separated on the value of procurement contracts from NCOPL to businesses based in the area of social influence.

The Project would maintain these economic benefits to local businesses in the area of social influence as well as the wider region, NSW and Australia. If the Project is not approved, the mine would cease to operate in 2031 and these economic benefits to local businesses would conclude.

Economic diversity and economic resilience (Impact WL-4)

Stakeholders involved in engagement undertaken for the SIA acknowledged the important contribution that mining projects have in diversifying the economy. Local respondents to the community survey rated whether they thought the Project would have a major or minor negative or positive impact on local business, industry and economic development. Of the 39 local respondents who answered this question in the community survey, nine thought that the Project would have a positive impact on this characteristic (23.1%) and 22 thought it would have a negative impact (53.8%).

Three nearby landholders mentioned the positive impact of the Narrabri Mine providing employment and contributing to the resilience of the local economy (Section 4.2.6). Many of the discussions with landholders were undertaken during a period of low rainfall and some commented that without mining jobs the local area would experience even tougher economic conditions.

The mining industry has diversified the economies of the Narrabri LGA and Gunnedah LGA over the past ten years (see Section 4.2.4.3), counterbalancing the general decline in the number of people employed in agricultural industries.

For Narrabri LGA, whilst 20% of workers were employed in the agriculture, forestry and fishing industry in 2016, the number and proportion of workers in this industry decreased in the decade between 2006 and 2016, from 25% to 20% of workers, representing a decline of 340 workers. The number and proportion of workers employed in the mining industry increased between 2006 and 2016, from 0.5% to 6% of workers, representing an increase of 285 workers.

For Gunnedah LGA, 14% of workers were employed in the agriculture, forestry and fishing industry in 2016, however again, the number and proportion of workers has decreased in the ten-year period, from 18% to 14% of workers, representing a decline of 110 workers. The number and proportion of workers employed in the mining industry increased substantially between 2006 and 2016, from 3% to 14% of workers, representing an increase of 620 workers.

The Narrabri Mine, and the mining industry in general, support economic diversity and resilience, creating and supporting an increasingly diverse mix of industries of employment that developed between 2006 and 2016. This diversity means that the local economy is more resilient to shocks and stressors than a mono-sector economy. For example, diverse industries of employment are important during prolonged drought when the agricultural sector may have reduced output. The Project would maintain support for this economic diversity and resultant resilience over a longer period.

5.2.2.4 Recreation activities

Impact to natural recreation areas (no impact)

Numerous natural areas were identified within the vicinity of the Project that are open to visitation by locals and tourists for recreational activities, including Pilliga East SCA, Pilliga West SCA, Timmallallie National Park and Willala Aboriginal Area, as well as the Pilliga National Park, the Pilliga West National Park and the Mount Kaputar National Park.

Visitors to areas open for recreational and tourism activities would be unlikely to be impacted by the continuation of the existing Narrabri Mine or the Project, given their separation from the Project site, and its underground operations. For example, it is unlikely visitors would be able to hear or see any activities at the site. Enjoyment of these natural areas would be undiminished by the Project.

5.2.2.5 Tourism

Impacts to tourism and tourist accommodation (no impact)

Tourism is an important industry within the area of social influence (see Section 4.2.4.4). Between 2014 and 2017, there was an average of 261,000 domestic visitors to Narrabri LGA and 185,000 domestic visitors to Gunnedah LGA each year. Visitors contributed at least \$87 million each year to the Narrabri LGA and Gunnedah LGA economies.

A range of tourist attractions, events and activities have been identified with the social baseline, including the national park areas as identified previously, however none of these are considered likely to be impacted by the Project, given their geographical separation from the Project's location and its nature as an underground operation.

Although the natural, rural and agricultural characteristics of the area are acknowledged as part of the reasons that tourists visit towns within the area of social influence, mining activity was not thought of as a threat to these characteristics by local governments. Tourism strategies and plans for the NSC and GSC identify mining activity as an opportunity for the tourism sector in terms of both increasing demand for short-term/tourist accommodation for work-related trips, as well as for mining-related tours and events.

Short-term accommodation providers may be supported by the Project's 20 additional full-time equivalent contractors staying in their accommodation; however, the worker accommodation camps are more likely to be utilised. This would allow short-term accommodation options to remain available for tourist and business traveller use.

Cumulative impacts

The peak construction periods of the two largest proposed projects will both conclude by 2023, leading to minimal overlap with the development period of the Project, expected to begin in 2022. Construction workers, including ongoing construction workers, for the Narrabri Gas Project, Vickery Extension Project and the Project are expected to reside in temporary accommodation camps or existing or expanded workers' accommodation facilities. Construction workers are therefore not expected to have any cumulative impact on short-term accommodation utilised by tourists.

The Narrabri Gas Project has an expected ongoing construction workforce of 145 workers (reduced from a peak of 1,300). All of these 145 workers are anticipated to be drawn from outside the local area according to the Narrabri Gas Project SIA and will therefore require temporary accommodation while on-shift (GHD, 2016). The Narrabri Gas Project SIA anticipates that this ongoing construction workforce will be housed in temporary accommodation camps or existing workers' accommodation facilities, and will therefore have no impact on short-term accommodation utilised by tourists.

The area of social influence benefits from having workers' accommodation camps available in Narrabri and Boggabri townships to help manage high and low demand for tourist accommodation, and ongoing monitoring would help to ensure a balancing of demand for tourist accommodation.

5.2.2.6 Summary of impacts identified (way of life)

The table below summarises the impacts identified in this section.

Table 5-6. Identified impacts on way of life and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
WL-1	Maintained levels of housing demand from continued operation, with a small potential increase in demand over time with ongoing localisation of the workforce.	Operation	Neutral	Community within the Area of Social Influence (particularly low income groups)
WL-2	Maintained provision of jobs and training for local residents, including young people and Aboriginal people.	Operation	Positive	Community within Area of Social Influence
WL-3	Ongoing opportunities for local business inputs and contracts.	Operation	Positive	Local Businesses
WL-4	Ongoing contribution to economic diversity and economic resilience.	Operation	Positive	Community within Area of Social Influence

5.2.3 Health and Wellbeing

5.2.3.1 Health

Health impacts (no impact)

Health-related impacts from the Project are addressed in other specialist assessments prepared for the Project EIS, which identify there would be no additional health impacts from the Project on surrounding landholders. Mental health-related impacts such as stress and anxiety are considered in Section 5.2.9.

Local respondents to the community survey rated the degree to which they thought the Project would impact on physical and mental health. Of the 39 local respondents who answered this question, four thought that the Project would have a positive impact on this characteristic (10.3%) and 24 people thought it would have a negative impact (74.4%). These responses arose from concerns about the health impacts of potentially drinking water or breathing air containing coal dust. This concern was also reported by nearby landholders interviewed, who also reported that coal dust was impacting their quality of life.

The NCOPL complaint register includes only one complaint between 2012 and 2019 that expresses concern about health impacts (in January 2014), specifically concerns about breathing coal dust or ingesting it via their rain-fed drinking water (see Section 4.5.3.1).

The Air Quality and Greenhouse Gas Assessment undertaken for the Project considers air quality impacts that would result in harmful exposure to coal dust and other particulate material (Jacobs, 2020). Based on the results of this assessment, the Project would not exceed health-based EPA or VLAMP criteria for sensitive receptors and appropriate management measures are proposed to manage risk of exposure.

5.2.3.2 Health infrastructure

Health infrastructure (Impact H&W-1)

The Project would result in the continuation of current levels of demand upon health infrastructure for an additional 13-year period. The ongoing localisation of roles could see an increase in demand from 16 households (or 40 people in total, equivalent to population growth of around 0.2% on 2016 ERP). However, the population of the area of social influence is expected to decline by around 700 people between 2016 and 2041 (and by around 180 people in the next ten years) (Section 4.1.2). This will result in reduced demand for health services overall.

Demand would typically be for the treatment of work-related injuries, and general practitioner/local population health services. The impact on these services is expected to be negligible but will continue to support the provision of health services for the broader community.

Injuries

Injured workers requiring emergency medical treatment from the Project would travel to Narrabri Hospital, which is approximately half the travel time from the site as Gunnedah Hospital (25 minutes compared to 45 minutes).

The number of emergency presentations to emergency departments have increased at Narrabri Hospital and Gunnedah Hospital over the past ten years (as did the rate of presentations per 1,000 population) (see Section 4.3.1.4). Whilst demand has increased, the proportion of these cases that are seen on time has remained generally stable over time.

Gunnedah and Narrabri Hospitals, with similar LGA populations, experience a similar number of presentations that are classified as emergencies, although Gunnedah Hospital has a higher number of total emergency department presentations.

More than 95% of patients visiting Narrabri Hospital with an issue classified as an emergency start treatment on time (within ten minutes of arrival), suggesting that the capacity of the hospital to deal with emergencies is very high. Gunnedah hospital also has slower treatment times for emergency presentations, perhaps due to the higher number of overall presentations.

The Narrabri Mine provides a range of health services on-site to treat injuries, including first aid facility, first aid trained personnel, advanced first aid trained personnel (including resuscitation and pain management) and occupational first aid trained personnel, as well as a mines rescue team. The Narrabri Mine also has a helipad which has not been required for mine personnel, but has been used for motor vehicle accidents on the highway. The helipad is maintained by Narrabri Mine.

The number of injuries at the Narrabri Mine requiring external assistance is low (around 15-20 injuries annually between 2016 and 2020). The size of the Project's workforce and the activities they undertake would not alter due to the proposed mine life extension. Any demand for emergency services from the Project would remain unchanged, only occurring for an additional 13 years. This will support continued provision of health services for the broader community.

General health services demand

The overall burden of disease has been considered in analysing the demand for health services, given that the demand for health services differs in different local areas based on the composition of the population. This information is provided in Section 4.3.1.1.

For the Narrabri LGA, the rate of admission to hospital for endocrine, nutritional and metabolic diseases was well above the national average (79% higher than for Australia). These diseases may reflect lifestyle-related health issues such as unhealthy eating, lack of exercise, and higher alcohol consumption. The rate of admission for respiratory system diseases was also well above the national average in Narrabri LGA (48% higher than for Australia), which may reflect higher rates of smoking and/or potential air quality issues and asthma. The higher rate may also relate to the higher Aboriginal and/or Torres Strait Islander population in the social area of influence, a group which experiences higher rates of these diseases.

For the Gunnedah LGA, the rate of admission for respiratory system diseases was also above the national average (22% higher than for Australia).

Despite these higher rates of some diseases, the negligible amount of population growth associated with the Project is unlikely to have an adverse impact on the capacity of health services to meet demand. The projected decline in population will result in reduced demand for health services overall and may otherwise result in services being removed. The Project may therefore support the ongoing provision of local health services.

Cumulative impacts

The peak construction periods of the two largest proposed projects will mainly conclude by 2023, leading to minimal overlap with the construction period of the Project, expected to begin in 2022.

The two largest proposed projects that will have overlapping operational workforces with the Project may contribute a combined 478 people to the population of the area of social influence (130 people for the Narrabri Gas Project, 308 people for Vickery Extension Project, and 40 people for this Project). This population would be spread across settlements in the area of social influence and would represent population growth of around 1.9% of the 2016 estimated resident population.

This increase in population will not, however, offset the decline projected to occur in the population of the area of social influence between 2016 and 2041, which is expected to decline by around 700 people. Further declines are expected after 2041, around 18 people a year for the next decade. This population decline will result in reduced demand for health services overall, beyond any increased demand generated by planned resources projects.

5.2.3.3 Public safety and security

Crime and perceptions of safety (Impact H&W-2)

Increased crime rates, or an increased feeling of being unsafe, have been identified in other studies as a potential impact of mining activities. Engagement activities for this SIA identified a small number of participants who raised crime as a potential issue.

Mining has been undertaken in the area of social influence for the last 15 years (Boggabri Coal Mine [2006], Tarrawonga Coal Mine [2006], Rocglen Coal Mine [2008], Narrabri Mine [2012], Maules Creek Coal Mine [2015] – see Section 4.5.2) and crime data is available throughout this period, allowing a high-level assessment of the connection between crime rates and mining activity.

Overall rates of major offences have been decreasing in the Narrabri LGA and Gunnedah LGA over the past 17 years, albeit at lower rates than the decline in NSW (see Section 4.3.3). Rates were trending down for most categories of crime over the 17-year period (where sufficient data was available to establish a trend). Rates of crime were increasing only for breaches of justice procedures in Narrabri LGA; and for both breaches of justice procedures and “other offences” in Gunnedah LGA. Over the last five years (2014 to 2018), trend analysis published by the NSW Government Department of Justice (2019) noted that all categories of crime were either stable or decreasing in Narrabri LGA and Gunnedah LGA (where sufficient data was available to establish a trend). Rates of alcohol-related crime also declined since 2010/11 in the area of social influence.

There is no evidence to suggest that rates of crime are higher in the area of social influence than they otherwise would be due to the commencement of mining activity. In addition, as an extension of an operating mine, with only a small additional development workforce and the same operational workforce size, there is unlikely to be any increase in crime from the Project.

Perception of safety

Local respondents to the community survey rated whether they thought the Project would have an impact on safety. Of the 35 local respondents who answered this question in the community survey, three thought that the Project would have a positive impact on this characteristic (8.6%) and 25 thought it would have a negative impact (71.4%). There were no explanatory and additional comments from local respondents to the community survey that related to safety, however one local respondent considered that mining contributed to crime, specifically suggesting that theft increases with mining activity (Section 4.3.4).

The survey responses conflict with the results of a more comprehensive survey undertaken by PHIDU in 2014, where perceptions of safety were higher in both Narrabri LGA and Gunnedah LGA compared to Regional NSW and NSW as a whole (see Section 4.3.3.2). This is despite the presence of mining industry workers in the area of social influence.

Local perceptions of community safety could be negatively impacted by the presence of a large number of unknown, non-resident, predominantly male workers in the restaurants, pubs and public spaces where the community gathers. However, as a continuation of an existing mine, with a negligible increase in workforce, the Project will have no influence on such perceptions. The Project would potentially contribute to this maintained perception for a longer period. However, it is likely that any such perception will lessen by 2030, with the decline in population projected to occur, which will increase the importance of mining to local livelihoods.

Negative perceptions of safety would be minimised by existing staff codes of conduct, use of worker accommodation facilities for contractors, community engagement activities and community investments. This impact is likely to be negligible.

5.2.3.4 Summary of impacts identified (health and wellbeing)

The table below summarises the impacts identified in this section.

Table 5-7. Identified impacts on health and wellbeing and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
H&W-1	Continuing existing demand on health infrastructure for an additional 13 years.	Operation	Positive	Community within Area of Social Influence
H&W-2	Existing incorrect perceptions of the community safety impact of resource operational workforces will continue unless challenged.	Operation	Negative	Community within Area of Social Influence

5.2.4 Infrastructure, Services and Facilities

5.2.4.1 Social infrastructure

Additional demand on social infrastructure (no impact)

A range of social infrastructure was identified in the audit in Narrabri LGA and Gunnedah LGA, with the Baan Baa Community Hall being the only facility located near Narrabri Mine (see Section 4.4.1). The facility provides an important meeting place for the local Baan Baa community and surrounding rural properties. It is not expected to be directly impacted by the Project.

The current provision of community, health and emergency services was highly rated by local respondents to the community survey (Section 4.4.3). Local respondents to the community survey rated whether they thought the Project would have an impact on community, health or emergency services. Of the 36 local respondents who answered this question in the community survey, three thought that the Project would have a positive impact on this characteristic (8.3%) and 12 thought it would have a negative impact (61.1%).

The NSC officers consulted confirmed that there was a community perception that the Project would increase pressure on community infrastructure and services. They noted that NSC's view was that NCOPL investments in social infrastructure could offset other impacts that were not able to be mitigated.

NCOPL and Whitehaven have been providing financial support for local infrastructure since 2012 (Section 4.1.8). The following community contributions have been made between 2005 and 2019 providing benefits to social infrastructure provision:

- A total contribution of \$93,000 to the NSC for community infrastructure.
- A total contribution of \$1,500,000 to the NSC for the Narrabri Swimming Complex.

It is assumed that up to an additional 40 people may relocate to Narrabri LGA and Gunnedah LGA for long-term employment as a result of the Project (Section 5.2.1.1). An increase of 40 residents is equivalent to population growth of around 0.2% of the estimated resident population of the area of social influence in 2016. At the same time, the population of the area of social influence is expected to decline by around 700 people between 2016 and 2041, and by around 180 people in the next ten years. This will result in reduced demands on social infrastructure overall.

Given the level of population decline expected in the area of social influence, the Project would marginally improve the viability of existing social infrastructure within the area of social influence. In addition, ongoing community investments made by NCOPL to social infrastructure provision would mitigate the negligible additional demand placed on social infrastructure.

Childcare

Stakeholders engaged suggested that additional childcare services were needed in Gunnedah (and in Boggabri, however this was before the subsequent provision of a new childcare centre in this township). However, a quantitative analysis undertaken of the theoretical need for childcare places (Section 4.4.1.1) identifies that the current provision of places is appropriate to applicable benchmarks.

The Project's addition of 16 households (some of which would comprise children) to the Narrabri LGA and Gunnedah LGA population would be notably less than the expected decline of population between 2016 and 2041. The Project is therefore not expected to have a detrimental impact on childcare service provision. Any increase in demand for childcare services is likely to be met by continued investment by the private sector, including support from mine proponents (as was the case for the new Boggabri centre).

Schools

An analysis of trends in school enrolments and population projections is outlined in the social baseline (Section 4.4.1.2). The viability of some primary and secondary schools in Narrabri LGA and Gunnedah LGA is in question in the longer term if the projected future population declines eventuate. For example, by 2041 one primary school may no longer be needed. It was noted that this analysis is based only on enrolments and high-level population projections – the NSW Government and non-government school authorities make decisions on school viability based on their own analysis. Further, the population projections do not consider the demographic impact of any major projects approved in the social area of influence that may lead to increased population growth, or a less marked decline.

The Project's anticipated localisation of jobs may contribute to a small amount of population growth and may therefore support the overall viability of schools.

At a smaller geographic scale, a small number of properties will be acquired for the Project (approximately six acquisitions). This is unlikely to reduce enrolments at specific schools. Some of the landholders whose properties were being considered for acquisition were interviewed for the SIA, and none of these households had members that were of school age. The likely impact on the viability of local schools is therefore expected to be negligible.

However, as a precautionary approach to predicting impacts, if it is assumed that half of the acquired properties consisted of families and each had two primary school aged children, this would result in a decrease of six students. These six students would represent 7% of students at Boggabri Public School (there is also a private Catholic primary school in the catchment). This theoretical decline is unlikely to impact the viability of the school.

Cumulative impacts

The peak construction periods of the two largest proposed projects will both conclude by 2023, leading to minimal overlap with the construction period of the Project, expected to begin in 2022. Any additional non-local construction workers required for the Project (out of the 20 total additional construction workers required) are expected to continue to live outside the area of social influence, resulting in limited impact on social infrastructure (impacts to health infrastructure are assessed separately in Section 5.2.3.2).

The two major projects in the social area of influence that would have overlapping ongoing construction and operational workforces with the Project may together contribute 478 people to population growth (130 people for the Narrabri Gas Project, 308 people for the Vickery Extension Project and 40 people for the Project). This population would be spread across the area of social influence and would represent population growth of around 1.9% of the estimated resident population of this area in 2016.

With the population of the area of social influence expected to decline by around 700 people between 2016 and 2041, the small amount of population growth envisaged by these major projects is unlikely to offset the resulting reduced demand for health services overall.

5.2.4.2 Summary of impacts identified (infrastructure, services and facilities)

There are no impacts identified on infrastructure, services and facilities.

5.2.5 Surroundings

5.2.5.1 Amenity

Continued and additional amenity impacts (Impacts S-1 and S-2)

Landholders near the existing Narrabri Mine report intermittently experiencing a range of amenity impacts such as noise, air quality, visual amenity and odour impacts. Technical assessments have been undertaken to assess these factors in relation to sensitive receptors, which are reported in the Project's EIS. The assessment of this SIA focuses on the social implications of these assessments' findings, such as implications for quality of life, rural character, etc. Each of these amenity impacts are separately considered below.

Noise

Noise was the most common cause of complaints to NCOPL between 2012 and 2019 with 107 complaints recorded in total (see Section 4.5.3). There has been a large increase in the number of noise complaints in 2019, with nearly half of the total complaints between 2012 and 2019 occurring in 2019. A large proportion of the noise complaints in 2019 were however made by a single complainant (based on an analysis of CCC meeting notes in 2019).

Certain nearby landholders reported currently experiencing noise impacts related to Narrabri Mine:

- During consultation, ten nearby landholders reported that they could hear the noise from surface machinery, the main ventilation shaft and coal trains, which they felt had various impacts (see Section 4.5.4.3). Nearby landholders expressed different levels of noise impacts, with more distant landholders describing the noise as only a nuisance (five nearby landholders), and those closer to the noise sources describing noise that impacted their quality of life (five nearby landholders). Even for these closer landholders, the noise level was variable, however they noted instances where noise had interrupted their sleep or made falling asleep difficult (two landholders).
- Nearby landholders stated that the volume of noise depended on various weather-related events such as whether it was still or windy, and cloud coverage. One landholder noted that the noise seemed louder in the lead-up to noise monitoring occurring on their property and quieter during periods when the noise monitoring was occurring. This landholder thought this was deliberate. One other landholder mentioned similar experiences but thought it a coincidence.
- Also commonly mentioned by nearby landholders was noise related to trains accessing the site. Some stakeholders mentioned that the train-related noise was variable, as it seemed to depend on the training of the drivers, as to whether they could slow down without excessive noise being generated as the carriages hit each other to come to a stop.
- Three local respondents to the community survey were also concerned with the impacts of noise that they were currently experiencing. These three local respondents lived adjacent to the Narrabri Mine. One local respondent to the community survey thought that the Project would result in additional or ongoing noise impacts. This respondent lived in the Narrabri LGA.

The Noise and Blasting Assessment undertaken for the Project (Wilkinson Murray, 2020) assessed operational noise associated with the operation of the Project's fixed and mobile equipment, including conveyors, ventilation fans, stockpile dozers and reject trucks. Four nearby properties were predicted to exceed the *Voluntary Land and Acquisition and Mitigation Policy* (VLAMP) criteria (Department of Planning and Environment, 2018), including one "Significant", one "Moderate", one "Marginal" and one "Negligible". The two properties experiencing "Significant" and "Moderate" exceedances would have the right to acquisition upon request.

While not being of a frequency and intensity that requires attenuation (Wilkinson Murray, 2020), the noise environment for some landholders (beyond the four identified) is reported as being negatively experienced at a frequency or intensity that causes interruption to daily life or is a nuisance influencing the experience of the rural character of the area.

The Project would not alter the frequency or intensity of these impacts, rather they would be experienced for an additional 13 years with the Project. The change would be experienced as a social impact by some landholders, who had expected that noise would reduce within the medium term with the Narrabri Mine expected to close in 2031 (in 11 years). This is a psychological shift for impacted landholders, in terms of whether impacts are viewed as being temporary or permanent. This concept was plainly expressed by one landholder who stated that they were previously hoping to outlive the mine, and now they won't.

Further, additional ventilation shafts would be installed to the south of the existing Narrabri Mine. As a consequence, a small number of additional landholders may be exposed to low levels of noise which they may experience as intrusive on the quiet rural amenity and their way of life. Again, this has been assumed by extrapolating the level of impact currently experienced around the existing mine, to the southern extension area (not based on the result of modelling).

Air quality – coal dust

Some nearby landholders reported experiencing air quality impacts related to Narrabri Mine:

- Five landholders adjacent to the existing operations of Narrabri Mine reported experiencing impacts from dust, some of which was from coal (see Section 4.5.4.3), resulting in their needing to wash roofs (to reduce runoff into rainwater tanks) and to clean interiors more regularly. One nearby landholder stated that the amount of coal dust experienced was variable based on the speed and direction of the wind.
- Three local respondents to the community survey who lived adjacent to the existing Narrabri Mine commented about existing impacts of the Narrabri Mine related to coal dust, air quality or pollution. One respondent from Narrabri LGA thought that the Project would result in additional or ongoing air quality impacts.

Air quality (coal dust) was the second most complained about impact between 2012 and 2019 with 82 complaints to NCOPL recorded in total (see Section 4.5.3). The number of dust complaints recorded has decreased in recent years with just four recorded in the last two years (2018-2019).

The Air Quality and Greenhouse Gas Assessment (Jacobs, 2020) addressed all emissions associated with the construction and operation phases of the Project according to the appropriate measures at sensitive receiver locations. Based on the results of this assessment, the Project would not exceed health-based EPA or VLAMP criteria for sensitive receptors and appropriate management measures are proposed to manage risk of exposure.

Therefore, there will not be a threat to human health, however some nearby landholders remain concerned and find the amenity and enjoyment of their properties disrupted by some level of coal dust. These air quality impacts currently being experienced, while unchanged in extent and frequency, would continue for an additional 13 years due to the Project.

Air quality – odour

Odour is an intermittent issue at Narrabri Mine with complaints about odour being recorded almost since longwall operations began in 2012. Four nearby landholders reported often experiencing odour, described as a rotten smell, associated with algae build-up in one of the on-site dams, or ponds.

The Air Quality and Greenhouse Gas Assessment (Jacobs, 2020) concludes that odour from the site has two potential sources. NCOPL has identified that it is predominately due to a build-up of algae in ponds, and a filtration solution is being trialled to help reduce the frequency and severity of the odour created.

Spontaneous combustion events on the coal stockpile can also generate odour, if they occur. The odour associated with a combustion event is a useful warning of a fire, and reports of odour are acted upon for this reason. NCOPL has not identified any issues relating to the spontaneous combustion of coal that would have led to off-site odour impacts (Jacobs, 2020). Procedures are in place at Narrabri Mine to minimise the risk of a fire starting and to extinguish them safely when detected.

Jacobs (2020) assessed potential odour impacts resulting from ventilation, goaf gas and pre-drainage ventilation systems. Model predictions showed that odour impacts due to the ventilation systems are negligible and the Project would not change the nature of odour emissions compared to the Narrabri Mine.

The Project may result in currently experienced odour impacts continuing for an additional 13 years. NCOPL is currently investigating management options to minimise odour and will continue to manage the brine storage in accordance with the approved Water Management Plan (Whitehaven, 2013) (or the latest approved version) to minimise the potential for odour generation. Most landholders report they consider odour an inconvenience and are satisfied that NCOPL was aware of the problem and actively working to improve the issue.

Visual amenity – light spill

A visual assessment undertaken for the Project found negligible light impacts on surrounding landholders. However, while not bright enough to impact sleep or cause other issues, three nearby landholders reported currently experiencing light impacts related to Narrabri Mine:

- During engagement, two of the landholders adjacent to existing Narrabri Mine operations communicated that they could see lights from the mine. One of these landholders noted that light impacts were not an issue however the other considered that lighting was impacting their quality of life.
- One local respondent to the community survey noted that they were concerned about potential lighting impacts from the Project. This respondent lived adjacent to the Narrabri Mine and stated that they had a “clear view” of Narrabri Mine.

Visual amenity – rural outlook

Mining operations at Narrabri Mine are underground, and the existing surface infrastructure/service area will remain generally unchanged by the Project. However, new surface infrastructure associated with the Project, including vents and access tracks, may be seen by a very small number of additional nearby landholders located to the south. A visual assessment undertaken for the Project found the visual impact of this on surrounding landholders would be negligible.

5.2.5.2 Land, Water and Atmosphere

Greenhouse gas emissions (Impact S-3)

Greenhouse gas emissions associated with the Project were raised by nine stakeholders who participated in engagement for the SIA, including two landholders.

Greenhouse gas emissions contribute to global climate change causing a variety of social impacts for communities around the world, including for example:

- Increasing frequency and intensity of climate-related disasters triggering declines in human development, particularly for the poor who may prioritise recovery over nutrition, education and investment.
- Health impacts related to declines in availability of safe drinking water and insufficient food sources.
- Likely displacement and ultimately migration related to sea level rise and coastal hazards, particularly impacted the poor that locate on marginal land at high risk to flooding (World Health Organisation, 2011).

As identified in the Air Quality and Greenhouse Gas Assessment (Jacobs, 2020), the Project will produce additional greenhouse gas emissions contributing to Australia’s emissions and global emissions. The greenhouse gas emissions (expressed as carbon dioxide equivalents or CO₂-e) are estimated to be:

- Scope 1 emissions: 1.04 Mt CO₂-e per year on average.
- Scope 2 emissions: 0.12 Mt CO₂-e per year on average.
- Scope 3 emissions: 19.81 Mt CO₂-e per year on average.

Jacobs identifies that these greenhouse gas emissions are minor when compared to national emissions. For example, the Scope 1 and 2 emissions make up just 0.22% of Australia's total estimated emissions in 2017 (530.5 Mt CO₂-e).

The contribution to social issues of the greenhouse gas emissions attributed to the Project is considered negligible as they are proportionate to the Project's Scope 1, 2 and 3 emissions in comparison to total national and global emissions.

5.2.5.3 Summary of impacts identified (surroundings)

The table below summarises the impacts identified in this section.

Table 5-8. Identified impacts on surroundings and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
S-1	Continuation of existing amenity impacts for neighbouring landholders for additional 13-year period, including noise, air quality, light and odour impacts.	Operation	Negative	Neighbouring Landholders – Currently Experiencing Impacts
S-2	Landholders newly affected by noise and/or visual amenity impacts from the extended Project area.	Operation	Negative	Neighbouring Landholders – Newly Impacted
S-3	Increase to overall greenhouse gas emissions (Scope 1, 2 and 3) due to mine life extension contributing to social impacts related to global climate change.	Operation	Negative	International Community

5.2.6 Aboriginal Culture and People

5.2.6.1 Aboriginal cultural heritage values

Protection of Aboriginal cultural heritage values (Impact Cu-1)

The Project would allow for the protection of Aboriginal cultural heritage sites identified as part of the Project's Aboriginal Cultural Heritage Assessment (ACHA), which would otherwise not have been identified. The ACHA concluded that a total 60 Aboriginal cultural heritage sites are known to exist within the area surveyed, including 32 previously unidentified Aboriginal cultural heritage sites (Whincop Archaeology Pty Ltd, 2020).

In discussions with Aboriginal people, two stakeholders thought that existing identified sites need further protection from degradation as current fencing was not adequately preventing access. Although the currently identified sites are fenced with wire, it was suggested that the fencing was not appropriate to prevent access and prevent disruption and should be upgraded.

Appropriate fencing to protect Aboriginal cultural heritage sites identified for the Project will be installed around all identified sites. Additionally, the existing Narrabri Mine Aboriginal Cultural Heritage Management Plan would be updated to include the Aboriginal cultural heritage sites identified for the Project and to incorporate the recommendations of the Project ACHA.

5.2.6.2 Employment of Aboriginal people

Work opportunities for Aboriginal people (Impact Cu-2)

Engagement undertaken for the SIA identified that employment and training opportunities were issues of concern for members of Aboriginal groups (Section 4.6.5). These stakeholders noted that Narrabri Mine employed Aboriginal people, but suggested that more could be done to reduce barriers to employment for Aboriginal people and to encourage Aboriginal people into higher skill positions (these suggestions are summarised in Section 6.2).

Within the area of social influence Aboriginal and/or Torres Strait Islander people had lower levels of workforce participation than the total population (in 2016), as well as lower participation levels in full-time work, and higher proportions of people looking for work (Section 4.6.3). There were around 100 Aboriginal and/or Torres Strait Islander people looking for work in both Narrabri LGA and Gunnedah LGA, with slightly higher numbers of men looking for work than women.

Aboriginal and/or Torres Strait Islander people made up 12% of the population of the area of social influence in 2016. Narrabri Mine employed 22 people in 2018 who identified as being Aboriginal and five people who identified as being both Aboriginal and Torres Strait Islander, making up 9.1% of total employees (298 employees in 2018).

The Project would ensure the continued employment of Aboriginal and/or Torres Strait Islander people at the Narrabri Mine for an additional 13 years. This is a positive impact with high significance given the high proportion of Indigenous people looking for work.

5.2.6.3 Summary of impacts identified (culture)

The table below summarises the impacts identified in this section.

Table 5-9. Identified impacts on culture and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
Cu-1	Identification of previously unknown Aboriginal cultural heritage items/values resulting in their protection and preservation.	Operation	Positive	Aboriginal groups
Cu-2	Ongoing opportunities for employment and training of Aboriginal and/or Torres Strait Islander people.	Operation	Positive	Aboriginal groups

5.2.7 Personal and Property Rights

5.2.7.1 Property rights

Fears for the saleability of nearby properties (Impact P&PR-1)

Three nearby landholders were concerned about the value of their properties due to their proximity to the existing Narrabri Mine. These landholders believed that this proximity devalued their properties by discouraging potential buyers or lowering the prices they were willing to offer due to perceived amenity impacts being experienced at the properties. One of these landholders is under negotiation for their property to be acquired as part of the Project due to identified impacts.

One of the nearby landholders' properties was for sale in November 2019. They reported that the property has been on the market for a number of years, and that they believed that the mining operation was reducing interest in their property. The landholders noted that an inability to sell was having a substantial impact on their expenses and future planning.

The differing characteristics of nearby properties and the irregularity of sales of nearby properties make a quantitative analysis of this issue difficult. Sales would also be negatively affected by the drought being experienced at the time of these landholder discussions. However, it is likely that properties near the Narrabri Mine may appeal to a smaller pool of potential buyers and would therefore take longer to sell and the price achieved may be lower than if multiple potential buyers were interested. The extension of the Project site southward would bring additional properties closer to the mine, causing similar fears to arise for their owners.

The Project may change the way that a small number of properties could be viewed by potential buyers. That is, rather than the mine being a neighbour for the medium term (11 years), it would be present for 24 years. However, the impact would only arise based on the local experience of the mines' operations associated with the extension period beginning in 2032. Driven by buyers' perceptions of amenity impact, these concerns are a reputational issue that can be addressed through good management of amenity-related impact (dust, noise) over time.

The considerable anxiety of landholders is an impact of the Project, and requires ongoing engagement with property owners by NCOPL to monitor and improve the effectiveness of amenity mitigations (noise, dust).

The impacts of stress and anxiety related to perceived impacts to property values are considered in Section 5.2.9.1.

5.2.7.2 Summary of impacts identified (personal and property rights)

The table below summarises the impacts identified in this section.

Table 5-10. Identified impacts on personal and property and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
P&PR-1	Impacted landholder aspirations driven by concerns about the saleability of nearby properties.	Planning and Operation	Negative	Nearby Local Rural Community

5.2.8 Decision-Making Systems

5.2.8.1 Decision making

Decision-making (Impact DM-1)

The engagement undertaken for the Project EIS and SIA has provided opportunities for stakeholders, including residents of the area of social influence, to provide input to the approvals process and this will continue with the public exhibition of the completed EIS. The input provided by stakeholders has been utilised throughout the SIA.

Most of the nearby landholders thought that communication could be improved from NCOPL. Four nearby landholders who participated in engagement activities undertaken for the SIA felt that they had not been included in NCOPL decision-making that impacted their lifestyles and livelihoods:

- Four nearby landholders thought that they had a lack of agency in the decision-making process of Narrabri Mine that affect their lifestyles and livelihoods, contributing to a feeling of “voicelessness”. They felt that this was primarily due to a lack of communication and engagement about decisions before they are made.
- Some of the nearby landholders reported that the discussions held for the SIA were the first time they had been approached by NCOPL for a direct conversation despite their proximity to the mine site. They reported that this had impacted their level of trust in NCOPL about the mine’s future plans.
- Nearby landholders were not satisfied with the process for making complaints to NCOPL. These landholders report frustrations with poor communication, and with the expectations of NCOPL staff requiring landholders to know the details of what was making the noise or odour before it could be investigated. Landholders reported being unsatisfied with NCOPL’s responses to complaints, and the lack of follow-up which made them feel “dismissed” by NCOPL. This created a sense that they were powerless in decision-making around minimising mine operational impacts at their property.
- One landholder felt that the CCC was not an adequate avenue for participating in a dialogue with NCOPL, believing that CCC members had conflicts of interest due to either employment at Narrabri Mine or as they were leasing properties from NCOPL.

These nearby landholders understood and accepted as appropriate that NCOPL was a business that would continue to make decisions about its activities at Narrabri Mine. However, the landholders thought that they should be earlier and better informed about planned activities and provided the opportunity to comment or suggest changes, particularly where activities have implications for their lifestyles and livelihoods. The key issue for landholders related to a lack of adequate engagement (including information sharing) between the nearby landholders and NCOPL staff and therefore the lack of any opportunity to provide input or feedback.

Ongoing timely communication and access to detailed information about future planning may assist with lessening the impact expressed by these nearby landholders.

5.2.8.2 Summary of impacts identified (decision-making systems)

The table below summarises the impacts identified in this section.

Table 5-11. Identified impacts on decision-making systems and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
DM-1	Feelings of voicelessness can be created by a lack of engagement during the decision-making process, particularly that which impacts the lifestyles and livelihoods of nearby landholders.	Planning and Operation	Negative	Nearby Landholders

5.2.9 Fears and Aspirations

5.2.9.1 Stress and anxiety for nearby landholders

Stress and anxiety for nearby landholders (Impact F&A-1 and F&A-2)

Nearby landholders who participated in engagement activities raised a number of issues related to the existing operation and Project that were causing stress and anxiety. These were grouped into three separate categories:

- Stress and anxiety related to property values, including difficulty selling.
- Stress and anxiety related to a lack of certainty about the future and limited ability to plan for the future.
- Stress and anxiety related to property acquisitions, including the delay in processing agreements.

A summary of these issues discussed in meetings with nearby landholders is provided below:

Difficulty selling

- Four nearby landholders were concerned about the value of their properties. One landholder felt ‘trapped’ as they were trying to sell their property and they felt the level of interest in the property was low due to its proximity to Narrabri Mine. This was having a substantial impact on their finances due to them having already purchased another property elsewhere. The three other landholders expressed more general concerns about whether their property would be worth less when they wanted to sell in the future.

Lack of certainty

- Four nearby landholders reported experiencing feelings which can be attributed to stress and/or anxiety due to uncertainty about whether their property would be acquired for a future mine extension. Some expected the Narrabri Mine would expand again over time, necessitating further land acquisition, and were therefore unsure as to whether they should invest in their homes and businesses given this expectation. Others felt there was a lack of long-term planning from NCOPL, and communication about these plans, which made decision-making difficult.
- One of the nearby landholders expressed the significance of the change in expectations associated with the extension. They previously viewed the Narrabri Mine as having a temporary, albeit long-term, impact on their life, however with the extension it is now permanent. The planning that they undertake is therefore likely to be very different.
- One of the local respondents to the community survey noted a lack of certainty related to the Project resulting in property value impacts, difficulty selling, and a feeling of “living in limbo”.

Process of acquisition

- Three nearby landholders that were negotiating property sales to NCOPL for the Project reported that they felt the process was unnecessarily long and complicated, and this created stress and anxiety. One noted that the inability to talk openly with neighbours about the process created feelings of uncertainty and stress.

As noted in previous sections, the Project results in a substantial psychological shift for some nearby landholders in terms of whether impacts on property values are considered temporary or permanent. This is because the extension increasing the remaining mining period from 11 years to 24 years. Many of the nearby landholders were older people, and therefore the option to retain their properties until after mine closure is no longer available. The result is stress and anxiety around the value of their property when they want to sell or need to sell, and whether investments in their properties are worthwhile.

Some landholders expected that the Narrabri Mine would be extended at some point and have been living with the uncertainty of whether or not their properties would be acquired. This has reduced their capacity to undertake long-term planning and meant living with ongoing uncertainty resulting in enduring stress and anxiety.

Approximately six properties will be acquired for the Project and some of the landholders of these properties expressed issues with the length of time it has taken to process acquisitions after agreements have been made. This is due to processes involved in getting the necessary approvals from NCOPL joint venture partners and government agencies (including, it is understood, the Foreign Investment Review Board). This has resulted in a small number of landholders waiting for a relatively long period to have their acquisition agreements processed and has created uncertainty, stress and anxiety for these landholders. It is understood however that generally the price paid for acquired properties is above market value and landholders can often lease back the property on favourable terms.

5.2.9.2 Environmental concerns

Stress and anxiety related to climate change (Impact F&A-3)

Two local respondents to the community survey and two nearby landholders expressed concerns about the Project's contribution to climate change through greenhouse gas emissions (primarily emissions from the subsequent burning of coal from the Project). The global social impacts of these emissions were considered in Section 5.2.5.2. Despite greenhouse gas emissions associated with the Project being low compared with NSW benchmark emissions, the concerns relevant in this section were expressed in a way that suggested they were of a high intensity such that they could be described as a genuine stress or fear for the future. These stakeholders are of the view that no additional mining activity should be approved and would be impacted by stress and anxiety if the Project is approved.

Concern related to groundwater (Impact F&A-4)

Stakeholders that participated in engagement, landholders and council officers raised concerns with the use of water by the mining industry. This issue was raised in general but also encompassed concerns about the allocation of water for the existing Narrabri Mine and the Project. These perceptions are heightened by the drought experienced during the time of engagement.

Numerical modelling of potential drawdown has been undertaken in the Project Groundwater Assessment (Australasian Groundwater and Environmental Consultants, 2020). The results of the modelling show:

- minimal impact as defined in the AIP (i.e. less than 2 m drawdown) is predicted in the 'highly productive' Namoi River alluvium;
- minimal impact (i.e. less than 2 m drawdown) is predicted at all privately-owned bores in 'highly productive' aquifers (including Namoi River alluvium and Pilliga Sandstone); and
- the Project is anticipated to have negligible adverse impact on groundwater quality.

Eight privately owned bores in 'less productive' aquifers are predicted to experience drawdowns exceeding the AIP minimal harm impact criterion (i.e. greater than 2 m drawdown). These bores are for stock and domestic use and are not production bores (e.g. for irrigation purposes). NCOPL would provide 'make good provisions' for impacts to these bores, such as deepening or replacing the bore and/or providing an alternative water supply of suitable quality and quantity.

With the implementation of 'make good provisions' for potential impacts to the bores in the 'less productive' aquifers, no ongoing impact to agricultural practices associated with the use of these bores is expected.

The Narrabri Mine operates an extensive existing groundwater monitoring network to monitor the response of mining operations in nearby aquifers. Ongoing monitoring of groundwater levels and quality would be used to assess the extent and rate of groundwater impacts associated with the Project. In addition, monitoring of shallow groundwater and surface water levels and quality in the vicinity of Pine, Kurrajong and Tulla Mullen creeks and of underground mine water quality is recommended by Australasian Groundwater and Environmental Consultants Pty Ltd (2020) for the Project. The monitoring network would also assist in addressing fear and anxiety expressed by stakeholders.

5.2.9.3 Summary of impacts identified (fears and aspirations)

The table below summarises the impacts identified in this section.

Table 5-12. Identified impacts on fears and aspirations and assessment of significance

Reference	Impact	Timing	Nature	Affected Parties
F&A-1	Landholder stress and anxiety from the Project, due to concerns for future property values associated with proximity to mining activity, and uncertainty about the mine's future expansion.	Planning and Operation	Negative	Neighbouring Landholders
F&A-2	Disruption, stress and anxiety experienced by landholders whose properties are acquired as a result of the Project (approximately six acquisitions).	Planning	Negative	Neighbouring Landholders – Newly Impacted
F&A-3	Community anxiety about climate change.	Operation	Negative	Community within the Area of Social Influence
F&A-4	Community anxiety about the ongoing security of groundwater supply.	Operation	Negative	Community within the Area of Social Influence

5.3 Significance Assessment

The significance of each social impact identified is assessed in the table below (Table 5-13), in line with the methodology outlined in Section 5.1. The impacts have been reordered in this table with positive impacts identified first, followed by negative impacts, and within each of these categories, impacts are ordered from most significant to least significant.

Management strategies to avoid or mitigate the identified negative social impacts and maximise the identified positive social impacts will be outlined in the next section (Section 6) and this significance assessment will be undertaken again to assess the significance of the residual impact after management strategies are applied (see Section 6.5).

Table 5-13. Identified impacts on way of life and assessment of significance

Reference	Impact	Timing	Affected Parties	Extent	Duration	Severity	Sensitivity	Consequence	Likelihood	Significance (a)
Neutral Social Impacts										
WL-1	Maintained levels of housing demand from continued operation, with a small potential increase in demand over time with ongoing localisation of the workforce.	Operation	Community within the Area of Social Influence (particularly low-income groups)	NA	NA	NA	NA	NA	NA	NA
Positive Social Impacts										
WL-2	Maintained provision of jobs and training for local residents, including young people and Aboriginal people.	Operation	Community within Area of Social Influence	Low	Medium High	Moderate	Medium Low	Moderate	Almost Certain	Very High
Comm-7	Continued community contributions supporting positive social outcomes, social infrastructure investments and/or community resilience improvements.	Operation	Community within Area of Social Influence	Medium High	Medium High	Medium Low	Low	Moderate	Likely	High
WL-3	Ongoing opportunities for local business inputs and contracts.	Operation	Local Businesses	Low	Medium High	Medium Low	Low	Minor	Likely	High
WL-4	Ongoing contribution to economic diversity and economic resilience.	Operation	Community within Area of Social Influence	Medium High	Medium High	Moderate	Medium Low	Moderate	Likely	High
Cu-1	Identification of previously unknown Aboriginal cultural heritage items/values resulting in their protection and preservation.	Planning and Operation	Aboriginal Groups	Moderate	Medium High	Moderate	Moderate	Moderate	Likely	High
Cu-2	Ongoing opportunities for employment and training of Aboriginal and/or Torres Strait Islander people.	Operation	Aboriginal Groups	Low	Medium High	Medium Low	Moderate	Moderate	Likely	High
Comm-1	The Project may attract current non-local employees to move to the area of social influence, resulting in minimal population growth (up to 40 people – workers and their families) contributing in a small way to the stabilisation of the Narrabri LGA and Gunnedah LGA population supporting viability of existing service provision.	Operation	Community within Area of Social Influence	Low	Medium High	Low	Low	Minimal	Likely	Moderate
Comm-2	Continuation of training and employment at the Narrabri Mine may assist with maintaining young adult population which may otherwise decline further.	Operation	Community within Area of Social Influence	Low	Medium High	Low	Low	Minimal	Likely	Moderate

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Reference	Impact	Timing	Affected Parties	Extent	Duration	Severity	Sensitivity	Consequence	Likelihood	Significance (a)
H&W-1	Continuing existing demand on health infrastructure for an additional 13 years.	Operation	Community within Area of Social Influence	Medium Low	Medium High	Low	Low	Minimal	Possible	Low
Negative Social Impacts										
S-1	Continuation of existing amenity impacts for neighbouring landholders for additional 13-year period, including noise, air quality, light and odour impacts.	Operation	Neighbouring Landholders – Currently Experiencing Impacts	Low	Medium High	Moderate	Low	Minor	Likely	High
S-2	Landholders newly affected by noise and/or visual amenity impacts from the extended Project area.	Operation	Neighbouring Landholders – Newly Impacted	Low	Medium High	Moderate	Low	Minor	Likely	High
Comm-4	Small number of land acquisitions (approximately six properties) would lead to a small loss of farming families over time, in turn resulting in a change to localised community composition and loss of individual personal connections.	Planning and Operation	Newly Impacted Neighbouring Landholders	Low	High	Moderate	Low	Minor	Possible	Moderate
Comm-5	The Project maintains a change in the community's sense of place from agricultural activities to extractive industries.	Planning and Operation	Community within the Area of Social Influence	Moderate	Moderate	Medium Low	Low	Minor	Possible	Moderate
Comm-6	Continuation of existing tension between community members related to the socio-economic changes within these communities; tension and competition between Narrabri and Gunnedah residents to capture the benefits of mining; and community tensions related to the perceived threat to sense of place being the change from traditional agricultural activity to inclusion of mining.	Planning and Operation	Community within the Area of Social Influence	Moderate	Moderate	Low	Low	Minor	Possible	Moderate
S-3	Increase to overall greenhouse gas emissions (Scope 1, 2 and 3) due to mine life extension contributing to social impacts related to global climate change.	Operation	International Community	Moderate	Medium High	Low	Low	Minimal	Likely	Moderate
P&PR-1	Impacted landholder aspirations driven by concerns about the saleability of nearby properties.	Planning and Operation	Nearby Local Rural Community	Low	Moderate	Moderate	Low	Minor	Possible	Moderate

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Reference	Impact	Timing	Affected Parties	Extent	Duration	Severity	Sensitivity	Consequence	Likelihood	Significance (a)
DM-1	Feelings of voicelessness can be created by a lack of engagement during the decision-making process, particularly that which impacts the lifestyles and livelihoods of nearby landholders.	Planning and Operation	Nearby Landholders	Low	Medium High	Moderate	Low	Minor	Possible	Moderate
F&A-1	Landholder stress and anxiety from the Project, due to concerns for future property values associated with proximity to mining activity, and uncertainty about the mine's future expansion.	Planning and Operation	Neighbouring Landholders	Low	Moderate	Moderate	Medium Low	Minor	Possible	Moderate
F&A-2	Disruption, stress and anxiety experienced by landholders whose properties are acquired as a result of the Project (approximately six acquisitions).	Planning	Neighbouring Landholders – Newly Impacted	Low	Medium Low	Medium Low	Moderate	Minor	Possible	Moderate
F&A-3	Community anxiety about climate change.	Operation	Community within the Area of Social Influence	High	Medium Low	Medium Low	Low	Minor	Possible	Moderate
F&A-4	Community anxiety about the ongoing security of groundwater supply.	Planning	Community within the Area of Social Influence	High	Medium Low	Medium Low	Low	Minor	Possible	Moderate
Comm-3	Continuation of existing employee and contractor employment trends maintaining a community perception that the locality is dominated by males.	Operation	Community within the Area of Social Influence	Low	Medium High	Low	Low	Minimal	Possible	Low
H&W-2	Existing incorrect perceptions of the community safety impact of resource operational workforces will continue unless challenged.	Operation	Community within Area of Social Influence	Medium Low	Moderate	Low	Low	Minimal	Possible	Low

Notes: (a) Other SIAs may utilise a different significance matrix, and therefore impacts of low, moderate, high and very high significance may be classified differently (likely as having lower significance) and may not be directly comparable.

Section 6 Management Measures

6.1 Introduction

Management measures were developed to respond to the impacts identified. Management measures were also identified by stakeholders involved in engagement and these are noted below. A number of existing policies, procedures and programs are already in place to manage impacts at Narrabri Mine, and the SIA builds on these existing platforms as required.

The term ‘management measures’ has been utilised for both negative and positive impacts, rather than using a different term for negative and positive impacts. Management measures aim to avoid or mitigate negative social impacts and maximise positive social impacts.

According to the SIA Guideline, management measures can be:

- **Performance-based:** Identifies performance criteria that must be complied with to achieve an appropriate outcome but do not specify how the outcome is to be achieved. Sufficient supporting evidence would need to be provided in the EIS to demonstrate why the performance criteria are appropriate.
- **Prescriptive:** Itemises actions that need to be taken or things that must not be done, for example, adopt a known best-practice technology, design or management approach to mitigate the impact. The applicant needs to be able to justify why this approach is appropriate by providing scientific evidence or referencing relevant guidelines or case studies.
- **Management-based:** Where the potential impacts can be satisfactorily avoided or mitigated by implementing known management approaches. Applicants should provide details on the proposed management approaches in the EIS to provide greater transparency and certainty.

The type of each management measure has been identified in later sections.

6.2 Management Measures Suggested by Stakeholders

A range of management measures were suggested by stakeholders during engagement activities to respond to the concerns they identified (Table 6-1). Often stakeholders suggested management measures without being prompted as they were enthusiastic to provide proactive suggestions to improve outcomes or overcome challenges.

Table 6-1. Management measures suggested by engagement stakeholders

Stakeholder	Suggested Management Measures
Community	<p>Current and future jobs at Narrabri Mine should prioritise local residents.</p> <p>Investment in revegetation and drought relief should be increased.</p> <p>Invest in renewable energy initiatives should be required to offset environmental impacts.</p>
Aboriginal Groups	<p>Aboriginal cultural heritage sites at Narrabri Mine should be protected – improved fencing and signage, etc.</p> <p>Programs to support skills development for Aboriginal people so they can progress into more advanced jobs at Narrabri Mine.</p> <p>Programs to encourage Aboriginal people to apply for jobs at Narrabri Mine, including:</p> <ul style="list-style-type: none"> – Information about the mine and the jobs on offer. – Site tours and open days. – Informal introduction to Narrabri Mine workers. – Pre-employment training required to support people who have never been employed before. – Utilise local training agencies and employment agencies to ensure local people are prioritised. <p>Project surface infrastructure should be positioned away from areas of cultural significance.</p> <p>Need a NCOPL/Whitehaven office in Narrabri to encourage local residents to apply for jobs.</p>

Stakeholder	Suggested Management Measures
	<p>Consider a bus between Narrabri and Narrabri Mine as not having a car is a barrier for some potential workers.</p> <p>Improve inclusiveness at Narrabri Mine and provide support for Aboriginal workers to attend family/cultural events.</p> <p>Would like a parcel of land provided to the community for cultural activities and learning.</p> <p>Tailored and targeted communication with Aboriginal people needed to communicate opportunities for employment. Narrabri Mine staff could attend meetings of Aboriginal people to inform them of job and contract opportunities.</p> <p>Consider Aboriginal-owned businesses as part of assessment of tenders in procurement decisions.</p>
Nearby Landholders	<p>A streamlined process for acquisitions is needed to reduce time taken to acquire properties.</p> <p>Improved communication is needed with nearby landholders from Narrabri Mine to keep them informed about:</p> <ul style="list-style-type: none"> – Access to properties leased by NCOPL – need to notify leaseholders beforehand when their property will be accessed by Narrabri Mine staff. – Current activities – a general update about current activities and updates on changes occurring. – Future plans – a general update about plans for the future to assist nearby landholders to plan investments and their long-term future. <p>A quarterly newsletter could help provide improved communication.</p> <p>Shorter, six-monthly access agreements would force better communication and provide an opportunity to share information.</p>
Narrabri Shire Council Officers	<p>Need to consider encouraging women to apply for positions in order to share the benefits of mining with women and men.</p> <p>Need to undertake engagement with local businesses, including a range of business associations, not just the main chambers of commerce.</p> <p>Consider local businesses as part of assessment of tenders in procurement decisions.</p> <p>Consider working with the Visitor Information Centre in Narrabri to include mining and Aboriginal history in displays in order to build pride in mining activities (not just agriculture).</p>

6.3 Existing Management Measures at the Narrabri Mine

Being an existing operation, the Narrabri Mine already has a range of policies, procedures and programs in place that manage impacts. Current relevant management measures include:

- **Community consultative committee:** The Narrabri Mine CCC meets quarterly to share information between community members and Narrabri Mine. The CCC is run in accordance with the Community Consultative Committee Guideline (NSW Government [Department of Justice], 2019). Meeting minutes are published on the Narrabri Mine website after each meeting.
- **Complaints reporting and register:** NCOPL's complaints procedure provides the mechanism through which landholders and other community members can register complaints and have them resolved. A dedicated complaints phone number is maintained and widely publicised. In accordance with the requirements of the Narrabri Mine Environmental Management Strategy (NCOPL, 2015) and Project Approval 08_0144, NCOPL records and responds to all community complaints, and provides a complaints register summary in its Annual Review each year.
- **Stakeholder engagement:** Within the wider Whitehaven, Aboriginal Community Relations Officer and Community Relations Officer positions provide ongoing engagement with stakeholders across a number of mining projects within the Gunnedah basin, including Narrabri Mine. Both of these positions are based in Gunnedah but include outreach activities throughout the Narrabri LGA. Engagement activities include:
 - Information available on the Narrabri Mine website.
 - Regular attendance at Narrabri, Boggabri and Gunnedah Business Chamber Meetings.
 - Regular meetings with representatives from NSC, GSC and Tamworth Regional Council.
 - Participation at community events such as the Boggabri Spring Fair, Gunnedah Christmas Street Fair, Narrabri Christmas Street Fair, and Narrabri Community Markets.

- Donations to and attendance at numerous local school presentations and awards.
- Regular mine tours.
- **Community contributions:** NCOPL makes community contributions as outlined in the social baseline (see Section 4.1.8), including \$1.5 million for an upgrade of the Narrabri Swimming Complex.

As noted, existing reporting frameworks include:

- Publication of quarterly Narrabri Mine CCC meeting minutes.
- Publication of quarterly complaints data (in CCC meeting minutes) and an annual summary.

6.4 Project Management Measures

A range of management measures will be implemented for the Project to address the social impacts identified, focusing on the impacts identified as being of moderate to extreme significance. There are four key strategies to realise the proposed management measures:

- Community and Stakeholder Engagement.
- Employment and Procurement Management.
- Continuation and improvement of existing Feedback and Complaints Management.
- Continuation and improvement of existing Community Investment.

The objectives and required inclusions of these measures are outlined below.

6.4.1 Community and Stakeholder Engagement

Community and stakeholder engagement should be undertaken to manage the potential impacts related to community and stakeholder relationships. The framework and actions for community and stakeholder engagement are outlined below, including performance measures for each action.

Community and Stakeholder Engagement - Framework	
Summary of Challenges and Opportunities	<p>Challenges:</p> <ul style="list-style-type: none"> • Poor existing relationships with some nearby landholders based on a lack of consistent, open and pragmatic communication. • Community cohesion challenged by tension between agriculture and mining. <p>Opportunities:</p> <ul style="list-style-type: none"> • Improved relationships with surrounding landholders. • Increased number of local residents encouraged to apply for positions, including women and Aboriginal people.
Objectives EO = Community and Stakeholder Engagement Objectives	<p>EO1: Continue to provide relevant information about Narrabri Mine operations and Project to the community.</p> <p>EO2: Continue to provide opportunities for engagement between nearby landholders and NCOPL to encourage trusted relationships.</p> <p>EO3: Build the relationship between NCOPL (and mining generally) and the community to improve community cohesion.</p> <p>EO4: Ongoing engagement between NCOPL and tourist accommodation providers to monitor demand from non-local contractors and ensure it continues to be met by camps and does not impact tourist industry.</p> <p>EO5: Ongoing engagement with other major project proponents to minimise cumulative impacts.</p>

Community and Stakeholder Engagement – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
EO1: Continue to provide relevant information about Narrabri Mine operations and Project to the community.	<ul style="list-style-type: none"> Develop strategy to ensure appropriate engagement is undertaken as part of the Project EIS exhibition period. (prescriptive) Continue to provide updated information on the Narrabri Mine website about future works and using local media. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Engagement Strategy developed for EIS exhibition period. Regular update provided.
EO2: Continue to provide opportunities for engagement between nearby landholders and NCOPL to encourage trusted relationships.	<ul style="list-style-type: none"> Individually contact relevant neighbouring landholders to inform them of the EIS exhibition period and facilitate access to documents (if requested). (prescriptive) Develop a database for recording and management of interactions with the community, including neighbouring landholders, to facilitate long-term relationships. (performance-based) Continue to maintain individual liaison with nearby landholders as agreed. (prescriptive) Continue to provide relevant information to nearby landholders and lessees about construction activities. (prescriptive) 	Neighbouring Landholders	Life of Project	<ul style="list-style-type: none"> Number of nearby landholders contacted. Database implemented. Liaison as agreed.
EO3: Build the relationship between NCOPL (and mining generally) and the community to improve community cohesion.	<ul style="list-style-type: none"> Develop strategy to ensure appropriate, transparent and ongoing engagement occurs with residents of the area of social influence, via media, online, community events and other mechanisms. (prescriptive) Regularly engage with business, community and government stakeholders. (prescriptive) Identify opportunities and initiatives to improve community cohesion, resilience and local economic development. (performance-based) Promote activities undertaken at Narrabri Mine that are of interest to the general community, including the unique characteristics of the Narrabri Mine and ingenuity/skill set of the local workforce. (performance-based) Identify ongoing opportunities that mine workforce and community can use to interact and build relationship (e.g. market days). (performance-based) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Engagement undertaken. Participation in community events or activities.
EO4: Ongoing engagement between NCOPL and tourist accommodation providers to monitor demand from non-local contractors and ensure it continues to be met by camps and does not impact tourist industry.	<ul style="list-style-type: none"> Ongoing engagement with tourist accommodation providers to understand capacity of tourism accommodation sector. (prescriptive) Proactively update recommendation for contractors to stay in workers' accommodation village or tourist accommodation based on vacancy rate of tourist accommodation. (performance-based) 	Local Businesses	Life of Project	<ul style="list-style-type: none"> Engagement undertaken/meetings attended.

Community and Stakeholder Engagement – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
E05: Ongoing engagement with other major project proponents to minimise cumulative impacts.	<ul style="list-style-type: none"> Ongoing engagement with other major project proponents to share information about construction and operation timing and feedback on impacts being experienced, particularly accommodation affordability, tourist accommodation availability, local and regional employment, etc. (prescriptive) 	Other Major Project Proponents	Planning	<ul style="list-style-type: none"> Engagement undertaken/meetings attended.

6.4.2 Employment and Procurement Management

Employment and procurement policies, procedures and programs should be developed to continue to maximise the benefits of the Narrabri Mine employment and investments within the area of social influence. The framework and actions for employment and procurement are outlined below, including performance measures for each action.

Employment and Procurement Strategy - Framework	
Summary of Challenges and Opportunities	<p>Opportunities:</p> <ul style="list-style-type: none"> Continued training opportunities for local residents and high levels of local resident employment. Continued business opportunities for local businesses.
Objectives EPO = Employment and Procurement Objectives	<p>EPO1: Prioritise local residents in employment decisions.</p> <p>EPO2: Continued availability and promotion of employment opportunities for people without any qualification or training.</p> <p>EPO3: Maintain and increase the proportion of women employed at NCOPL.</p> <p>EPO4: Maintain and increase the proportion of Aboriginal people employed at NCOPL.</p> <p>EPO5: Encourage non-local workers to move to local area.</p> <p>EPO6: Maintain engagement with local business community.</p> <p>EPO7: Prioritise local businesses in procurement decisions.</p> <p>EPO8: Prioritise Aboriginal-owned businesses in procurement decisions.</p>

Employment and Procurement Strategy – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
EPO1: Prioritise local residents in employment decisions.	<ul style="list-style-type: none"> Develop a policy for hiring decisions to prioritise the employment of local residents or encourage applicants to move to the local area. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Policy developed. Proportion of NCOPL employees residing in Narrabri and Gunnedah LGAs.
EPO2: Continued availability and promotion of employment opportunities for people without any qualification or training.	<ul style="list-style-type: none"> Undertake ongoing local promotion of employment opportunities for people without any qualification or training. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Continuation of positions not requiring qualifications or training. Local people employed in positions.
EPO3: Maintain and increase the proportion of women employed at NCOPL.	<ul style="list-style-type: none"> Develop engagement program with women (including current female NCOPL staff) to understand potential barriers to recruitment and promotion. (prescriptive) Develop ongoing program to promote available positions. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Engagement undertaken. Proportion of female NCOPL employees.

Employment and Procurement Strategy – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
EPO4: Maintain and increase the proportion of Aboriginal people employed at NCOPL.	<ul style="list-style-type: none"> • Develop engagement program with Aboriginal people (including current NCOPL staff) to understand potential barriers to recruitment. (prescriptive) • Develop ongoing program to promote positions available to Aboriginal people. (performance-based) • Develop an entry and career pathway for Aboriginal people to overcome barriers to participation in employment and higher skilled roles. (performance-based) • Offer training that will support Aboriginal people to gain employment. (performance-based) • Offer training support and mentoring program once employed to encourage progression. (performance-based) 	Local Aboriginal Groups	Life of Project	<ul style="list-style-type: none"> • Engagement undertaken. • Proportion of NCOPL employees that identify as Aboriginal or Torres Strait Islander people. • Mix of roles or wage brackets of employees that identify as Aboriginal or Torres Strait Islander people.
EPO5: Encourage non-local workers to move to local area.	<ul style="list-style-type: none"> • Work with stakeholders to encourage local settlement of non-local workers by promoting local lifestyles and opportunities and encouraging employee interaction with local community. (performance-based) • Provide prospective new employees based outside the region with information on community and lifestyle to encourage relocation. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> • Engagement undertaken with stakeholders.
EPO6: Maintain engagement with local business community.	<ul style="list-style-type: none"> • Undertake ongoing engagement with key business associations, including chambers of commerce, industry associations and industry networks to identify opportunities to strengthen local business participation in the Project supply chain. (prescriptive) 	Local Businesses	Life of Project	<ul style="list-style-type: none"> • Engagement undertaken/meetings attended.
EPO7: Prioritise local businesses in procurement decisions.	<ul style="list-style-type: none"> • Develop a policy for procurement decisions that provides weight to locally-owned businesses and businesses that employ residents of the Narrabri LGA and Gunnedah LGA. (performance-based) • Contractually require contractors to employ a proportion of local staff where possible. (prescriptive) 	Local Businesses	Life of Project	<ul style="list-style-type: none"> • Policy developed.
EPO8: Prioritise Aboriginal-owned businesses in procurement decisions.	<ul style="list-style-type: none"> • Develop a policy for procurement decisions that provides additional weight to Aboriginal-owned businesses. (performance-based) 	Local Aboriginal Groups	Life of Project	<ul style="list-style-type: none"> • Policy developed.

6.4.3 Feedback and Complaints Management

Existing feedback and complaints management processes should continue, with suggested improvements. The framework and actions for feedback and complaints management are outlined below, including performance measures for each action.

Feedback and Complaints Management - Framework	
Summary of Challenges and Opportunities	<p>Challenges:</p> <ul style="list-style-type: none"> Poor existing relationships with some surrounding landholders based on a lack of consistent, open and pragmatic communication. <p>Opportunities:</p> <ul style="list-style-type: none"> Proactive engagement and effective complaints management processes will improve the everyday experience of nearby landholders.
Objectives CO = Feedback and Complaints Management Objectives	<p>CO1: Continue existing complaints handling procedures with improvements.</p> <p>CO2: Continue existing CCC procedures. Periodically review the CCC membership with its Chair, the Department and Council, in line with the guidelines established by the Department of Planning and Environment, with the objective of encouraging diversity of CCC membership (Indigenous/non-Indigenous, male/female, community networks).</p>

Feedback and Complaints Management – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
CO1: Continue existing complaints handling procedures with improvements.	<ul style="list-style-type: none"> Continue existing complaints handling procedure, including dedicated phone line, answering machine system and quarterly reporting of complaints to CCC. (prescriptive) Review and refine complaints management process with CCC including potentially recording more detail about each complaint and gathering data on complaints adequately resolved. (performance-based) Develop strategy to demonstrate how feedback to complainant has been provided and whether complainant considered adequately resolved. (prescriptive) 	Nearby Landholders	Life of Project	<ul style="list-style-type: none"> Number of complaints. Number of complaints adequately resolved.
CO2: Continue existing CCC procedures. Periodically review the CCC membership with its Chair, the Department and Council, in line with the guidelines established by the Department of Planning and Environment, with the objective of encouraging diversity of CCC membership (Indigenous/non-Indigenous, male/female, community networks).	<ul style="list-style-type: none"> Continue existing Narrabri Mine CCC procedures. (prescriptive) Identify strategies to improve the diversity of the Narrabri Mine CCC membership to include Indigenous people, women and community members with deep connections to the community who are unconnected to the Narrabri Mine. (performance-based) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> CCC diversity strategy developed. Female membership of Narrabri Mine CCC.

6.4.4 Community Investment

Community investment provides opportunities for residents of the area of social influence to benefit from the Project beyond those directly and indirectly employed. The framework and actions for community investments are outlined below, including performance measures for each action.

Community Investments - Framework	
Summary of Challenges and Opportunities	Opportunities: <ul style="list-style-type: none"> Project benefits are shared with the whole community within the area of social influence.
Objectives CIO = Community Investment Objectives	CIO1: Develop program of ongoing community investments. CIO2: Ongoing engagement with local government and community regarding community investments.

Community Investments – Actions				
Objective	Actions	Stakeholders	Timing	Performance Measure
CIO1: Develop program of ongoing community investments.	<ul style="list-style-type: none"> Continue program of ongoing community investments via VPAs, sponsorships and donations to support local services and groups. (prescriptive) Evaluate past spending to ensure investments align with community need. (performance-based) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Program developed. Evidence of allocation of funds.
CIO2: Ongoing engagement with local government and community regarding community investments.	<ul style="list-style-type: none"> Ongoing engagement with NSC about community investments through planning agreements. (prescriptive) Ongoing engagement with NSC, GSC, the community and other stakeholders about the use of community investments through sponsorships/donations. (prescriptive) 	Community within the Area of Social Influence	Life of Project	<ul style="list-style-type: none"> Engagement undertaken/meetings attended.

6.5 Residual Significance Assessment

The residual significance assessment for the identified negative impacts after management measures are applied is provided below (Table 6-2).

Table 6-2. Residual significance assessment (negative impacts only)

Reference	Impact Description			Impact without Management		Impact with Management		
	Impact	Timing	Affected Parties	Impact Characteristics	Significance (a)	Impact Characteristics	Residual Significance (a)	Residual Impact Description
Negative Social Impacts								
S-1	Continuation of existing amenity impacts for neighbouring landholders for additional 13-year period, including noise, air quality, light and odour impacts.	Operation	Neighbouring Landholders – Currently Experiencing Impacts	Continuation of local amenity impacts.	High	As outlined in technical assessments. Engagement program to improve information and relationships with nearby landholders. Improved complaints handling and reporting.	High	No change to impact description.
S-2	Landholders newly affected by noise and/or visual amenity impacts from the extended Project area.	Operation	Neighbouring Landholders – Newly Impacted	New local amenity impacts.	High	As outlined in technical assessments. Engagement program to improve information and relationships with nearby landholders. Improved complaints handling and reporting.	Moderate	No change to impact description.
Comm-4	Small number of land acquisitions (approximately six properties) would lead to a small loss of farming families over time, in turn resulting in a change to localised community composition and loss of individual personal connections.	Planning and Operation	Newly Impacted Neighbouring Landholders	Continuation of existing local community trends.	Moderate	Land acquisition for biodiversity offset limited to minimum practical.	Moderate	No change to impact description.
Comm-5	The Project maintains a change in the community's sense of place from agricultural activities to extractive industries.	Planning and Operation	Community within the Area of Social Influence	Continued impact to sense of place.	Moderate	No management strategy suggested.	Moderate	No change to impact description.

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Reference	Impact Description			Impact without Management		Impact with Management		
	Impact	Timing	Affected Parties	Impact Characteristics	Significance (a)	Impact Characteristics	Residual Significance (a)	Residual Impact Description
Comm-6	Continuation of existing tension between community members related to the socio-economic changes within these communities; tension and competition between Narrabri and Gunnedah residents to capture the benefits of mining; and community tensions related to the perceived threat to sense of place being the change from traditional agricultural activity to inclusion of mining.	Planning and Operation	Community within the Area of Social Influence	Continuation of existing community tension.	Moderate	Engagement/ community benefit program to improve community cohesion.	Moderate	No change to impact description.
S-3	Increase to overall greenhouse gas emissions (Scope 1, 2 and 3) due to mine life extension contributing to social impacts related to global climate change.	Operation	International Community	Social impacts resulting from climate change.	Moderate	As outlined in technical assessments.	Moderate	No change to impact description.
P&PR-1	Impacted landholder aspirations driven by concerns about the saleability of nearby properties.	Planning and Operation	Nearby Local Rural Community	Impacts to aspirations and future planning.	Moderate	Engagement program to improve information and relationships with nearby landholders.	Moderate	No change to impact description.
DM-1	Feelings of voicelessness can be created by a lack of engagement during the decision-making process, particularly that which impacts the lifestyles and livelihoods of nearby landholders.	Planning and Operation	Nearby Landholders	Poor engagement creating feelings of voicelessness.	Moderate	Improved engagement during approvals process and ongoing. Improved diversity of Narrabri Mine CCC. Improved complaints handling and reporting.	Low	No change to impact description.
F&A-1	Landholder stress and anxiety from the Project, due to concerns for future property values associated with proximity to mining activity, and uncertainty about the mine's future expansion.	Planning and Operation	Neighbouring Landholders	Concern about property values. Concern about future mine plans.	Moderate	Engagement program to improve information and relationships with nearby landholders.	Moderate	No change to impact description.
F&A-2	Disruption, stress and anxiety experienced by landholders whose properties are acquired as a result of the Project (approximately six acquisitions).	Planning	Neighbouring Landholders – Newly Impacted	Disruption and concern due to acquisition.	Moderate	Engagement program to improve information and relationships with nearby landholders.	Moderate	No change to impact description.

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Reference	Impact Description			Impact without Management		Impact with Management		
	Impact	Timing	Affected Parties	Impact Characteristics	Significance (a)	Impact Characteristics	Residual Significance (a)	Residual Impact Description
F&A-3	Community anxiety about climate change.	Operation	Community within the Area of Social Influence	Concern about climate change impacts.	Moderate	No management strategy suggested.	Moderate	No change to impact description.
F&A-4	Community anxiety about the ongoing security of groundwater supply.	Planning	Community within the Area of Social Influence	Concern about groundwater supplies.	Moderate	Engagement program to improve information.	Moderate	No change to impact description.
Comm-3	Continuation of existing employee and contractor employment trends maintaining a community perception that the locality is dominated by males.	Operation	Community within the Area of Social Influence	Continuation of existing gender trends.	Low	Engagement program to encourage increased employment of women reducing likelihood of impact.	Low	No change to impact description.
H&W-2	Existing incorrect perceptions of the community safety impact of resource operational workforces will continue unless challenged.	Operation	Community within Area of Social Influence	Ongoing perceived safety impacts.	Low	Improved ongoing community engagement.	Low	No change to impact description.

Notes: (a) Other SIAs may utilise a different significance matrix, and therefore impacts of low, moderate, high and very high significance may be classified differently (likely as having lower significance) and may not be directly comparable.

6.6 Monitoring of Social Impacts

The management measures outlined in the previous sections include objectives, actions and performance measures to enable the monitoring of their implementation throughout the life of the Project.

Some of the performance measures are key social indicators which should be monitored throughout the life of the Project. These are outlined below (Table 6-3). For each social indicator, the method and frequency for collecting and reporting of monitoring data is provided.

The results of the monitoring of performance measures will be reported to the Narrabri Mine CCC quarterly and to the NSW Government.

Table 6-3. Key social indicators

Management Measure	Performance Measure/Key Social Indicator	Method and Frequency of Collection	Method of Reporting
Community and Stakeholder Engagement	Database for recording and management of community engagement is implemented.	Annually	CCC meeting notes.
	Participation in community events or activities.	Annually	CCC meeting notes.
Employment and Procurement Management	Proportion of NCOPL employees residing in Narrabri LGA and Gunnedah LGA.	At least every five years NCOPL data	CCC meeting notes and Narrabri Mine Annual Reviews.
	Proportion of female NCOPL employees.	At least every five years NCOPL data	CCC meeting notes and Narrabri Mine Annual Reviews.
	Proportion of NCOPL employees who identify as Aboriginal or Torres Strait Islander people.	At least every five years NCOPL data and ABS census data	CCC meeting notes and Narrabri Mine Annual Reviews.
	Mix of roles of NCOPL employees who identify as Aboriginal or Torres Strait Islander people, either by analysis of qualifications required (trade qualification, certificate, degree, etc.) or wage bracket (FTE).	At least every five years NCOPL data	CCC meeting notes.
Feedback and Complaints Management	Number of complaints. Number of complaints adequately resolved.	Quarterly NCOPL data	CCC meeting notes.
	Female membership of Narrabri Mine CCC.	At least every five years NCOPL data	CCC meeting notes and Whitehaven website.
Community Investments	Evidence of allocation of funds. Engagement with community members to decide allocation.	At least every five years NCOPL data	CCC meeting notes and Narrabri Mine Annual Reviews.

Section 7 Conclusion

The Project, if approved, will have a range of social impacts, including both positive and negative impacts.

The potential positive impacts of very high, high and moderate significance are:

- One positive impact of very high significance:
 - Maintained provision of jobs and training for local residents, including young people and Aboriginal people.
- Five positive impacts of high significance:
 - Continued community contributions supporting positive social outcomes, social infrastructure investments and/or community resilience improvements.
 - Ongoing opportunities for local business inputs and contracts.
 - Ongoing contribution to economic diversity and economic resilience.
 - Identification of previously unknown Aboriginal cultural heritage items/values resulting in their protection and preservation.
 - Ongoing opportunities for employment and training of Aboriginal and/or Torres Strait Islander people.
- Two positive impacts of moderate significance:
 - The Project may attract current non-local employees to the move to the area of social influence, resulting in minimal population growth (up to 40 people – workers and their families) contributing in a small way to the stabilisation of the Narrabri LGA and Gunnedah LGA population supporting viability of existing service provision.
 - Continuation of training and employment at the Narrabri Mine may assist with maintaining young adult population which may otherwise decline further.

The potential negative impacts of very high, high and moderate significance (after proposed management measures) are:

- No negative impacts of very high significance.
- One negative impacts of high significance:
 - Continuation of existing amenity impacts for neighbouring landholders for additional 13-year period, including noise, air quality, light and odour impacts.
- Ten negative impacts of moderate significance:
 - Landholders newly affected by noise and/or visual amenity impacts from the extended Project area.
 - Small number of land acquisitions (approximately six properties) would lead to a small loss of farming families over time, in turn resulting in a change to localised community composition and loss of individual personal connections.
 - The Project maintains a change in the community's sense of place from agricultural activities to extractive industries.
 - Continuation of existing tension between community members related to the socio-economic changes within these communities; tension and competition between Narrabri and Gunnedah residents to capture the benefits of mining; and community tensions related to the perceived threat to sense of place being the change from traditional agricultural activity to inclusion of mining.
 - Increase to overall greenhouse gas emissions (Scope 1, 2 and 3) due to mine life extension contributing to social impacts related to global climate change.
 - Impacted landholder aspirations driven by concerns about the saleability of nearby properties.
 - Landholders' stress and anxiety from the Project, due to concerns for future property values associated with proximity to mining activity, and uncertainty about the mine's future expansion.

- Disruption, stress and anxiety experienced by landholders whose property is acquired as a result of the Project (approximately six acquisitions).
- Community anxiety about climate change.
- Community anxiety about the ongoing security of groundwater supply.

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Appendix A. Community Survey

Narrabri Underground Mine Stage 3 Extension Project

Social Impact Assessment – Community Survey

Introduction

Narrabri Coal Operations Pty Ltd (NCOPL) is seeking consent to extend the Narrabri Underground Coal Mine under the State Significant Development provisions of the NSW Environmental Planning and Assessment Act 1979.

An environmental impact statement (EIS) is required as part of the Project's assessment approvals process. The EIS includes a social impact assessment (SIA) that is being undertaken by social planners from the firm CDM Smith.

The Project

The Project seeks to extract coal to the south of the current mine within the existing Exploration Licence area, and via the established surface infrastructure, using the existing coal handling preparation plant, rail loop, box cut and offices.

The mine area will be extended underground to gain access to additional coal reserves. This will allow a slight increase in the coal production rate (from 11Mtpa to 13Mtpa) and extension to the mine operating life of 14 years from 2031 to 2045.

The mine extension will not require significant additional workers, however the extension of the mine life will provide continued employment for local people.

More information about the Project, including a map showing the extension area, is available at:
<http://www.whitehavencoal.com.au/narrabri-mine/>

SIA Survey and Data Collection

This survey has been designed to gather information from community members, landholders, businesses and service providers in the Narrabri and Gunnedah local government areas (LGAs) to inform the SIA. The purpose of the survey is to give you the opportunity to have your say on the impacts that you feel may potentially affect you and your community.

This survey is being conducted by CDM Smith as the SIA specialist. The survey is anonymous – you do not need to provide any contact information. The information that you do provide will be stored securely and anonymously.

The survey will take approximately 15 minutes to complete.

You can complete this printed survey, and then return it by post or email:

- Post your completed survey to:
**Narrabri Coal Project SIA, PO Box 359,
Fortitude Valley Qld 4006**
- Scan and email your completed survey to:
australia@cdmsmith.com

Or, complete the survey online by visiting:
surveymonkey.com/r/Narrabri-SIA

Thank you for completing the survey.

Views About Your Community

1. Where do you live?

(Please select one)

- ☐ Adjacent to the Narrabri Coal Mine
- ☐ Baan Baa township or surrounds
- ☐ Boggabri township or surrounds
- ☐ Narrabri township
- ☐ Elsewhere in the Narrabri Shire
- ☐ Gunnedah township
- ☐ Elsewhere in the Gunnedah Shire
- ☐ Elsewhere in NSW/Australia: Please specify your postcode:

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2. How important is your town or area to you?

(Please select one)

- ☐ Extremely important
- ☐ Important
- ☐ Neither important nor unimportant
- ☐ Not very important
- ☐ Not at all important

3. How long have you lived in this area?

(Please select one)

- ☐ All of my life
- ☐ A large part of my life
- ☐ A small part of my life
- ☐ Not very long

4. What characteristics of your town or area do you value the most? For example, community characteristics, landscapes, places, buildings, views, etc.

5. Thinking about your community, how strongly do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know / Not Sure
Appropriate housing is affordable and available for most people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community, health and emergency services are good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community has a good range of education and training opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community has a good range of employment opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The local economy is strong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our natural and conservation areas are protected and well maintained.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our local cultural and heritage values are respected.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community is a safe place to live.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community is a clean and healthy place to live (including physical and mental health).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The roads in our community are generally good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of life in our community is good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community is cohesive, connected and harmonious.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People help each other out and join together in difficult times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our community responds well to change.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community opinion is considered in decision making.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel empowered to have a say in the decisions that impact my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel confident about the future of my community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments:

Project Impacts and Benefits

6. Were you aware of the Project before you read about it for this survey?
(Please select one)

- ☐ Yes
- ☐ No

7. Do you think you will be personally impacted by the Project?
(Please select one)

- ☐ Yes, positively impacted
- ☐ Yes, negatively impacted
- ☐ No
- ☐ Don't know/not sure

8. Overall, how concerned are you about the Project and its potential impacts?
(Please select one)

Not Concerned at All									Extremely Concerned
1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide a reason for your rating?

9. Do you think the Project will have a negative or positive (i.e. beneficial) impact on the following values / characteristics of your community?

	Major Negative Impact	Minor Negative Impact	No Impact	Minor Positive Impact	Major Positive Impact	Don't Know / Not Sure
Housing affordability and availability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community, health and emergency services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local business, industry and economic development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment and training opportunities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Natural and conservation areas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local cultural or heritage values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical and mental health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transport and ease of getting around.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your way of life – how you live, work, play and interact with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community attributes such as cohesion, connectedness and harmony.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The ability of your community to withstand difficult times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to have a say in decisions that impact your life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The future of your community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments regarding major negative or positive (i.e. beneficial) impacts:

Views on Agriculture, Mining and Tourism

10. How strongly do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know / Not Sure
The rural / agricultural character of the region is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The rural / agricultural character of the region is central to the Narrabri and Gunnedah regional community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mining is central to the Narrabri and Gunnedah regional community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mining has changed the Narrabri and Gunnedah region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining a balance between mining and agriculture is important.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conflicts between mining and agriculture are impacting community cohesion in the region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments:

Views on Narrabri Coal Operations Pty Ltd / Narrabri Coal Mine

11. How strongly do you agree or disagree with the following statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know / Not Sure
Whitehaven Coal contributes to our community and cares about our region.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whitehaven Coal listens and responds to community concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Narrabri Coal Mine is a good neighbour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Any additional comments:

Additional Comments

12. Do you have anything else to add?

About You

13. What industry are you employed in? If you are not currently working, please select the main industry for your household.

(Please select one)

- ☐ Agriculture and forestry
- ☐ Mining
- ☐ Manufacturing
- ☐ Construction
- ☐ Retail
- ☐ Accommodation and Food Services
- ☐ Transport, Postal and Warehousing
- ☐ Administrative and Support Services
- ☐ Public Administration and Safety
- ☐ Education and Training
- ☐ Health Care and Social Assistance
- ☐ Not applicable (currently not working, retired, studying, etc.)
- ☐ Other (Please specify):

14. What is your gender?

(Please select one)

- ☐ Male
- ☐ Female
- ☐ Other/prefer not to say

15. What is your age group?

(Please select one)

- ☐ 15 to 24 years
- ☐ 25 to 34 years
- ☐ 35 to 44 years
- ☐ 45 to 54 years
- ☐ 55 to 64 years
- ☐ 65 to 74 years
- ☐ 75+ years
- ☐ Prefer not to say

16. Do you identify as an Aboriginal or Torres Strait Islander person?

(Please select one)

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

Further Information

If you would like to register for further information about the Project, such as project newsletters, please send an email to information@whitehavencoal.com.au with your name, address and phone number and we will add you to our contacts database.

Should you have any further questions about this survey or would like to talk to the SIA team directly, please do not hesitate to contact us via email at australia@cdmsmith.com and we will email or call you back. For project related questions, please contact Narrabri Coal Operations Pty Ltd directly at (02) 6794 4755 or information@whitehavencoal.com.au.

Please include 'Narrabri Coal Mine Extension' in the subject line when contacting us by email.

Appendix B. Community Survey Results

B.1 Summary of respondent characteristics

B.1.1 Location of respondents

Of the 81 responses to the survey, a total of 41 responses were from local respondents (50.6%), that is, respondents within the Narrabri or Gunnedah LGAs, and a further 40 responses were from non-local respondents (49.4%)⁵ (Table A- 1).

Of the 41 local respondents, seven noted their location as being adjacent to the Narrabri Mine, three as Baan Baa township and surrounds, five as Boggabri township and surrounds, ten as Narrabri township, and seven from other locations in the Narrabri Shire. A further five local respondents noted their location as Gunnedah township and four noted their location as some other location in the Gunnedah Shire.

Table A- 1: Respondents by location

Location of respondent	Total
Adjacent to the Narrabri Mine	7 (8.6%)
Baan Baa township or surrounds	3 (3.7%)
Boggabri township or surrounds	5 (6.2%)
Narrabri township	10 (12.3%)
Elsewhere in the Narrabri Shire	7 (8.6%)
<i>Narrabri LGA</i>	<i>32 (39.5%)</i>
Gunnedah township	5 (6.2%)
Elsewhere in the Gunnedah Shire	4 (4.9%)
<i>Gunnedah LGA</i>	<i>9 (11.1%)</i>
Local Respondents	41 (50.6%)
Elsewhere in NSW / Australia	40 (49.4%)
Non-Local Respondents	40 (49.4%)
Total Respondents	81 (100%)

Of the non-local respondents, 39 were based in NSW, with just one respondent based outside of the state (Brisbane). Around half of the non-local respondents (18 respondents) were located in adjacent regions⁶, such as Tamworth, Liverpool Plains, Warrumbungle, Coonamble and Walgett Shires and one from further west around Cobar Shire. An additional five non-local respondents were located in Sydney, eleven were located on the Central Coast (up to Newcastle and Port Stephens), and three were from northern NSW (around Lismore).

⁵ Question 1: Where do you live?

⁶ Non-local locations were based on postcodes, however these have been converted to regions for the analysis.

Most of the rest of the survey analysis has been separated into responses from local respondents and non-local respondents. Although more detailed locations were collected, given the small number of respondents from some of these locations, it was considered inappropriate to break down and analyse the responses at this more detailed geographic scale. For example, there were only nine responses from the whole Gunnedah LGA and therefore it was not considered appropriate to analysis the data at this scale.

B.1.2 Demographic profile of respondents

The majority of respondents were female (51.9%). A further 30.9% were males and 17.3% of respondents did not provide their gender⁷ (Table A- 2).

Most of the respondents were middle aged, between 45 to 64 years (55.6%)⁸. Of the 81 respondents, 23 were 55-64 years, 22 were 45-54 years, twelve were 65-74 years and eight were 35-44 years. Only one respondent was 25-34 years and another respondent was 75 years or older. Nearly 20% of respondents did not state their age.

Table A- 2: Respondents by age group and gender

Age group	Female	Male	Other/Not Stated	Total
25 to 34 years	1 (1.2%)			1 (1.2%)
35 to 44 years	3 (3.7%)	5 (6.2%)		8 (9.9%)
45 to 54 years	13 (16.0%)	9 (11.1%)		22 (27.2%)
55 to 64 years	19 (23.5%)	4 (4.9%)		23 (28.4%)
65 to 74 years	5 (6.2%)	6 (7.4%)	1 (1.2%)	12 (14.8%)
75+ years		1 (1.2%)		1 (1.2%)
Other/Not Stated	1 (1.2%)		13 (16.0%)	14 (17.3%)
Total	42 (51.9%)	25 (30.9%)	14 (17.3%)	81 (100%)

Of the 81 respondents to the survey, ten identified as being Aboriginal and/or Torres Strait Islander people (equating to around 12% of respondents)⁹. Of the ten Aboriginal and/or Torres Strait Islander people, six were located in the local area, and four were located outside of the local area.

B.1.3 Industries of employment

Figure A-1 shows the main industries of employment for respondents¹⁰. Of the 81 respondents, 16 were employed in the Agriculture and Forestry industry and 16 were employed in the Health Care and Social Assistance industry. Three respondents were employed in the mining industry.

Of the 41 local respondents, twelve were employed in the Agriculture and Forestry industry followed by eight employed in the Health Care and Social Assistance industry. Two respondents were employed in mining.

Of the 40 non-local respondents, eight were employed in the Health Care and Social Assistance industry, and around seven respondents were not currently working (including studying, looking for work, or retired).

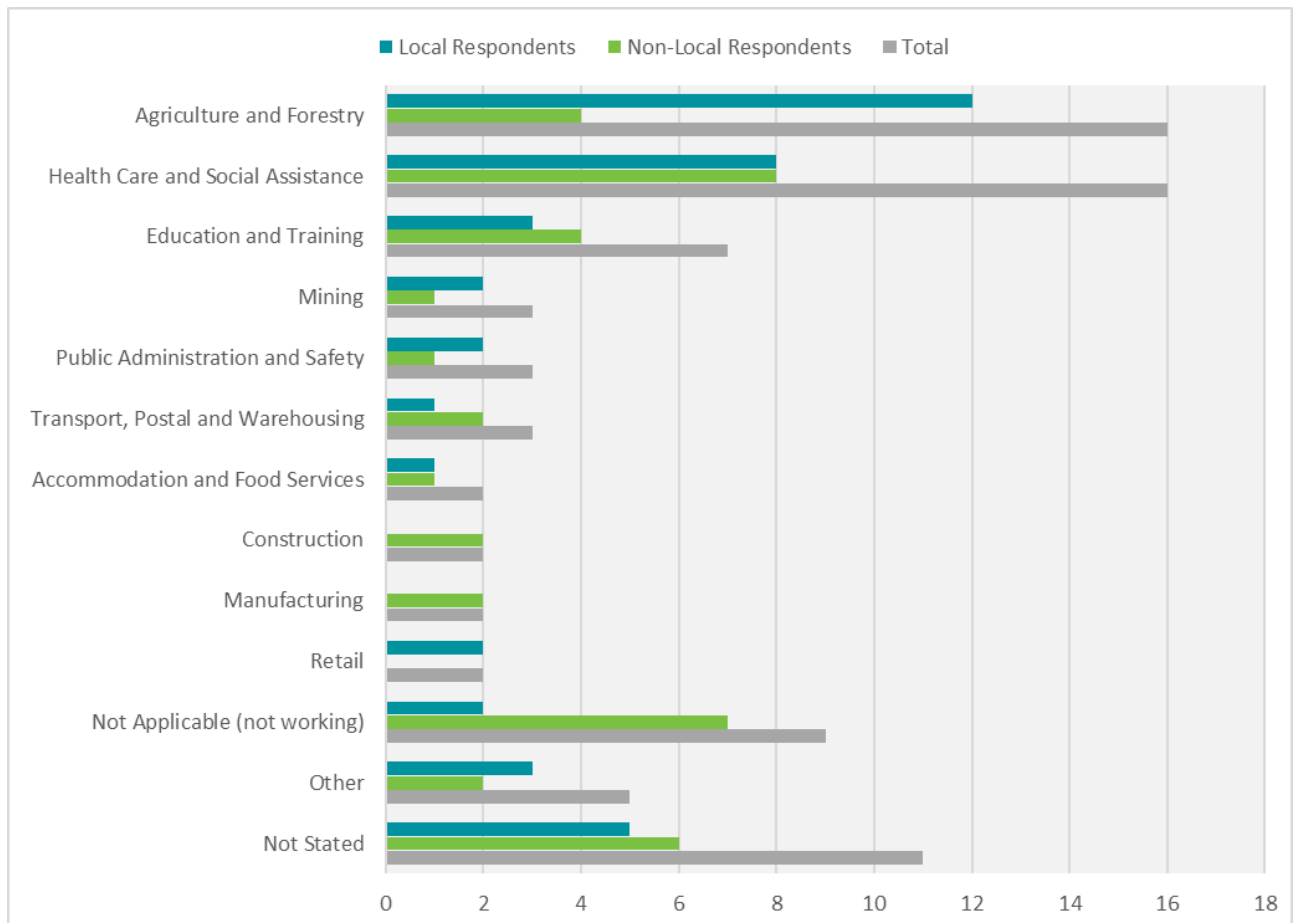
⁷ Question 14: What is your gender?

⁸ Question 15: What is your age group?

⁹ Question 16: Do you identify as an Aboriginal or Torres Strait Islander person?

¹⁰ Question 13: What industry are you employed in? If you are not currently working, please select the main industry for your household.

Figure A- 1: Main employment industry of household



B.1.4 Connection to town and area

The majority of respondents had lived in their local areas for a large part of their life¹¹ (Table A-3). This was similar for both local and non-local respondents.

Table A- 3: Time spent in the area by respondents

How long have you lived in the area?	Local Respondents	Non-Local Respondents	Total
All of my life	9 (22.0%)	8 (20.0%)	17 (21.0%)
A large part of my life	24 (58.5%)	22 (55.0%)	46 (56.8%)
A small part of my life	7 (17.1%)	9 (22.5%)	16 (19.8%)
Not very long	1 (2.4%)	1 (2.5%)	2 (2.5%)
Total	41 (100%)	40 (100%)	81 (100%)

All respondents noted that their community or town was important or very important to them¹² (Table A- 4). The majority of both local and non-local respondents noted that their community was very important to them.

¹¹ Question 3. How long have you lived in this area?

¹² Question 2: How important is your town or area to you?

Table A- 4: Importance of town to respondents

Response	Local Respondents	Non-Local Respondents	Total
Extremely important	34 (82.9%)	37 (92.5%)	71 (87.7%)
Important	7 (17.1%)	3 (7.5%)	10 (12.3%)
Neither Important nor unimportant			0 (0%)
Not very important			0 (0%)
Not at all important			0 (0%)
Total	41 (100%)	40 (100%)	81 (100%)

B.2 Local respondents

This section analyses the responses from local respondents, that is, those that noted that they live somewhere within the Narrabri or Gunnedah LGAs. There was a total of 41 respondents from the local area.

B.2.1 Views about community (local respondents)

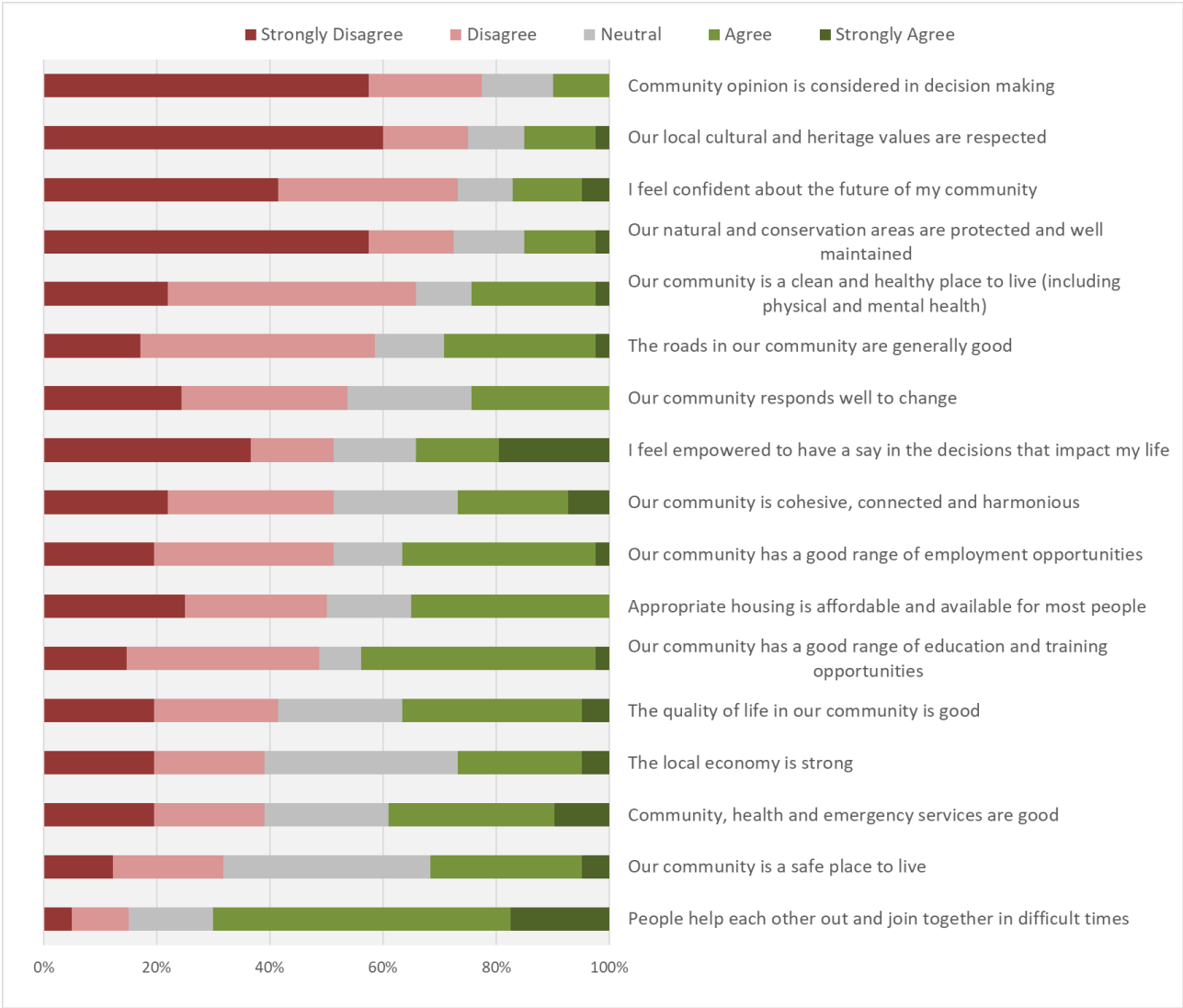
Figure A- 2 shows responses from local respondents about the perceived strengths of their local area or town¹³. The chart is ordered by the strengths that the respondents mostly disagreed with (both strongly disagree and disagree) to those that the respondents mostly agreed with (both strongly agree and agree).

Most respondents disagreed with the statement that community opinion is considered in decision-making (77.5%), that local cultural and heritage values are respected (75.0%), that they were confident about the future (73.2%), and that natural and conservation areas are protected and well-maintained (65.9%).

Conversely, most respondents agreed that people in their community help each other out and join together in difficult times (70%).

¹³ Question 5: Thinking about your community, how strongly do you agree or disagree with the following statements?

Figure A- 2: Views about community strengths (local respondents)

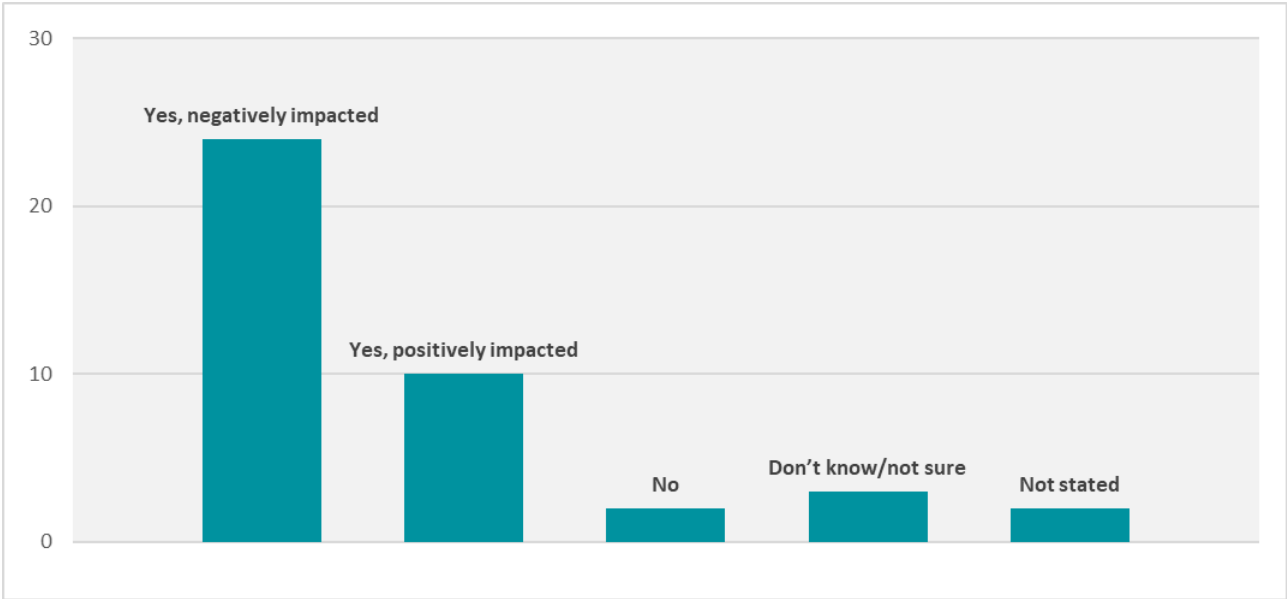


B.2.2 Project awareness and level of concern (local respondents)

Of the 41 local respondents, 33 respondents (80.5%) were aware of the Project before they read about the survey¹⁴. Most of the local respondents thought that they would be negatively impacted by the Project (24 respondents, 58.5%)¹⁵ (Figure A- 3). A further ten respondents (24.4%) thought that they would be positively impacted and two respondents (4.9%) thought that they would not be impacted at all. Three respondents did not know or were not sure if they would be impacted.

¹⁴ Question 6: Were you aware of the Project before you read about it for this survey?
¹⁵ Question 7: Do you think you will be personally impacted by the Project?

Figure A- 3: Perception of personal impacts (local respondents)



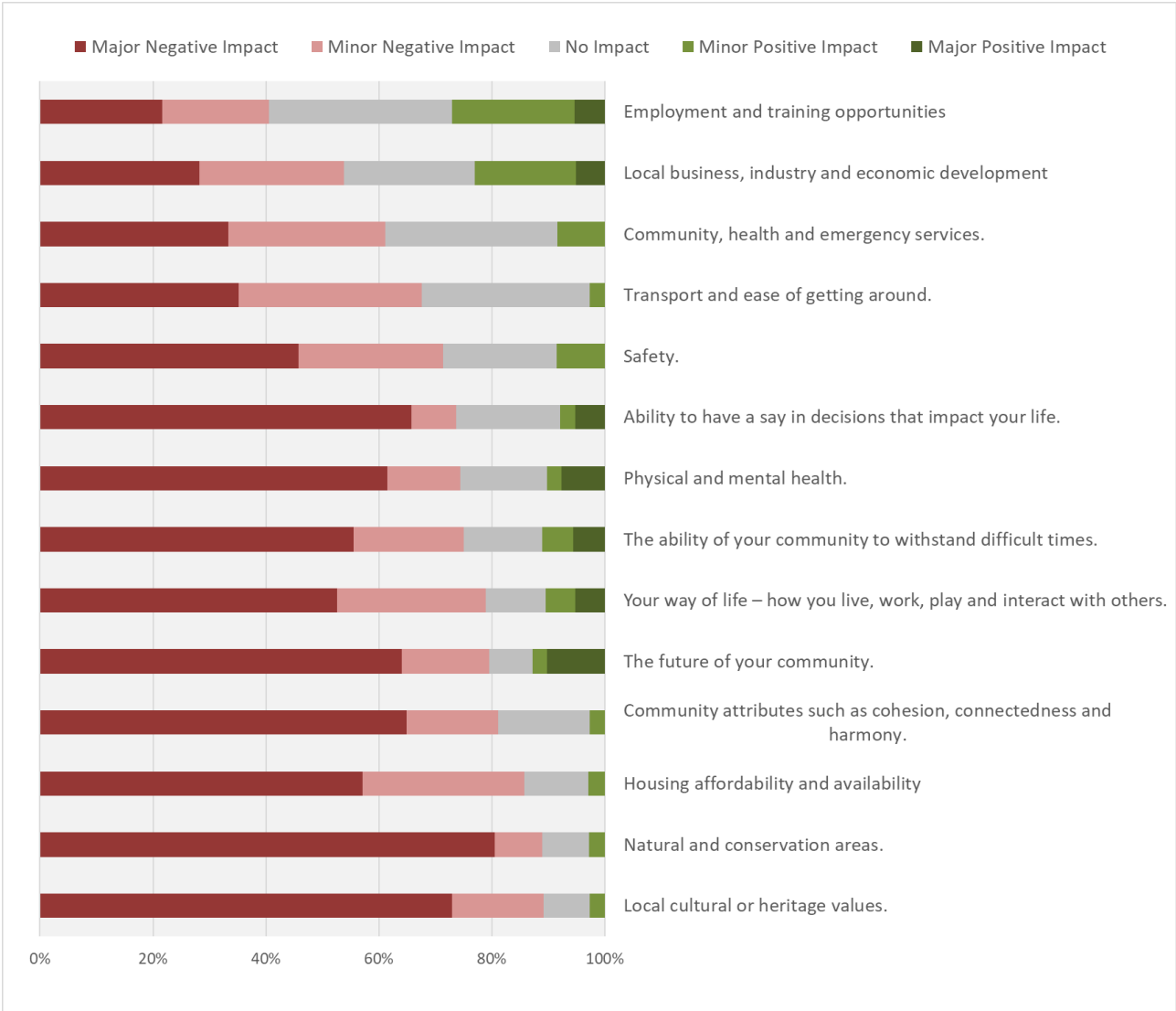
B.2.3 Views about project impacts (local respondents)

Figure A- 4 shows responses from local respondents about the impacts that they perceived the Project will have on a variety of values or characteristics of the area and community¹⁶. The chart is ordered by the values or characteristics that the respondents thought would be positively impacted (both minor and major positive impact) to those that the respondents thought would be negatively impacted (both minor and major negative impact).

Local respondents felt the Project would have a positive impact on employment and training opportunities (27.0%) and local business, industry and economic development (23.1%). However, they also perceived the Project would have negative impacts on local cultural or heritage values (89.1%) and natural and conservation areas (88.8%). Respondents also felt that there would be negative impacts with housing affordability and availability (85.6%) and community cohesion, connectedness and harmony (81.0%).

¹⁶ Question 9: Do you think the Project will have a negative or positive (i.e. beneficial) impact on the following values / characteristics of your community?

Figure A- 4: Perceived project impacts (local respondents)



B.2.4 Views about agriculture, mining and tourism and Narrabri Mine (local respondents)

Respondents were asked about their views on the importance of agriculture, mining and tourism¹⁷ (Figure A- 5).

The majority of local respondents agreed that the rural/agricultural character of the region is central to the Narrabri and Gunnedah regional community (92.1%) and that this character was important to them (92.1%). Most of the local respondents felt strongly about this character with most strongly agreeing with these statements.

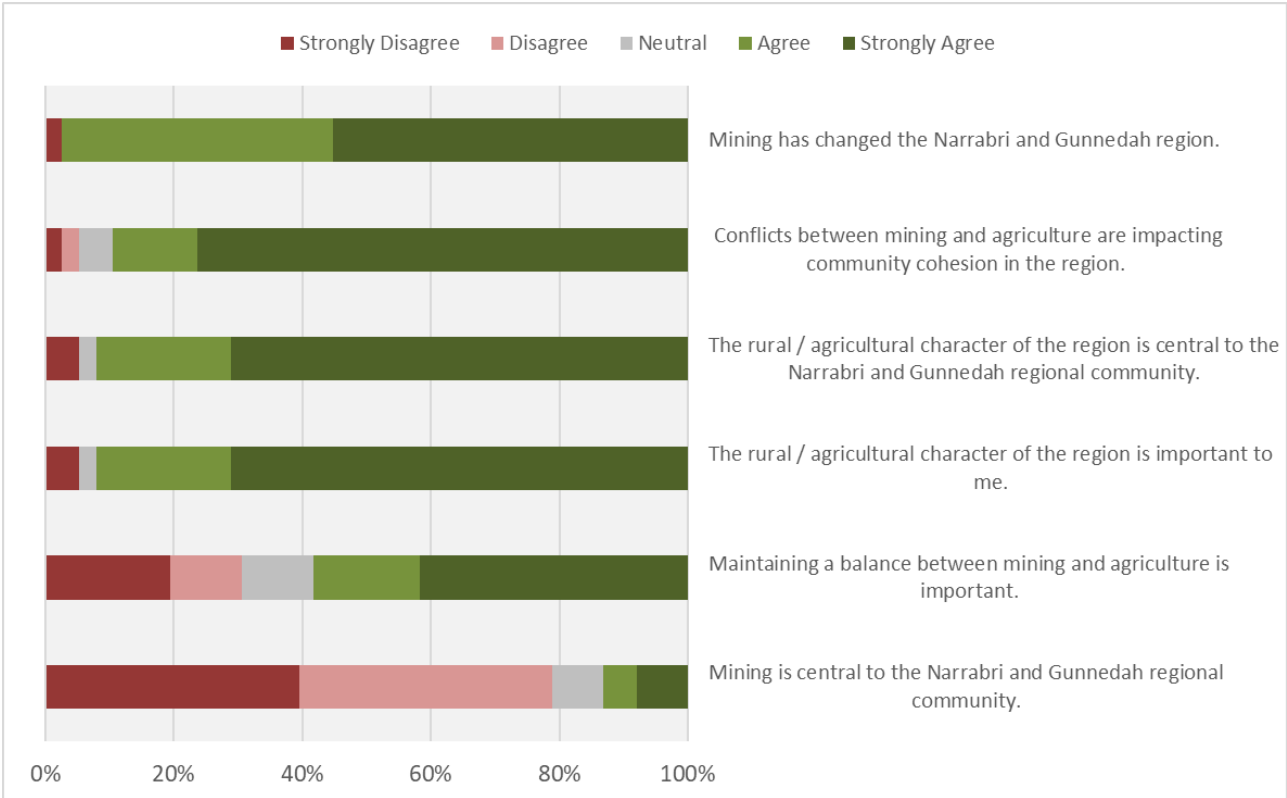
On the other hand, most local respondents disagreed with the statement that mining is central to the Narrabri and Gunnedah regional community (78.9%). Almost all respondents agreed that mining has changed the Narrabri and Gunnedah region (97.4%).

Almost 90% of local respondents agreed that there is conflict between mining and agriculture, which is impacting community cohesion in the region.

¹⁷ Question 10: How strongly do you agree or disagree with the following statements?

There were different views about whether maintaining a balance between mining and agriculture is important. It may be that this question was not clear and some respondents misinterpreted this question based on an analysis of their comments. Some respondents disagreed with the statement that maintaining balance between mining and agriculture is important and provided commentary that agriculture should be the priority (rather than balanced with mining), while other respondents agreed with the statement, but made similar arguments. The question may therefore have been misleading, and it may be more useful to consider the individual comments on this question.

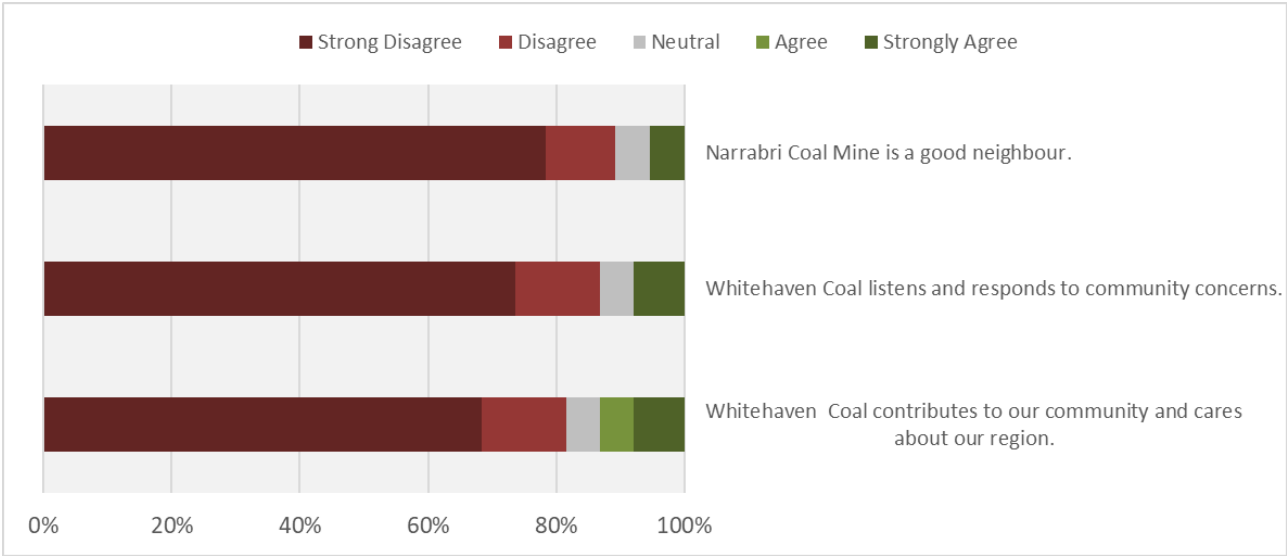
Figure A- 5: Views on agriculture, mining and tourism (local respondents)



Local respondents largely had negative views about Narrabri Mine¹⁸ (Figure A- 6). Local respondents disagreed that Narrabri Mine is a good neighbour, that Whitehaven listens and responds to community concerns and contributes to the local community.

¹⁸ Question 11: How strongly do you agree or disagree with the following statements?

Figure A- 6: Perception of Whitehaven and Narrabri Mine (local respondents)



The comments made by local respondents were mostly negative, although, many respondents were aware of the contributions made by Whitehaven to the local community.

B.3 Non-local respondents

B.3.1 Views about community (non-local respondents)

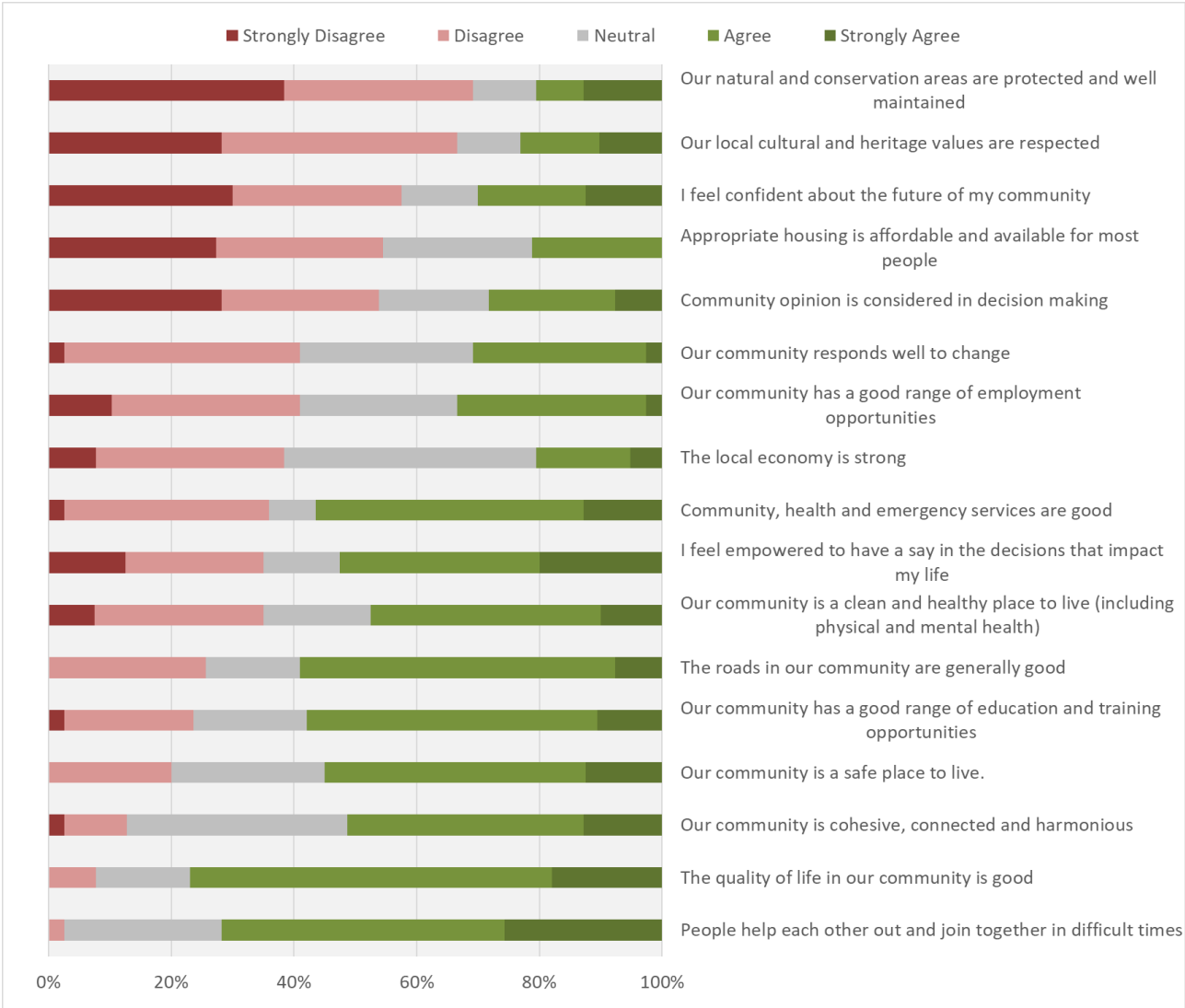
Figure A- 7 shows responses from non-local respondents about the perceived strengths of their local area or town¹⁹. The chart is ordered by the strengths that the respondents mostly disagreed with (both strongly disagree and disagree) to those that the respondents mostly agreed with (both strongly agree and agree).

Most non-local respondents disagreed with the statement that their natural and conservation areas were protected and well-maintained (69.2%), that local culture and heritage values were respected (66.7%), that they were confident about their future (57.5%), that appropriate housing is affordable and available for most people (54.5%), and community opinion is considered in decision-making (53.8%).

Conversely, non-local respondents agreed that the quality of live in their community was good (76.9%) and that people in their community helped each other out and joined together in difficult times (71.8%).

¹⁹ Question 5: Thinking about your community, how strongly do you agree or disagree with the following statements?

Figure A- 7: Views about community strengths (non-local respondents)



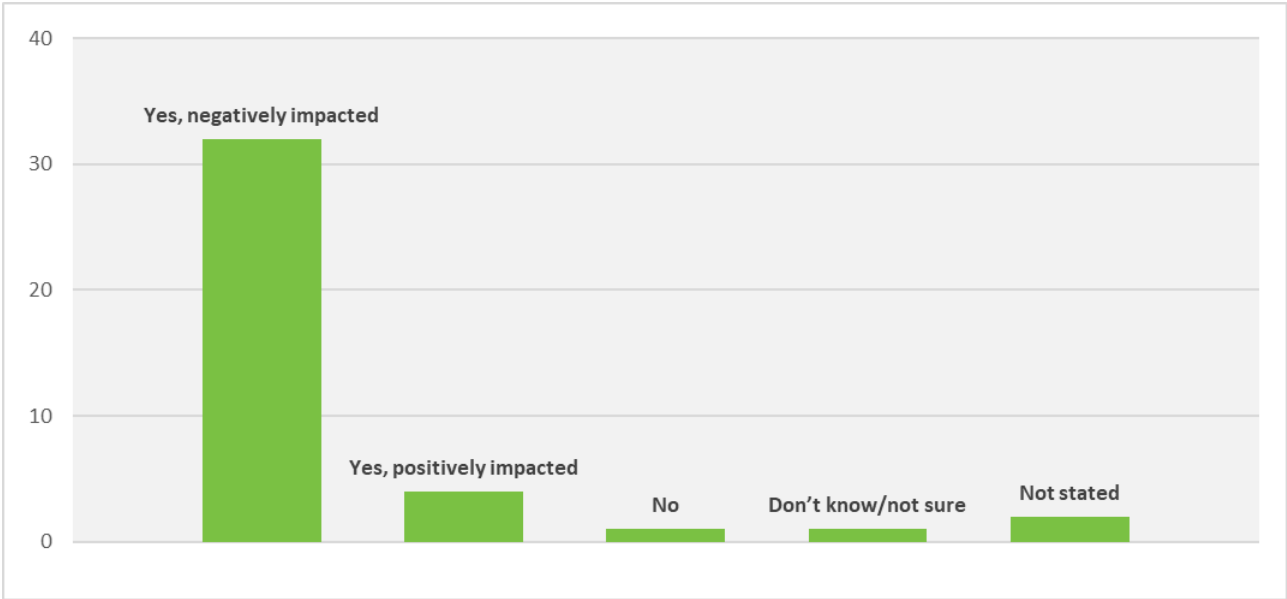
B.3.2 Project awareness and level of concern (non-local respondents)

Of the 40 non-local respondents, 29 were aware of the Project before they read about this survey (72.5%)²⁰.

Most of the non-local respondents thought that the Project would have a negative personal impact on them (32 respondents, 80.0%) (Figure A- 8). A further four non-local respondents (10.0%) thought that they would be positively impacted and one non-local respondent (2.5%) thought that they would not be impacted at all. One non-local respondent did not know or was not sure if they would be impacted.

²⁰ Question 6: Were you aware of the Project before you read about it for this survey?

Figure A- 8: Perception of personal impacts (non-local respondents)



B.3.3 Views about project impacts (non-local respondents)

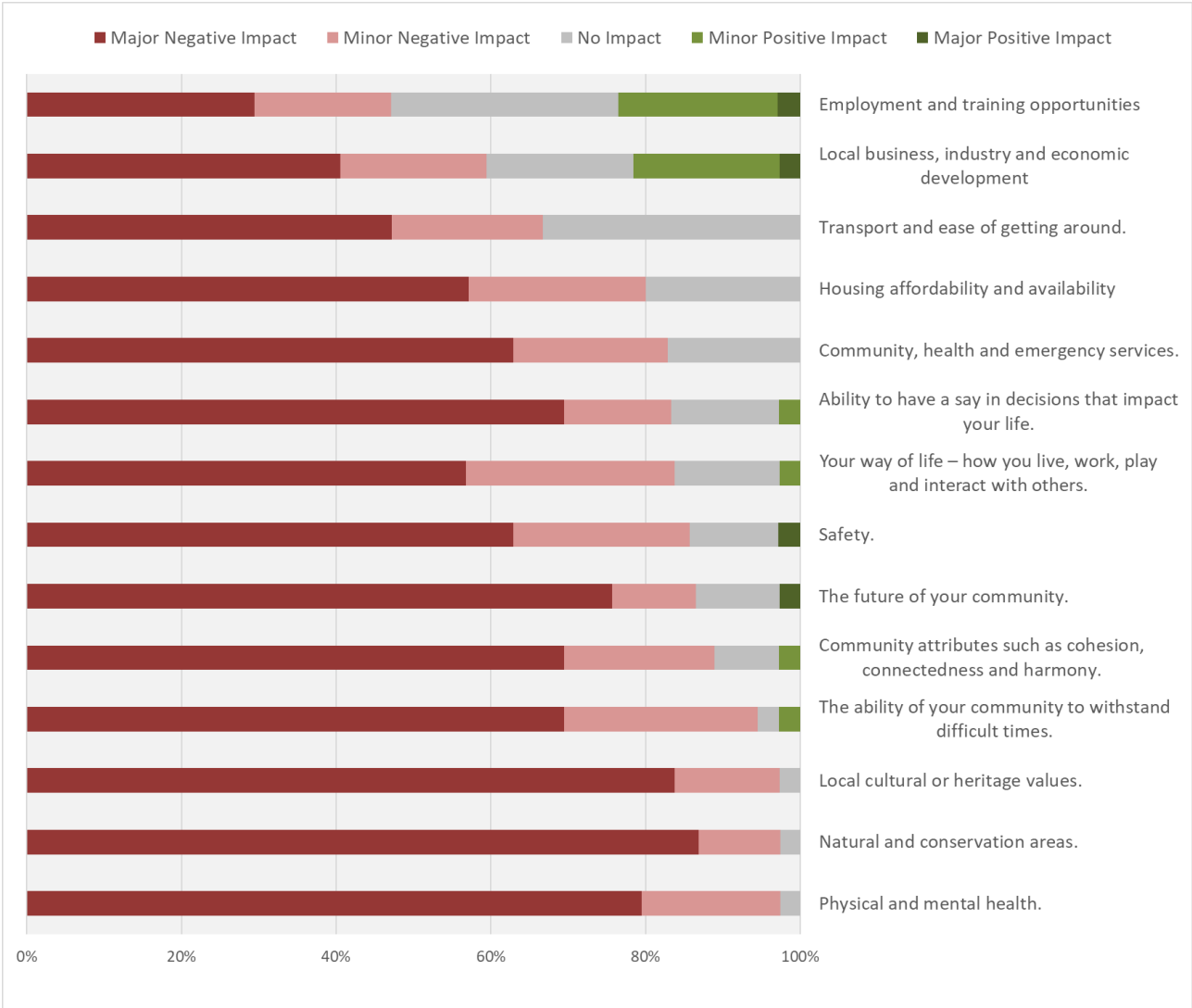
Figure A- 9 shows responses from non-local respondents about the impacts that they perceived the Project will have on a variety of values or characteristics of their area and community²¹. The chart is ordered by the values or characteristics that the respondents thought would be positively impacted (both minor and major positive impact) to those that the respondents thought would be negatively impacted (both minor and major negative impact).

Most of the non-local respondents perceived that the Project would have mainly negative impacts, however around 23.5% of non-local respondents felt that the Project would have a positive impact on employment and training opportunities and 21.6% felt it would have a positive impact on local business, industry and economic development.

However, non-local respondents perceived that there would be negative impacts to their physical and mental health (97.4%), natural and conservation areas (97.4%), local cultural and heritage values (97.3%), and the ability of the community to withstand difficult times (94.4%).

²¹ Question 9: Do you think the Project will have a negative or positive (i.e. beneficial) impact on the following values / characteristics of your community?

Figure A- 9: Perceived project impacts (non-local respondents)



B.4 Survey analysis by social baseline theme

The findings of the community survey related to the social baseline are outlined below (ordered by the number of respondents raising the issue). The findings here relate to the views of the respondents to the community survey about the existing social baseline in the Narrabri LGA and Gunnedah LGA and do not necessarily relate specifically to NCOPL or the Narrabri Mine. They are useful only in contributing to the description of the existing social baseline.

It is noted that the survey provided the opportunity for respondents to raise additional comments on the different social baseline themes/issues. The additional comments received that were relevant to the social baseline and/or social impacts of the Project are quoted in the subsections below. Quotes referenced within a social baseline theme/issue below were received from different respondents. Some of the quotes referenced across the different issues, however, were received from the same respondents.

B.4.1 Community

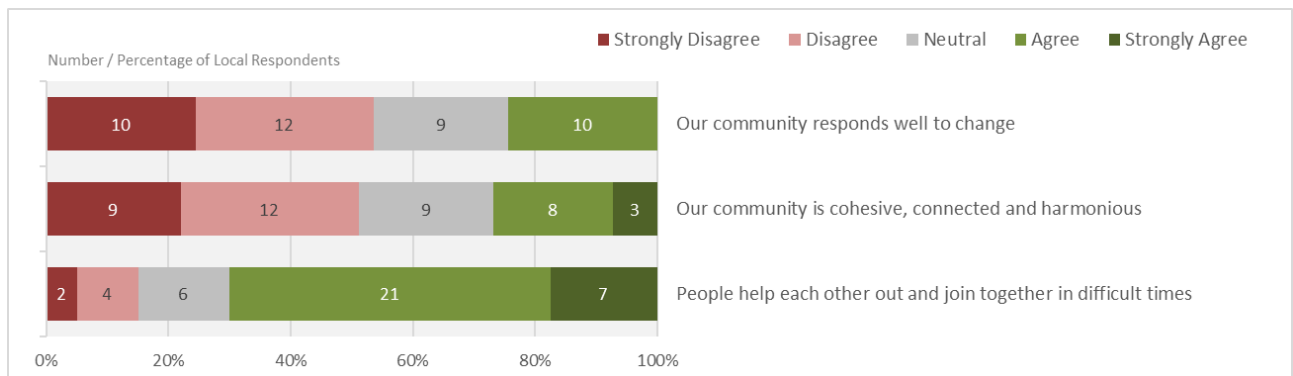
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their community. These statements were all related to elements that comprise the social baseline. There were 41 local respondents who answered this question in the community survey.

Three statements related to community impacts (Figure A- 10):

- Our community responds well to change: 24.4% of local respondents agreed or strongly agreed with this statement, which was a fairly low proportion and low compared to the other statements (12th of 17 statements).
- Our community is cohesive, connected and harmonious: 26.8% of local respondents agreed or strongly agreed with this statement, which was a fairly low proportion and low compared to the other statements (11th of 17 statements).
- People help each other out and join together in difficult times: 70.0% of local respondents agreed or strongly agreed with this statement, which was fairly high and high compared to the other statements (1st of 17 statements).

Figure A- 10: Community survey responses, Social baseline indicators for community impacts, Local respondents



Local respondents were then able to add additional comments to record opinions about their community. The additional comments related to community impacts are summarised below.

- Three local respondents thought that mining was a negative influence on local communities. One of these respondents stated:

“Coal mines never have a positive impact on their host community.” (Respondent lived in Narrabri township)

- One local respondent felt negatively towards the proponent, outlining a perceived lack of social licence to operate. They stated:

“This company has shown that it has an arrogant and self-absorbed culture, which is a detriment to our community. They have shown a complete lack of social license in previous operations.” (Respondent lived in Baan Baa township)

The community survey also asked more specific questions about sense of place and community cohesion. These questions were related to the potential incompatibilities of mining and agriculture/rural identities that were evident in Narrabri LGA based on other research (as reported in Section 4.1.6). Respondents were asked to rate how strongly they agreed or disagreed with the statements below relating to their sense of place:

- Mining is central to the Narrabri and Gunnedah regional community: 13.2% of local respondents agreed with this statement, which was a very low proportion.
- The rural/agricultural character of the region is central to the Narrabri and Gunnedah regional community: Conversely, 92.1% of local respondents agreed with this statement, which was a very high proportion.

- The rural/agricultural character of the region is important to me: Again, 92.1% of local respondents agreed with this statement, which was a very high proportion.

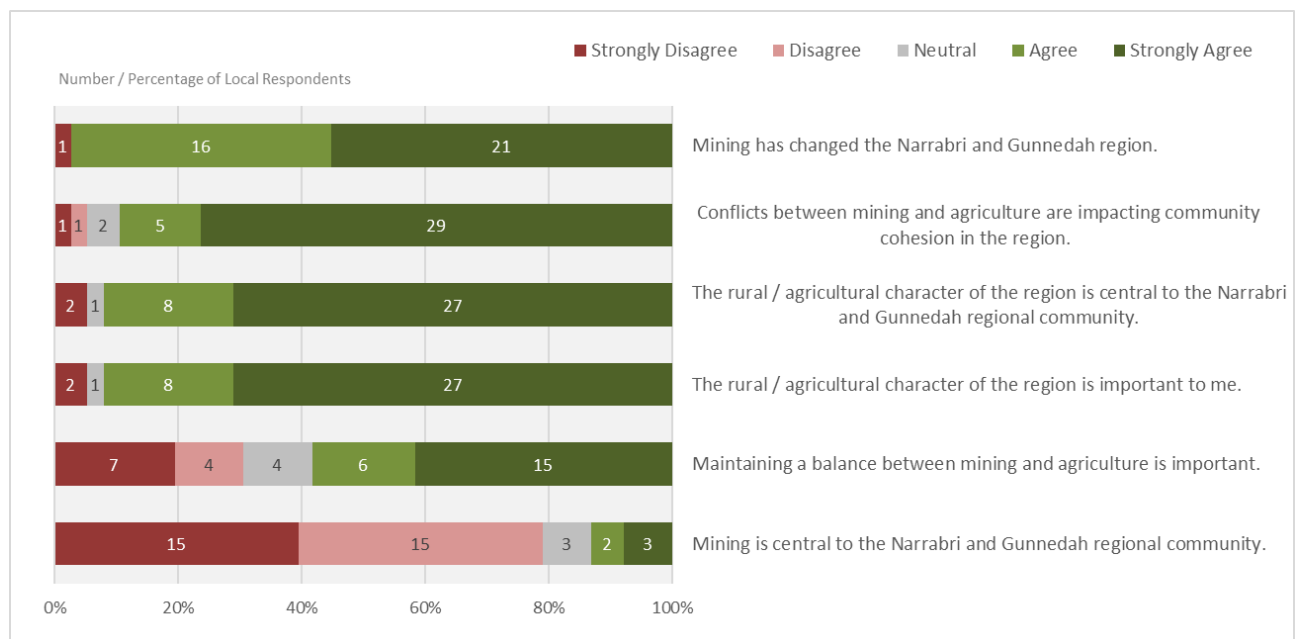
These results suggest that the rural and agricultural character of the area was considered an integral part of the sense of place by local respondents, especially in contrast to mining, which was considered by most not to be a central part of the community identity.

Respondents were asked to rate how strongly they agreed or disagreed with the statements below relating to the balance between agriculture and mining (Figure A- 11):

- Mining has changed the Narrabri and Gunnedah region: Almost all local respondents agreed or strongly agreed with this statement (97.4% agreed).
- Maintaining a balance between mining and agriculture is important: There was less agreement with this statement, with 58.3% in agreement. It was unclear from these responses whether local respondents thought it was satisfactory for there to be more mining activity or less mining activity.
- Conflicts between mining and agriculture are impacting community cohesion in the region: 89.5% of local respondents agreed or strongly agreed with this statement, which was a very high proportion.

These results suggest that the nature of the Narrabri and Gunnedah region is changing with more mining activity, and some local respondents think that this change is negatively impacting their perception of their community.

Figure A- 11: Community survey responses, Social baseline indicators for community impacts (sense of place and community cohesion), Local respondents



Local respondents were then able to provide additional comments. Additional comments related to sense of place are summarised below.

- In terms of viewing whether agriculture and mining were compatible, local respondents had a diversity of views, with one local respondent suggesting that they can co-exist, and that mining is beneficial as it provides farmers with other potential income sources during drought:

“Both agricultural and horticultural industries can co-exist with mining and a lot of farmers also work as miners to offset the drought effects on farming incomes for example.” (Respondent lived in Gunnedah township)

Three local respondents disagreed that agriculture and mining can be compatible:

“Coal mining is destroying our agricultural community.” (Respondent lived in Narrabri township)

"The only balance is maintaining the farming community and having no fossil fuel mining. I am not sure of the number of farms that have disappeared as a result of coal mining in the Narrabri Shire, my estimate is 70, with more to go." (Respondent lived adjacent to the Narrabri Mine)

"Mining is capital intensive and a small employer in the region of the North West and has disproportionately impacted the region." (Respondent lived elsewhere in the Narrabri Shire)

- One local respondent outlined changes to the composition of their local community due to the Narrabri Mine and the associated change to their sense of place.

"My 'local' area is NOT Narrabri Shire. It is, or used to be, my neighbours and others within a much smaller 'local' area. Because we are small in numbers we will continue to be dismissed and ignored by all decision makers and remain voiceless. My REAL local community has already been eroded by this mine's presence. As they expand our REAL local community continues to decline, contract, distort and become unrecognisable." (Respondent lived adjacent to the Narrabri Mine)

Additional comments related to community cohesion are summarised below.

- There were differing views about whether community cohesion was an issue, exemplified by the four additional comments below from local respondents:

"Mining and gas are already presently creating social and economic inequalities." (Respondent lived adjacent to the Narrabri Mine)

"I always feel I have to watch what I say in person or on social media, in case I'm offending someone's family member/work/employer." (Respondent lived elsewhere in the Narrabri Shire)

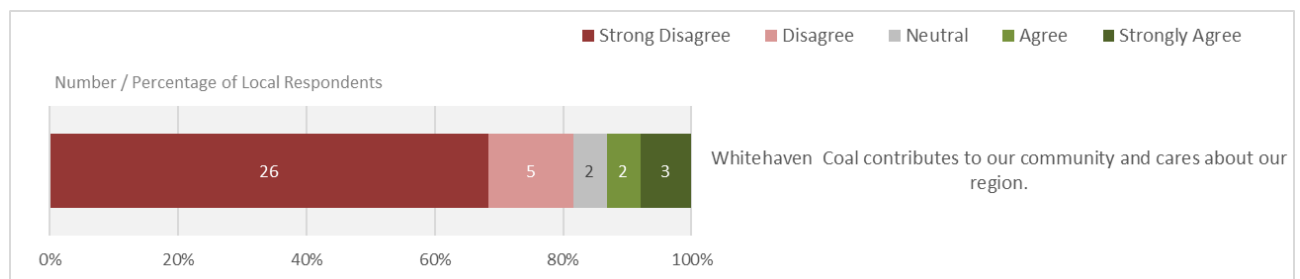
"Mining is very damaging, has divided community, added strain to those not in mining." (Respondent lived in Gunnedah township)

"Conflict exists with a small minority of the community that seek the publicity." (Respondent lived in Gunnedah township)

Local respondents were also asked about community contributions made by Whitehaven. Respondents were asked to rate how strongly they agreed or disagreed with the statement below (Figure A- 12):

- Whitehaven Coal contributes to our community and cares about our region: 13.2% of local respondents agreed or strongly agreed with this statement (81.6% disagreed).

Figure A- 12: Community survey responses, Social baseline indicators for community impacts (perception of Proponent's community involvement), Local respondents



Local respondents were able to provide additional comments for this question. Three comments acknowledged the contributions that were made by NCOPL to the local community, however, they all thought that NCOPL made contributions because it was required. They stated:

"Like all big companies that come to town, they sponsor sporting groups, make donations, etc, but it's all effectively bribes, trying to win people over. Smart people don't fall for it!" (Respondent lived elsewhere in the Narrabri Shire)

"Whitehaven do contribute to our community but they sure as hell don't care. They only contribute as much as is needed to buy us off." (Respondent lived adjacent to the Narrabri Mine)

"Virtually all contributions to the 'local' community can be explained by the ongoing conditions of their mining licence. In short, they give because they are required to." (Respondent lived adjacent to the Narrabri Mine)

Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

Three statements related to community impacts (Figure A- 13):

- Our community responds well to change: 30.8% of non-local respondents agreed or strongly agreed with this statement, which was a fairly low proportion and fairly low compared to the other statements (11th of 17 statements).
- Our community is cohesive, connected and harmonious: 51.3% of non-local respondents agreed or strongly agreed with this statement, which was a fairly high proportion when compared to other statements (8th of 17 statements).
- People help each other out and join together in difficult times: 71.8% of non-local respondents agreed or strongly agreed with this statement, which was a fairly high proportion and high when compared to other statements (2nd of 17 statements).

Figure A- 13: Community survey responses, Social baseline indicators for community impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. Additional comments related to community impacts are summarised below.

- One non-local respondent felt that mining did not reflect the values of the community in the north-west region of NSW. They stated:

"Mining in North West NSW is a major threat to our community, environment and water. There is no place for coal or CSG, it is incompatible with farming, does not reflect the values of our community and is highly destructive to our environment and threatened native species."

B.4.2 Way of Life

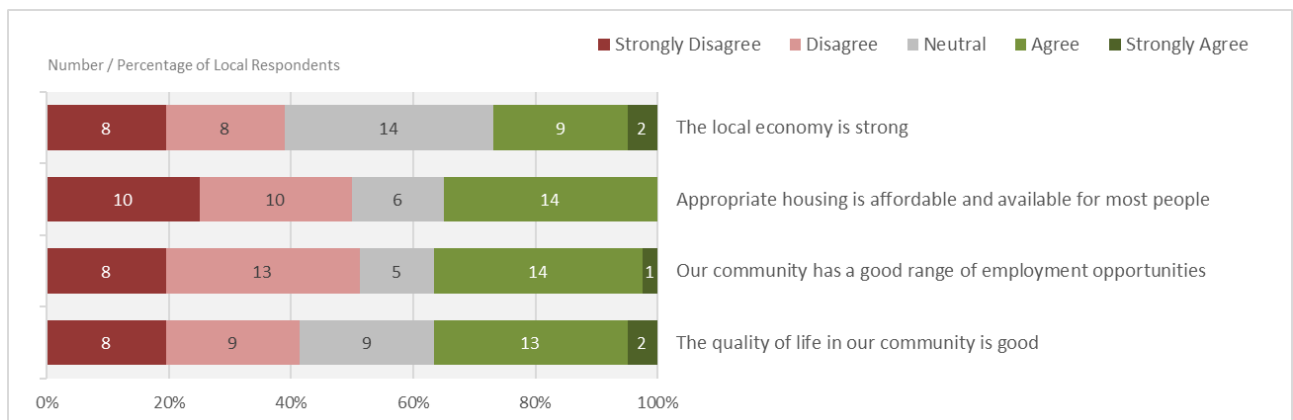
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their way of life. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

Four statements related to way of life (Figure A-14):

- The local economy is strong: 26.8% of local respondents agreed or strongly agreed with this statement, which was a fairly low proportion compared to the other statements (10th of 17 statements).
- Appropriate housing is affordable and available to most people: 35.0% of local respondents agreed or strongly agreed with this statement, which was a lower proportion, but fairly high compared to the other statements (6th of 17 statements).
- Our community has a good range of employment opportunities: 36.6% of local respondents agreed or strongly agreed with this statement, which was a lower proportion, but fairly high compared to the other statements (5th of 17 statements).
- The quality of life in our community is good: 36.6% of local respondents agreed or strongly agreed with this statement, which was a lower proportion, but high compared to the other statements (4th of 17 statements).

Figure A- 14: Community survey responses, Social baseline indicators for way of life impacts, Local respondents



Local respondents were then able to add additional comments about their community. The additional comments relating to way of life impacts are summarised below.

- Two local respondents expressed support for the mining industry due to job creation and the contribution made to economic diversity. The comments were:

"Need to take up growth opportunities that operate within legislative requirements while they exist. Diversification assists sustainability in rural communities. Picture this region's economic sector without growth in the mining sector during such a terrible drought, NOT GOOD." (Respondent lived in Gunnedah township)

"Both agricultural and horticultural industries can co-exist with mining and a lot of farmers also work as miners to offset the drought effects on farming incomes for example." (Respondent lived in Gunnedah township)

- Three local respondents expressed concerns about long-term employment opportunities in the mining sector. Two of the comments were:

"I'm worried that we are being left behind because our leaders are invested in a bad industry – Narrabri needs sustainable jobs." (Respondent lived in Narrabri township)

"The industry is not sustainable. When they go we will be much worse off as a result of having had this industry. As the saying goes there will be some short term gain but long term pain." (Respondent lived adjacent to Narrabri Mine)

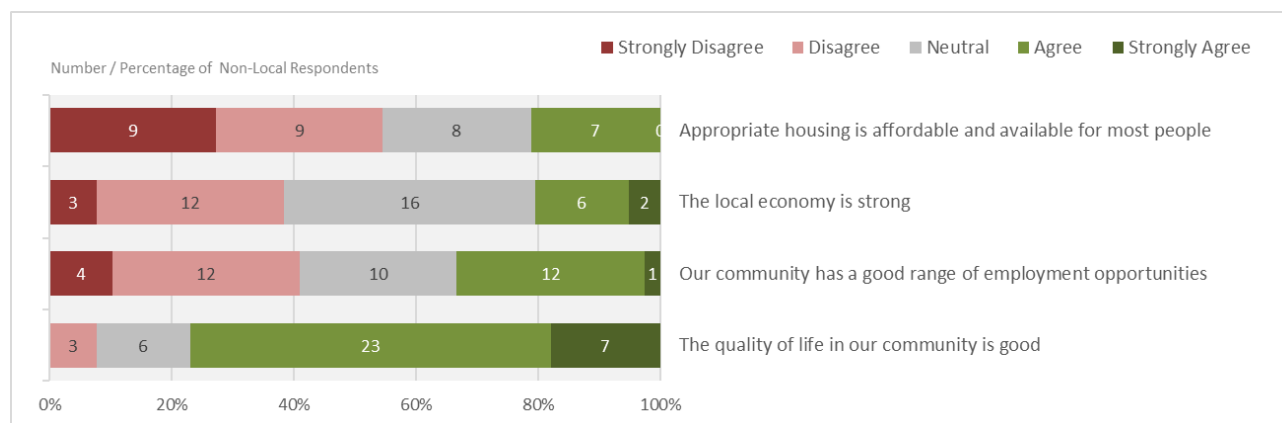
Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

Four statements related to way of life (Figure A- 15):

- The local economy is strong: 20.5% of non-local respondents agreed or strongly agreed with this statement, which was a low proportion and low compared to the other statements (16th of 17 statements).
- Appropriate housing is affordable and available to most people: 21.2% of non-local respondents agreed or strongly agreed with this statement, which was a low proportion and low compared to the other statements (15th of 17 statements).
- Our community has a good range of employment opportunities: 33.3% of non-local respondents agreed or strongly agreed with this statement, which was a lower proportion and lower compared to the other statements (10th of 17 statements).
- The quality of life in our community is good: 76.9% of non-local respondents agreed or strongly agreed with this statement, which was a high proportion and high compared to the other statements (1st of 17 statements).

Figure A- 15: Community survey responses, Social baseline indicators for way of life impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. The additional comments relating to way of life impacts are summarised below.

- One non-local respondent felt that the renewables industry was a better option for employment. They stated:

"Mining is not the answer for 'jobs and growth' renewable energy and circular economy is crucial to move forward – for our future!"

- Another non-local respondent recognised the historical importance of coal for Australia but felt that the community would suffer without a transition away from fossil fuels due to climate change. They stated:

"Climate change is a crisis and every community will suffer if we don't transition from fossil fuels. Coal has been important for Australia and for all Australians, but that is now no longer the case. Unfortunately, the mining and consumption of thermal coal must cease if our society is to survive."

B.4.3 Health and Wellbeing

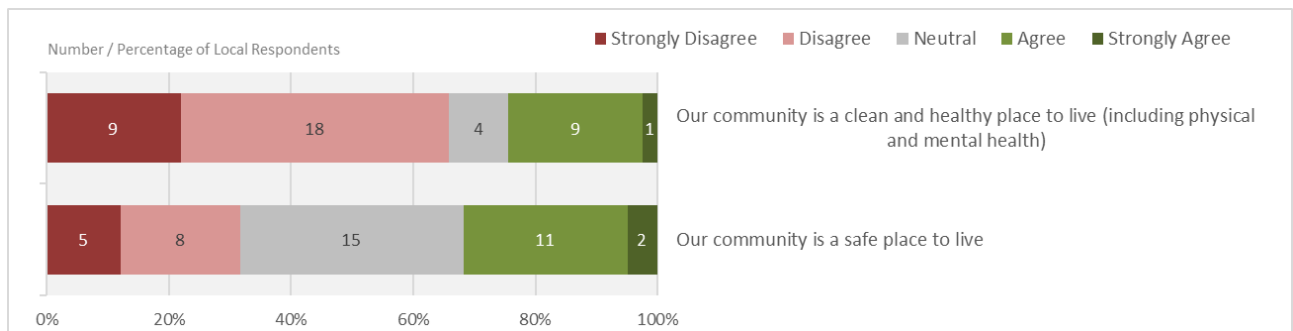
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their health and wellbeing. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

Two statements related to way of life (Figure A- 16):

- Our community is a clean and healthy place to live (including physical and mental health): 24.4% of local respondents agreed or strongly agreed with this statement, which was a lower proportion compared to the other statements (13th of 17 statements).
- Our community is a safe place to live: 31.7% of local respondents agreed or strongly agreed with this statement, which was a lower proportion compared to the other statements (8th of 17 statements).

Figure A- 16: Community survey responses, Social baseline indicators for health and wellbeing impacts, Local respondents



Local respondents were then able to add additional comments about their community. The additional comments related to health and wellbeing impacts are summarised below.

- Three local respondents mentioned airborne coal dust, although they did not specifically refer to health or wellbeing impacts arising from these issues. One of the statements was:
"There is coal dust in what was fresh air." (Respondent lived in Boggabri township or surrounds)
- One local respondent mentioned that mining contributed to safety issues, specifically theft (Respondent lived in Boggabri township or surrounds).

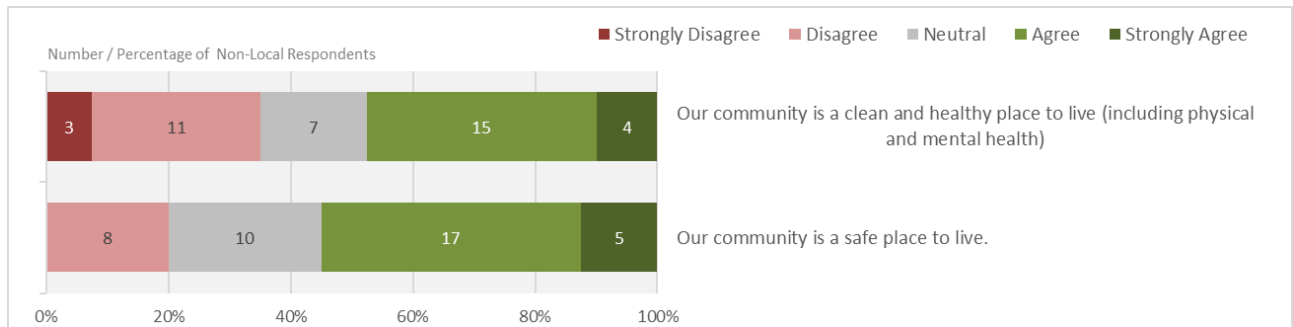
Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

Two statements related to way of life (Figure A- 17):

- Our community is a clean and healthy place to live (including physical and mental health): 47.5% of non-local respondents agreed or strongly agreed with this statement, which was a lower proportion compared to the other statements (9th of 17 statements).
- Our community is a safe place to live: 55.0% of non-local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (6th of 17 statements).

Figure A- 17 Community survey responses, Social baseline indicators for health and wellbeing impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. The additional comment related to health and wellbeing impacts are summarised below.

- One non-local respondent commented on climate change and its impact on health and wellbeing. The one respondent stated:

“Climate change will affect us all. While fossil fuels remain an energy source we are all under pressure. Our lives, our health and our food security and our farms are at risk.”

B.4.4 Infrastructure, Services and Facilities

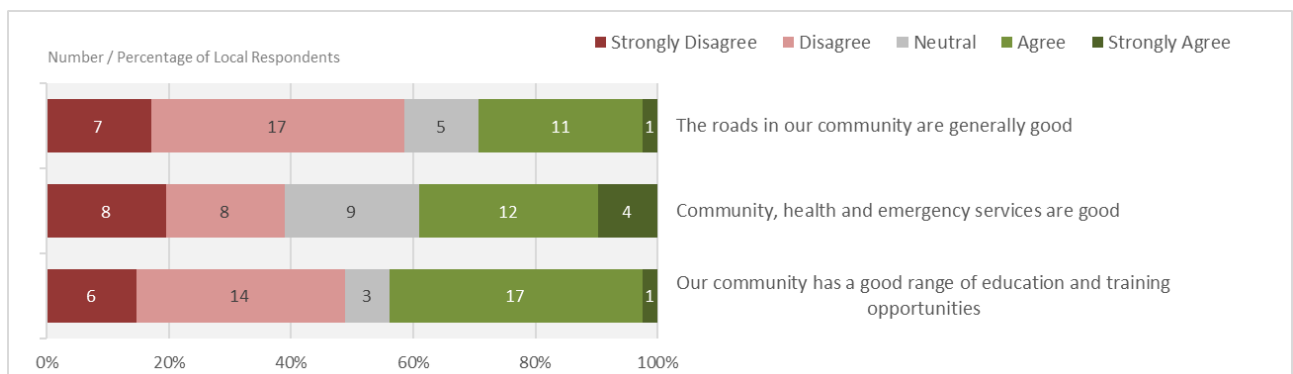
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their access to use of infrastructure, services and facilities. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

Three statements related to way of life (Figure A- 18):

- The roads in our community are generally good: 29.3% of local respondents agreed or strongly agreed with this statement, which was a lower proportion compared to the other statements (9th of 17 statements).
- Community, health and emergency services are good: 39.0% of local respondents agreed or strongly agreed with this statement, which was a higher proportion compared to the other statements (3rd of 17 statements).
- Our community has a good range of education and training opportunities: 43.9% of local respondents agreed or strongly agreed with this statement, which was a higher proportion compared to the other statements (2nd of 17 statements).

Figure A- 18 Community survey responses, Social baseline indicators for access to use of infrastructure, services and facilities impacts, Local respondents



Local respondents were then able to add additional comments about their community. The additional comments related to infrastructure, services and facilities impacts are summarised below.

- One local respondent mentioned the impact of mines buying properties, as the population reduction impacts the viability of social infrastructure. They stated:

"Mines buying up farming properties has reduced the population at Maules Creek. The school is at risk of closing." (Respondent lived in Boggabri township or surrounds)

- One local respondent suggested that shift work has contributed to a decline in participation in clubs. They stated:

"Whitehaven Coal shift hours have had a negative impact on local sporting clubs and groups." (Respondent lived in Baan Baa township and surrounds)

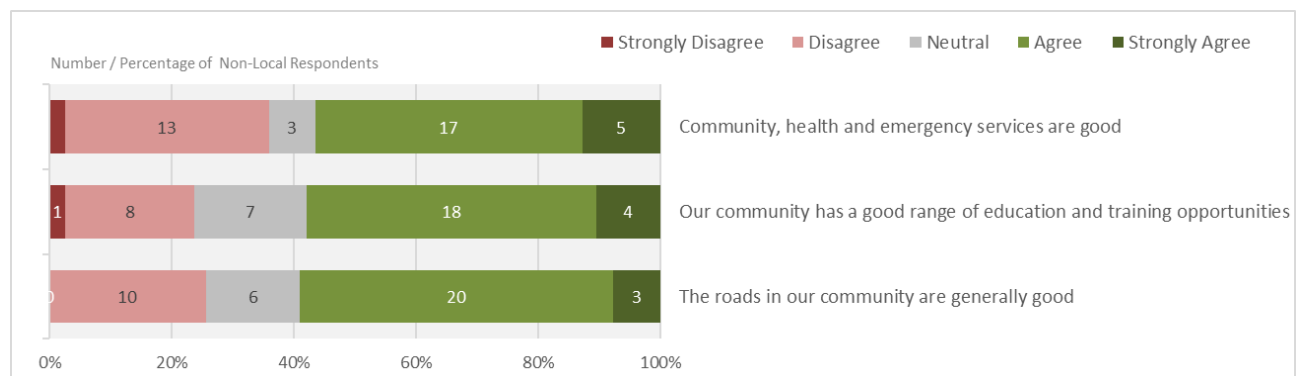
Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

Three statements related to way of life (Figure A- 19):

- Community, health and emergency services are good: 56.4% of non-local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (5th of 17 statements).
- Our community has a good range of education and training opportunities: 57.9% of non-local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (4th of 17 statements).
- The roads in our community are generally good: 59.0% of non-local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (3rd of 17 statements).

Figure A- 19 Community survey responses, Social baseline indicators for access to use of infrastructure, Services and facilities impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. The additional comments related to infrastructure, services and facilities impacts are summarised below.

- One non-local respondent was concerned with potential increased traffic as well as a perceived lack of community benefit associated with future mining development in the region. They stated:

"Although I do not live in the Narrabri area, I do believe the extension of underground mining will have a long-term impact on the Tamworth district. I believe there will be an increase of heavy vehicles using the district roads, there will be no benefits to the district in employment or economy, but there will be greater financial benefits to the mining corporations."

- Another non-local respondent felt that the government saw the farming industry as a financial burden, supporting the mining industry instead. They stated:

"Rural areas are being disregarded by the government [with] services being taken away [and] moved to larger cities. Small communities and farms are a burden on the government; they want investors and large mining corporations."

B.4.5 Surroundings

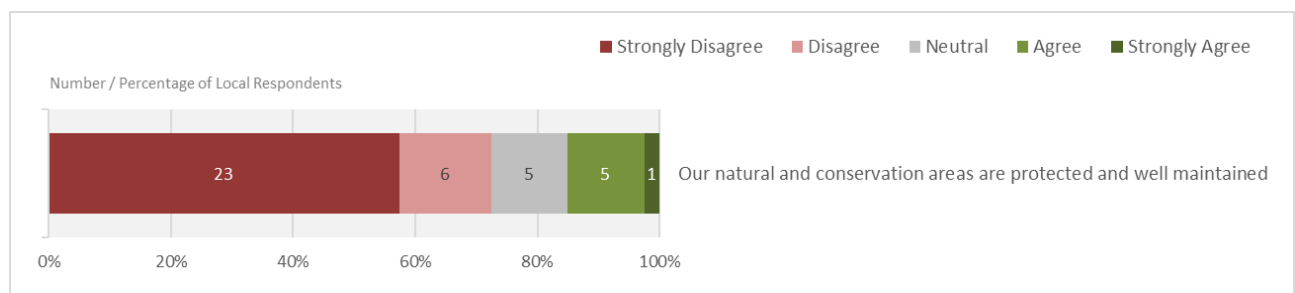
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their surroundings. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

One statement related to way of life (Figure A- 20):

- Our natural and conservation areas are protected and well maintained: 15.0% of local respondents agreed or strongly agreed with this statement, which was a low proportion compared to the other statements (15th of 17 statements).

Figure A- 20 Community survey responses, Social baseline indicators for surroundings impacts, Local respondents



Local respondents were then able to add additional comments about their community. The additional comments related to surroundings impacts are summarised below.

- Five local respondents felt that mining reduces water availability. Three of the comments were:

"Any and all [continuance] of gas and coal will inevitably lead to destruction of our iconic asset, the Great Artesian Basin, the biggest in the southern hemisphere. No water, no life, no town, no people. This genocide against the land and the security of the towns and people must stop or we will be in the dust bowl."
(Respondent lived adjacent to the Narrabri Mine)

"Risks to groundwater alone are enough to stop all forms of mining in the area, especially now with this drought. We live out of town and our only source of water is our private bore. Some neighbours have had bores run dry and have needed to drill new bores. I can only imagine this will continue to happen if mining continues to expand and affect water tables." (Respondent lived in the Narrabri LGA)

"Our water needs protection from mining." (Respondent lived in the Narrabri LGA)

- Three local respondents raised issues to do with their experience of coal dust from Narrabri Mine. Two of these respondents lived adjacent to the Narrabri Mine and one lived in Boggabri township or surrounds.

- Three local respondents raised issues to do with their experience of noise from Narrabri Mine. Two of these respondents lived adjacent to the Narrabri Mine and one lived in Boggabri township or surrounds. One of these respondents characterised the noise as “extreme noise”, while another stated:
“There is a rumble of mine machinery all night. Living close to a coal mine is not pleasant.” (Respondent lived in Boggabri township or surrounds)
- The contribution of the mining industry to climate change was raised by two local respondents. They stated:
“The future is renewables and sustainable agriculture.” (Respondent lived in the Narrabri LGA)
“Transition[ing] our region out of fossil fuels must be the goal.” (Respondent lived in Baan Baa township or surrounds)
- One local respondent raised the issue of additional traffic on the roads. They stated:
“Increased traffic on the roads has increased risks of accidents. The mines do not maintain the roads.” (Respondent lived in Boggabri township or surrounds)

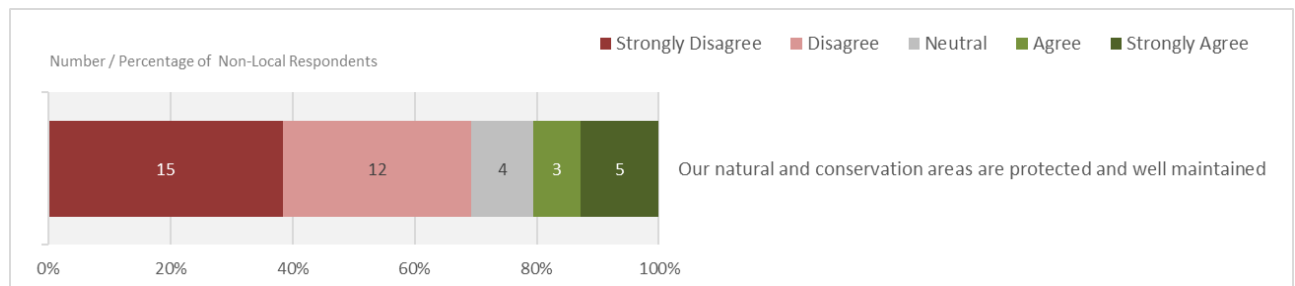
Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

One statement related to way of life (Figure A- 21):

- Our natural and conservation areas are protected and well maintained: 20.5% of non-local respondents agreed or strongly agreed with this statement which was a low proportion compared to the other statements (16th of 17 statements).

Figure A- 21 Community survey responses, Social baseline indicators for surroundings impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. For non-local respondents, surroundings impacts related to water and climate change were most relevant. The additional comments relating to surroundings impacts are summarised below.

- One non-local respondent felt that conditions on mining approvals did not safeguard the environment. They stated:
“I object to the current and proposed coal mining projects because I do not believe that strong enough safeguards are in place for the environment, rivers and ground waters. [...]”

- One non-local respondent was concerned about the general environmental impact of mining. They stated:

"I have moved to this region from the city. I admire this land and hate to see it plundered by further mining. These coal projects are unnecessary and inviable in the long term I strongly DISAGREE with this project. Save the land and water for our future. What environmentally respectful example are we showing our children by approving this expansion? No from us."

- Three non-local respondent voiced concerns about climate change. They stated:

"I believe that for the future of our planet, all coal and fracking should end immediately."

"I have dealt with catastrophic fire, on the increase due to global warning of which coal mines are a large cause. It traumatised me and my community."

"Coal should no longer be mined as its use is a major cause of the Climate Emergency."

B.4.6 Culture

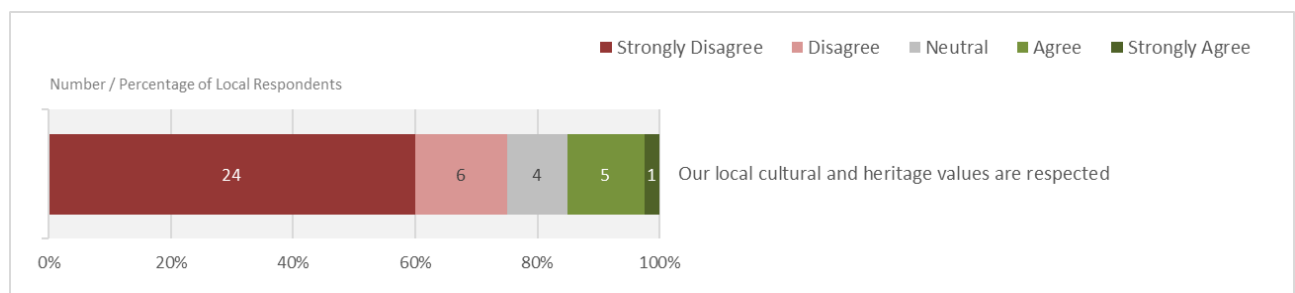
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their culture. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

One statement related to way of life (Figure A- 22):

- Our local cultural and heritage values are respected: 15.0% of local respondents agreed or strongly agreed with this statement, which was a low proportion compared to the other statements (16th of 17 statements).

Figure A- 22 Community survey responses, Social baseline indicators for cultural impacts, Local respondents



Local respondents were then able to add additional comments about their community. The additional comments relating to cultural impacts are summarised below.

- Two local respondents felt that the local Aboriginal people (Gomerioi people) were not valued. They stated:

"I have seen constant misuse of land and water in my 56 years. I feel the Gomerioi are disrespected and undervalued in their cultural need and responsibility to country." (Respondent lived in Gunnedah LGA)

"The destruction and disregard for Aboriginal culture and heritage is gut wrenching." (Respondent lived in Gunnedah township)

- One local respondent thought that mining was inconsistent with Aboriginal culture:

"Mining cannot co-exist with Gomerioi." (Respondent lived in Narrabri township)

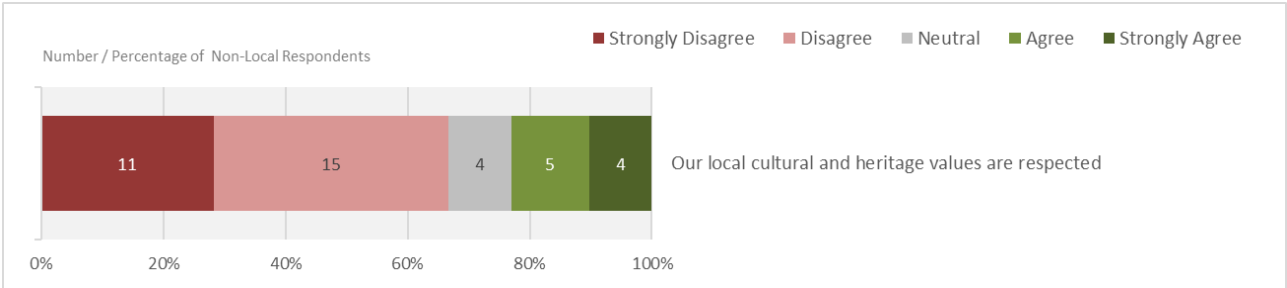
Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

One statement related to way of life (Figure A- 23):

- Our local cultural and heritage values are respected: 23.1% of non-local respondents agreed or strongly agreed with this statement which was a low proportion compared to the other statements (14th of 17 statements).

Figure A- 23 Community survey responses, Social baseline indicators for cultural impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community, however, no comments relating to cultural and heritage values were provided.

B.4.7 Personal and Property Rights

There were no question or comments from the community survey relating to personal and property rights.

B.4.8 Decision-Making Systems

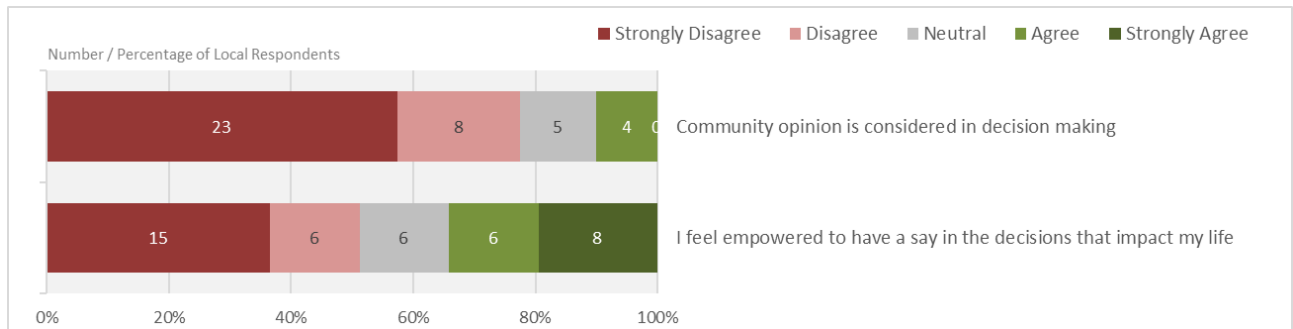
Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their decision-making systems. These statements all relate to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

Two statements related to way of life (Figure A-24):

- Community opinion is considered in decision-making: 10.0% of local respondents agreed or strongly agreed with this statement which was the lowest proportion of all statements (17th of 17 statements).
- I feel empowered to have a say in the decisions that impact my life: 34.1% of local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (7th of 17 statements).

Figure A- 24 Community survey responses, Social baseline indicators for decision-making systems impacts, Local respondents



Local respondents were then able to add additional comments about their community. Additional comments relating to impacts on decision-making systems are summarised below.

- Three local respondents expressed a lack of trust in government. Two of these respondents stated:

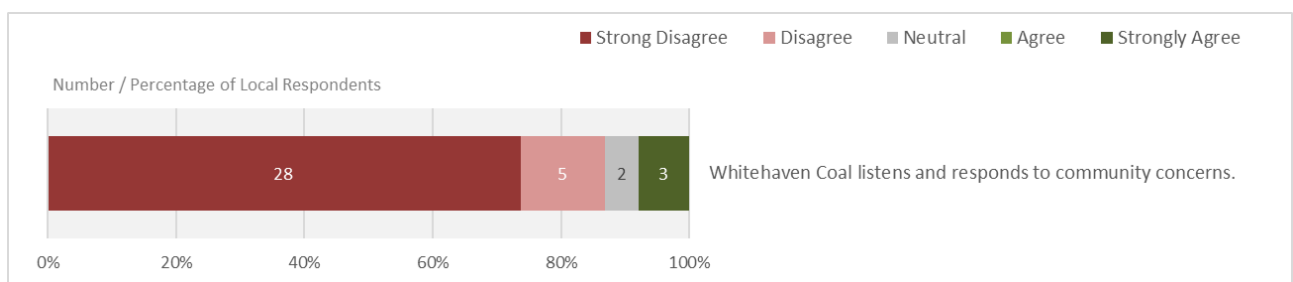
"[I] have lost trust and faith in our institutions both Government and otherwise. They will lie to get their way." (Respondent lived adjacent to Narrabri Mine)

"I don't trust the NSW Planning Department to plan for a sustainable future or to protect our climate. Appalling." (Respondent lived in Narrabri LGA)

The community survey also asked a more specific question about the responsiveness of NCOPL to community concerns. Local respondents were asked to rate how strongly they agreed or disagreed with the statement below relating to being able to influence decision-making of NCOPL:

- Whitehaven Coal listens and responds to community concerns: 7.9% of local respondents agreed or strongly agreed with this statement (86.8% disagreed). The survey did not ask whether respondents had complained directly to NCOPL.

Figure A- 25 Community survey responses, Social baseline indicators for decision-making systems impacts (perception of Proponent's responsiveness to concerns), Local respondents



Non-local respondents

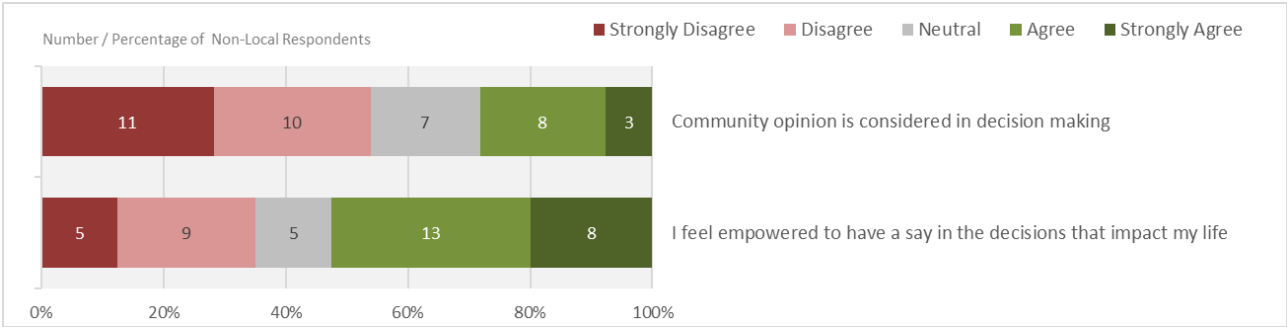
Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

Two statements related to way of life (Figure A- 26):

- Community opinion is considered in decision-making: 28.2% of local respondents agreed or strongly agreed with this statement, which was a low proportion compared to the other statements (13th of 17 statements).

- I feel empowered to have a say in the decisions that impact my life: 52.5% of local respondents agreed or strongly agreed with this statement, which was a high proportion compared to the other statements (7th of 17 statements).

Figure A- 26 Community survey responses, Social baseline indicators for decision making systems impacts, Non-local respondents



Non-local respondents were then able to add additional comments about their community. The additional comments relating to decision-making systems impacts are summarised below.

- Three non-local respondents expressed concerns about decision-making systems with regard to industry influence and government decisions:

“Gas and coal mining are abus[ing] [us] with the amount it steals from the Australian people. Our government, state and federal, prefer to protect corporations rather than the people they are supposed to support and protect. The abuse of our tax dollars to these industries and the small amount of tax they contribute to the economy is corrupt and criminal.”

“[Heavy] industry has too much control over regional communities.”

“Our people are basically powerless! MPs no longer serve their constituents they serve their donors and big corporates. There is massive opposition to expansion of fossil fuel projects in our region – CSG and coal and yet these projects seem to get the tick. When are we going to wake up!? Our environment is in crisis and any expansion to such projects is irresponsible and not in the best interests of our community or planet.”

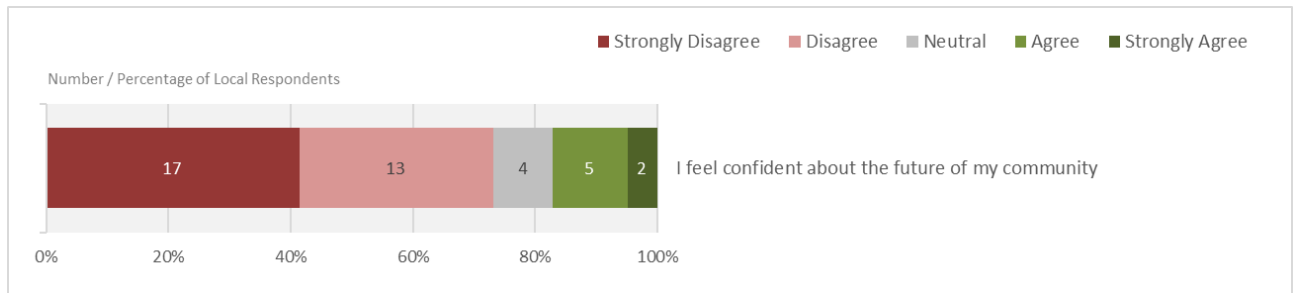
B.4.9 Fears and Aspirations

Local respondents

Respondents were asked to rate how strongly they agreed or disagreed with 17 statements about their fear and aspirations. These statements are all related to elements of the social baseline. There were 41 local respondents who answered this question in the community survey.

One statement related to fears and aspirations (Figure A- 27):

- I feel confident about the future of my community: 17.1% of local respondents agreed or strongly agreed with this statement, which was a low proportion compared to the other statements (14th of 17 statements).

Figure A- 27 Community survey responses, Social baseline indicators for fears and aspirations impacts, Local respondents

Local respondents were then able to add additional comments about their community. The additional comments related to fears and aspirations impacts are summarised below.

- One local respondent was concerned about the contribution of mining to carbon emissions. They stated:

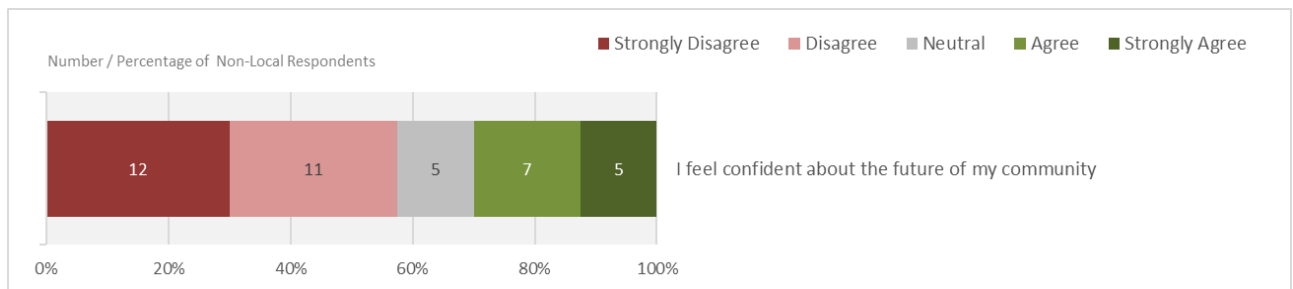
"We are in a climate change emergency and ALL coal mining needs to stop." (Respondent lived in Narrabri LGA)

Non-local respondents

Non-local respondents were also asked to rate how strongly they agreed or disagreed with the 17 statements about their community. These statements were all related to elements of the social baseline. There were 40 non-local respondents who answered this question in the community survey.

One statement related to way of life (Figure A- 28):

- I feel confident about the future of my community: 30.0% of local respondents agreed or strongly agreed with this statement, which was a low proportion compared to the other statements (12th of 17 statements).

Figure A- 28 Community survey responses, Social baseline indicators for fears and aspirations impacts, Non-local respondents

Non-local respondents were then able to add additional comments about their community. The additional comments relating to impacts on fears and aspirations are summarised below.

- Two non-local respondents expressed serious concern about the impacts of climate change. They stated:

"I am extremely concerned and distressed by ongoing government policies that favour mining industries over agriculture, particularly in regard to the allocation of water, which continues even during the climate change-induced severe drought that we are currently enduring."

"Climate change is leading to a desperate situation. We need to take urgent action and it is not being done. Emissions continue to increase driving the planet towards catastrophe with current extinctions approaching dangerous levels for the survival of humanity. More coal is simply not an option. This coal should be left in the ground as a matter of criminal negligence by the government."

Appendix C. Review of Strategies

Note: The following strategies were completed more than five years ago, and the findings may be out of date. The findings relevant to the study have been summarised in the report, where not related to potentially outdated material.

Economic development strategies and planning

Narrabri Shire Economic Development Strategy 2011-2016.

The Narrabri Shire Economic Development Strategy 2011-2016 prepared by AEC Group (2011) provides strategic direction to diversify the economy. The vision of the strategy is *“to facilitate the growth and development of a vibrant, sustainable and diversified economy that value adds to the region’s resources and provides a quality living environment and prosperous future for all residents and communities”*.

Economic strengths, weaknesses, opportunities and threats were identified for the Narrabri Shire economy. Those potentially related to the Project are shown below (Table A- 5).

Table A- 5 Economic strengths, weaknesses, opportunities and threats, Narrabri LGA

Strengths	Weaknesses
Fertile agricultural land and good climate Well established and productive agricultural sector Extensive coal and gas reserves in the region and several planned mines Strong presence of agricultural and research institutions Suitable enabling infrastructure including transport, power, water, education and employment land Tourism assets including natural attractions and The Crossing Theatre Good quality of life	Skilled workforce shortages Outflow of young residents Accommodation shortages Constrained regional rail infrastructure Shortage of available childcare services Town centre amenity issues
Opportunities	Threats
Leveraging growth in mining sector Attracting value-add manufacturing operations for agriculture and mining sectors Tourism development Service population growth Aged care services and retirement homes Residential development, motels and other short-term accommodation Increased medical and childcare services	Climate change including hotter temperatures and lower rainfall Reduced water availability New environmental legislation including emissions trading scheme Decline in global coal demand and prices Reliance on mining and agriculture Outflow of young people Social challenges from temporary mining workforce Leakage of mining resources Ability to provide required services to the population Future population decline

The strategy notes that climate change will impact the economy in the following ways:

- Any reduction in the availability of water will negatively impact agricultural productivity and output.
- Implementation of a scheme to tax carbon emissions could have a significant impact on the viability of coal mines in the Narrabri Shire and result in mine closures and job losses in the region.
- Introduction of an emissions trading scheme will potentially further increase electricity costs as coal-fired power is the major source of electricity in NSW.
- The Murray-Darling Basin Plan will outline strategies to guide the management of water resources in the Murray-Darling Basin and set environmentally sustainable limits on the amount of surface water and groundwater that can be taken from the Basin.
- Everyday living will change over time as a result of climate change and investment in environmentally sustainable technologies.

Four opportunities are identified in the strategy to grow and diversify the economy:

- Target industry sectors: Mining services, machinery and equipment manufacturing, agricultural processing and food manufacturing, professional services, transport and logistics and hospitality and tourism were identified as target industry sectors to drive economic growth to 2016.
- Labour attraction and retention: Attracting and retaining labour is important for promoting growth and attracting new companies. Expanding local tertiary education, maintaining a good quality of life and provision of services will make the region an attractive location for new residents.
- Climate change: Potential opportunities for business growth and investment related to climate change include CSG, renewable energy, water efficiency improvements, environmental services, biofuels, recycling and waste management and construction.
- Infrastructure provision: Rail infrastructure and services between the Gunnedah Basin and Newcastle, expansion and upgrades of Narrabri Airport, release of residential land, and provision of social infrastructure and services are required to facilitate growth.

Four strategies, with corresponding actions, were identified to achieve the economic development goals (see Table A- 6).

Table A- 6 Economic development strategies, activities and goals, Narrabri LGA

Strategies	Activities	Goals
Assist existing businesses	Engage with local businesses and industry representatives Provide assistance to businesses looking to expand Develop local workforce opportunities	Diversification of economic base Population growth Increased local employment Increased GRP Increased sustainability
Promotion and marketing of Narrabri Shire	Maintain marketing materials Actively market and promote Narrabri Shire	
Investment attraction	Meet with prospective private sector investors Provide assistance to facilitate investment Business incentives policy	
Lobbying	Lobby State and Commonwealth Government for infrastructure development, service provision and support to meet demands from mining sector growth Provide advice to other Narrabri Shire Council departments	

It is noted in the strategy that Narrabri and Boggabri may help to perform different economic development functions. It notes that Narrabri is well-placed to support growth in the mining sector and attract value-adding operations and support services, as well as attract new residents and mining employees. Boggabri is close to planned new mines and economic development should focus on demand for housing and other services.

Gunnedah Economic Development Strategy 2014

The Gunnedah Economic Development Strategy 2014 (Gunnedah Shire Council, 2014) provides a framework for the economic development of the Gunnedah LGA between 2014 and 2019. The purpose of the strategy is to identify challenges and opportunities to diversify and strengthen the economic base in a sustainable and balanced way.

The strategy identifies economic advantages and challenges for the Gunnedah LGA. The advantages and challenges potentially related to the Project are outlined below (Table A- 7).

Table A- 7 Economic advantages and challenges, Gunnedah LGA

Advantages	Challenges
<p><i>Prime agricultural land coupled with access to water (irrigation and ground water), which in most years, enables summer and winter crops.</i></p> <p><i>Significant high quality coal and coal seam gas resources, with Gunnedah being centrally located within the Gunnedah Basin.</i></p> <p><i>Good rail infrastructure, with the North West line in the process of being substantially upgraded to increase capacity. The rail service provides access to the Port of Newcastle and to Sydney.</i></p> <p><i>Extensive range of facilities and services for residents including retail, health, education, community services, sporting, entertainment.</i></p> <p><i>Attractive setting, with Gunnedah and the Shire having beautiful scenery and spectacular rural views, the Namoi and Mooki Rivers, an attractive town centre, tree-lined streets and 'green-belts' created by the river corridor and sporting facilities.</i></p> <p><i>A relatively safe community with minimal social problems.</i></p> <p><i>A diverse range of engineering, metal fabrication and other businesses to support the agricultural and mining sectors.</i></p>	<p><i>The local economy is highly dependent on agriculture and mining. Agriculture is weather dependent and also subject to fluctuations in global and domestic demand and commodity prices. Mining is also highly dependent on global markets. Fluctuations in global markets can result in 'boom and bust' cycles in Gunnedah.</i></p> <p><i>Competition between agriculture and mining for land, labour and other resources. This is resulting in conflict within the community, skills shortages in the non-mining sector, and price inflation. In some respects, Gunnedah Shire has a 'two speed' economy.</i></p> <p><i>Possible threat to agricultural production through loss of productive land, water resources and pollution from coal mining and coal seam gas exploration and production.</i></p> <p><i>Possible threat to surface and ground water supplies, for both human consumption and agriculture, from coal mining and coal seam gas exploration and production.</i></p> <p><i>Rail capacity constraints, with coal mining contracts for rail access displacing agricultural contracts. Narrabri is also emerging as the freight hub for agricultural products, with some products from Gunnedah going to Narrabri and being transported back through Gunnedah, increasing the freight and handling costs.</i></p> <p><i>Competition from, and the implications of, the MAC Village²² being established in Narrabri, Boggabri and Werris Creek. These villages are likely to reduce the number of mine-related visitors and workers staying in Gunnedah and may also influence relocation decisions for mine-related workers who decide to relocate to the region.</i></p> <p><i>Limited vocational training services in Gunnedah, with Gunnedah TAFE in particular, not providing the training courses needed by local producers and businesses.</i></p>

Economic challenges for specific industry sectors are outlined in the strategy. These are summarised below where they may be relevant to the Project.

- **Agriculture:**
 - Threats to agricultural production from coal mining and gas exploration and production in the Shire, due to: potential damage to surface water and groundwater (which under-pin the viability of agricultural production), dust pollution (which has the potential to impact very significantly on crop production, particularly cotton and grain), significant increases in land prices (with coal companies paying well in excess of the agricultural value of the land) and loss of productive land and agricultural activities (which has impacts on the long-term viability of supply and service chains).
 - Difficulties in accessing rail transport. The coal companies have locked in long-term contracts for both rail stock (trains) and rail time.
 - Difficulty in accessing goods and services. Traditional service businesses in Gunnedah (for example, engineering, welding automotive and equipment repairs) have become more focused on servicing the mining sector, which has the resources to pay for 'immediate' attention.
- **Coal mining:**
 - The industry is subject to global demand and prices which influence production rates and creates the 'boom and bust' cycles. The significant decline in the coal price has resulted in the mining companies streamlining their staffing and retrenching workers and contractors.

²² Now named Civeo Villages.

- Transport infrastructure capacity constraints. Growth in production is restricted by capacity constraints on the rail network and at the Port of Newcastle. One of the main constraints in the rail infrastructure is the Gunnedah Goods Yard. ARTC proposed to upgrade the Goods Yard by 2015 (now complete), which increased the efficiency and the capacity of the North West Rail-line.
- Access to professional, technical, trades and other skilled workers. This will be exacerbated as the Maules Creek, Watermark and Carroona projects begin construction and operation. Gunnedah TAFE does not offer the automotive and trades courses required by the mining sector. While courses are available at the TAFEs in Tamworth and Muswellbrook, sending staff to these facilities has productivity, cost and workplace health and safety implications for employers. The Trades Training Centre proposed for the region will assist in addressing labour issues.
- Conflict and opposition from sections of the community to mining, particularly the potential impacts on agricultural productivity and groundwater resources. The level of acceptance/opposition is one of the factors that will be taken into consideration by mine-related workers and businesses considering moving to the region.
- Lack of high-speed broadband access in rural/remote areas within the Gunnedah Basin and specialist technology services locally.

This economic development strategy was published in 2014 and many of these economic challenges may now be out of date.

The strategy then identifies a competitive positioning for the Gunnedah Shire and strategies for enhancing the Shire economy. It notes that the Gunnedah Shire should be strategically positioned as:

- A highly productive, resource rich area that is regionally, nationally and globally connected.
- A safe, friendly, caring community with an extensive range of services – an ideal environment for raising a family.
- A contemporary lifestyle in a physically attractive setting – capitalising on the rural scenery, emerging cafe scene, strong community spirit and access to Lake Keepit.

The priorities and strategies identified for economic development that are potentially related to the Project are outlined below (Table A- 8).

Table A- 8 Economic development strategies and actions, Gunnedah LGA

Priority	Strategy	Actions
2. To ensure that the foundation "blocks" needed to stimulate and support economic development are in place.	Build a strong, positive profile for Gunnedah Shire	Revise the positioning, branding and marketing of Gunnedah Shire - featuring the positive natural, social and cultural attributes that contribute to Gunnedah Shire being highly liveable. Explore options for having information available on Gunnedah Shire in the MAC (now Civeo) Villages being established in the surrounding Shires and/or distributed as part of the mine recruitment process.
	Ensure that Gunnedah Shire is an attractive place to live, work and invest.	Continue to ensure that planning controls and policies at local, regional and State level, protect rural and bushland areas, water resources and significant view-sheds within the Shire from urban encroachment, inappropriate development and visual, dust and other forms of pollution from coal mining and extractive industries. Incorporate quality images/"hero" shots of the rural areas into the marketing and promotional material for the Shire. Endeavour to attract more doctors, dentists, nursing and allied health professionals to the Shire. Advocate for comprehensive primary health care and programs (including preventative programs) that address health issues within the Shire – including running the programs in the villages. Encourage the provision of additional child-care facilities and places within the Shire. Advocate and provide programs for youth that are designed to improve socialisation and employment skills, and that encourage creativity and innovation in young people.

Priority	Strategy	Actions
	Build a strong and skilled local workforce.	<p>Identify skill gaps, current and likely future, and develop a Gunnedah Workforce Plan with industry.</p> <p>Work with the mining companies during their recruitment phases – promoting job opportunities to partners of mine-related workers.</p> <p>Develop a “Back to Gunnedah” program targeting the “adult children” of Shire residents – encouraging them to return to Gunnedah to raise their families in an affordable, quality, caring community.</p> <p>Assist businesses to develop strategies and programs and/or change working conditions to attract and retain staff in the face of competition from the mining sector.</p> <p>Advocate strongly for the establishment of the proposed Trade Training Centre in Gunnedah. If established, explore options for growing the program to provide skills that are transferable across a number of sectors – mining, agriculture, manufacturing and construction.</p> <p>Advocate strongly for the expansion of the range of courses offered at Gunnedah TAFE, with courses targeted to address skills shortages within the Shire and surrounding region.</p>
	Ensure that the infrastructure and utilities needed to support economic development are in place	<p>Support the agricultural sector in ensuring ongoing access to quality surface and groundwater resources for irrigation and other agricultural activities.</p> <p>Advocate for the State Government to undertake a detailed regional freight study that looks at both rail and road capacity for the transport of coal, agricultural products and other freight.</p>
3. To support and nurture existing economic activities and businesses – to encourage increased productivity, sustainability, growth and employment.	Provide opportunities for business diversification and expansion.	Work with the mining companies and ARTC to identify opportunities for local businesses.
	Work with industry sectors and businesses to address issues and capitalise on opportunities.	Through local, regional and State planning controls, continue to protect agricultural lands, agricultural activities and water resources within the Shire and surrounding areas from encroachment by residential/rural residential, industrial and extractive activities.
		<p>Prepare a “new residents” pack and endeavour to work with the mining companies to provide information on Gunnedah to new employees – focusing on what Gunnedah has to offer as well as employment opportunities for partners.</p> <p>Develop and implement strategies to ensure that the workers residing in the MAC villages²³, particularly the operational staff during the mine start-up period, are aware of Gunnedah and what it has to offer.</p> <p>Work with the mining companies and local businesses to introduce a local procurement program, with businesses working collaboratively where needed, to provide the scale and resources necessary to procure mining contracts.</p> <p>Endeavour to attract mine-related service companies to establish branches/outlets in Gunnedah Shire.</p> <p>Encourage local businesses to explore options to become service providers/stockists for the national and multinational companies that service the mining sector.</p> <p>Investigate opportunities to utilise/recycle waste products from the mining sector.</p>
		Capitalise more effectively on the “raw” assets available including: Namoi River corridor; rich Aboriginal heritage (see Kamilaroi Highway Aboriginal Product Scoping Study); National Parks, State Conservation Areas, State Forests and Crown Reserves; shopping and dining experiences; and local industries and locally produced products.
4. To target new businesses and economic activities.	Target new business and economic activities	Liaise with mining companies regarding likely supplier contracts and explore the possibility of the suppliers establishing operations in Gunnedah Shire.

²³ Now named Civeo villages.

Targeted economic strategies

Targeted economic strategies and business surveys for Narrabri LGA, Boggabri and Narrabri were also reviewed. The strategies reviewed were:

- Business Retention and Expansion Survey: Narrabri LGA Report 2006b.
- Business Retention and Expansion Survey: Narrabri Report 2006c.
- Narrabri Community Economic Development Strategic Plan 2007b.
- Business Retention and Expansion Survey Boggabri Report 2006a.
- Boggabri Community Economic Development Strategic Plan 2007a.

These documents contained information about some of the challenges and opportunities for the towns of Narrabri and Boggabri, rather than for the wider area. Some of the challenges and opportunities that may be relevant to the Project are outlined below, however, these strategies are now over ten years old and the findings may therefore no longer be accurate. The current status of these previously identified challenges and opportunities has therefore been considered in the table below (Table A- 9).

Table A- 9 Economic challenges and opportunities for Narrabri and Boggabri, Identified in 2006 compared to current situation

Challenge/Opportunity	Current Status
Narrabri – Challenges	
Ageing community, loss of youth	Remains a challenge according to age structure trends (Section 4.1.2).
Impacts of climate and climate change – drought and flooding	Remains a challenge based on recent drought conditions expressed in engagement activities undertaken in 2019-20 (Section 3.4).
Lack of national and state infrastructure	Ongoing.
Lack of particular labour skills and skilled labour drainage	Unknown.
Narrabri – Opportunities	
Natural resources and gas reserves	Remains an opportunity given continued growth in resource projects.
Water availability	Remains an opportunity given availability of underground water sources in drought conditions experienced at time of engagement activities in 2019-20, although perhaps not as significant an opportunity.
Diversity of agriculture	Remains an opportunity.
Airport, rail infrastructure and major highway access.	Remains an opportunity given infrastructure remains.
Boggabri – Challenges	
Ageing population and youth retention	Remains a challenge according to age structure trends (Section 4.1.2).
Labour and job shortages	Unknown.
Reliance on coal industry and international coal price	Remains a challenge based on industry of employment data.
Unemployment.	Remains a challenge according to unemployment rate (Section 4.2.4.3).
Boggabri – Opportunities	
Infrastructure and capacity to grow	Remains an opportunity given expansion areas.
Professional services, and services for coal industry.	Remains an opportunity given continued growth in resource projects.

Source: Multiple economic strategies as outlined above.

Tourism strategies and planning

Narrabri Shire Destination Management Plan/Tourism Plan 2014-2019

The Narrabri Shire Destination Management Plan/Tourism Plan (Narrabri Shire Council, 2014) provides a direction and framework for growing the Narrabri Shire tourism sector over the next five years. The vision of the plan is to *“share the patchwork of colour across our vast fertile landscape: our national parks and forests, our salt of the earth characters, stories and experiences that offer the simple sophistication of country life. Experiences so compelling they build the North West as a dynamic and resilient destination”*.

The vision includes sharing the characteristics of the Narrabri LGA with visitors:

- Land: Agricultural landscapes, landforms, National Parks and forests.
- Water: The healing artesian waters and the lakes and river systems that are the life-blood of the area.
- Stories: The ancient culture of the Kamilaroi people, heritage, the characters that have forged the area.
- Way of life: Country hospitality – delivering simple sophistication, as well as the opportunity to relax, reconnect and rejuvenate.

The priorities of the plan include:

- Identifying opportunities to strengthen the existing market base and diversify into new markets in order to deliver visitation year-round.
- Understanding the needs and expectations of visitors and ensuring that the infrastructure, facilities and services are available to meet these.
- Encouraging and facilitating the development of tourist attractions, accommodation, events and infrastructure
- Setting the directions for the marketing and promotion.
- Identifying priorities to ensure the most effective use of limited funds and resources.

The plan provides some useful background information on the developments in the tourism sector in the Narrabri LGA over the last five years, including:

- There has been a diversification of the tourist base for the Shire, including growth in touring caravans and motorhomes.
- Pilliga is emerging as a destination during caravan touring season with new works at the Bore Baths.
- Improvement to accommodation options with new properties and upgrades.
- Relocation of the Narrabri Visitor Information Centre into the Cotton Centre increasing visibility and quality.
- New tourism attractions, including the opening up of the Pilliga Forest, improvements to visitor facilities at Mt Kaputar National Park, improvements at the Pilliga bore baths, establishment of the Pilliga Lagoon Wetlands Walk, opening of the Deriah Aboriginal Area, etc.
- Growth in the conference and events sector with new events.
- Amenity improvements to Narrabri and Wee Waa town centres.
- New and improved recreation facilities, such as the Narrabri Aquatic Centre, bowling alley, Newton Park Motocross complex, ATV and Trailbike Territory, Go Kart Track at Boggabri and mountain bike trails.

The plan notes resource developments as positives for tourism in the Shire:

- The development of coal mining is generating an increase in investment and work-related visitation to the Shire. The Narrabri Mine and the proposed Maules Creek Coal Mine both have expected lives of 50-60 years. The construction of the Maules Creek Coal Mine will cause a two- to three-year spike in visitation, with this followed by on-going operations-related visitors for the life of the mine.

- Narrabri is emerging as the service centre for gas exploration and extraction in the Gunnedah Basin. Santos is concentrating its exploration and production activities in the Pilliga Forest with the gas resources in this area estimated to be able to supply 25% of NSW gas needs. The construction of the proposed Queensland to Hunter gas pipeline will stimulate and strengthen the gas industry in the shire and surrounding region. The availability of gas may also stimulate industrial development within Narrabri, with flow-on increases in business tourism.

The plan notes that the Narrabri Shire attracts a very diverse range of tourist groups, including business and work-related travellers, dominated in recent years by coal mine-related workers, but also including sales representatives, tradesmen, professionals, government officers, contractors and rural workers. This market is mentioned along with others such as highway traffic, touring traffic (such as retirees with caravans and motorhomes), regional residents and people visiting friends and families. As well as these primary markets, secondary and minor markets include conference and meeting delegates, event attendees, sports event attendees and coach tour groups. A range of recreation and activity-based markets are also listed such as bird watchers, bushwalkers, car and motorcycle clubs, dirt bike enthusiasts, etc.

For business and work-related travel, the plan notes the following implications and opportunities that may be relevant to the Project:

- The establishment of the MAC Villages has reduced demand for accommodation in Narrabri mid-week, providing the opportunity to grow other market segments, including coach tour groups, business events (conferences, meetings, regional functions) and entertainment events.
- Support the business travel sector by ensuring that the information that these visitors need is available through the internet and in the accommodation establishments, including the MAC villages.
- Most travellers have some form of internet access, therefore there is opportunity to have the Narrabri website address and mobile application details on display within the motel and MAC rooms.
- Access to a dining guide in each accommodation room may encourage increased expenditure on food and beverages.
- To encourage business and work-related travellers, particularly the longer-stay mine-related workers, to bring their families on weekends and/or during school holidays, accommodation providers could provide promotional offers.

The strategies and actions outlined in the plan that may be relevant to the Project include:

- Raise awareness of the accommodation at the Railway Hotel at Baan Baa.
- Explore opportunities for Baan Baa to capitalise on attraction in the surrounding area such as the Pilliga Forest and Namoi River.
- Protect and preserve key assets, such as significant landscapes and landforms and heritage and cultural sites. Ensure that the assets that are part of the attraction base of the Shire and underpin the tourism industry, are recognised and protected in local and regional strategies and environmental plans. Development needs to be sympathetic to and compatible with these assets and the "Vision and Promise" of the North West cluster.
- Continue to develop and promote the routes that lead into Narrabri Shire as touring routes.
- Enhance and expand the products, activities and experiences along the Kamilaroi Highway corridor, including establishing a Namoi River trail with camping sites, fishing sites, bird watching trails and locations for canoeing.
- Continue to improve the natural attractions within the Shire including Mt Kaputar National Park, Pilliga Forest, Yarrie Lake and Gins Leap.
- Continue to develop Aboriginal cultural products and experiences.
- Progressively build a second tier of quality arts, cultural and heritage attractions, focusing on telling the Shire's "stories" and developing attractions/experiences that provide a point of difference to other localities and/or a "wow" factor.
- Provide access to visitor information in the accommodation camps (Civeo villages at Narrabri and Boggabri) – directory, brochure display, Visit Narrabri website address/QR codes in each room, etc.

- Take the accommodation camp managers and key staff who have contact with visitors, on a familiarisation tour of the attractions and activities within the surrounding area.
- Ensure that the accommodation camps and mining companies receive the e-newsletter, etc.

Gunnedah Shire Destination Management Plan 2015

The Gunnedah Shire Destination Management Plan (Gunnedah Shire Council, 2015) outlines a framework for increasing the visitor economy from 2015 to 2020. The plan aims to increase visitor expenditure, with social and economic benefits to the wider community. The vision of the plan is that *“Gunnedah Shire will have a strong, diversified and sustainable visitor economy. It will be known for its stunning, productive landscapes, its natural wonders and dreamtime connections, all championed by a vibrant, welcoming community - an experience of panoramic sights, unique surprises, country flavours and engaging conversations!”*.

In order to achieve the vision, the priorities outlined in the Plan include:

- Identifying opportunities to strengthen and grow the existing market base and diversify into new markets in order to deliver visitation year-round.
- Understanding the needs and expectations of visitors and ensuring that the infrastructure, facilities and services are in place within the Shire to meet these.
- Encouraging and facilitating the development of tourist attractions, accommodation, events and infrastructure.
- Setting directions for marketing and promotion.
- Identifying priorities to ensure the most effective use of limited funds and resources.

The natural assets of the region are noted in the report as tourism opportunities for the Shire, with landscapes and nature-based activities important to potential target markets. Natural assets such as koala viewing, the Namoi River corridor, Lake Keepit, Boonalla Aboriginal Area and Bindea Track are mentioned. The Shire’s rich Aboriginal culture is also mentioned as a potential opportunity to increase tourist visitation.

Amongst a range of challenges identified, the Plan notes fluctuations and uncertainty in the mining sector as a challenge for tourism in the Gunnedah LGA. It suggests that over the past few years, strong demand for accommodation in Gunnedah from mine and infrastructure projects has displaced other visitor markets. Then, contraction in the mining industry and the completion of several major projects reduced demand for accommodation and increased occupancy rates. The report notes that the outlook for the accommodation sector over the next few years will depend on whether other proposed mining projects proceed.

In addition, it notes that a decline in the koala population as a result of extreme weather events has meant that it is increasingly difficult for Gunnedah to deliver on its promise to visitors that koalas can be easily seen in their natural habitat.

The coal mines and coal washery around Gunnedah are noted as potential opportunities for tourist activities if limited access could be provided.

Strategies and actions identified in the plan that may be relevant to the Project include:

- Continue to develop and market the Kamilaroi Highway as a touring route from the Great Divide to the Great Outback, including promoting the Namoi – Darling River with camping sites, fishing sites, bird watching trails and locations for canoeing.
- Explore opportunities for agricultural and mining activities in Gunnedah to be included in specialist industrial and agricultural tours – for both the domestic and international markets.
- Explore, with the mining companies, the opportunity to display the Gunnedah Visitors Guide and possibly a tear-off map of the LGA in the office/reception area where workers and visitors sign-in.

Appendix D. Audit of Tourism Events and Facilities

Table A- 10 Significant events held within the Narrabri and Gunnedah Townships and Boggabri

Significant events (yearly)	Dates/time of year	Event Information
Narrabri township		
The Nosh Narrabri	Held during August. In 2019, the festival was held for two days, from 31 October-1 September.	Nosh Narrabri provides visitors with the opportunity to explore the wares of exhibitors offering tasty gourmet samples, which include olives, pasta, wines, bread and pork. Cooking demonstrations, live music, a dazzling evening firework show, and many more activities are also on offer ²⁴ . The festival is held along the banks of the Namoi River, behind the Crossing Theatre.
Narrabri Show	Held during May. In 2020, the Narrabri Show will be held from the 1-3 of May.	Narrabri Show offers an extensive program. Live entertainment and bar facilities are provided across both the Friday and Saturday nights of the show ²⁵ .
Narrabri RSL	Open 7 days a week from 10am	Able to host entertainment, private and community events ²⁶ .
Gunnedah township		
AgQuip	Staged over three days – Tuesday, Wednesday and Thursday, 20, 21 and 22 August 2019. The event opens from 9am to 5pm on Tuesday and Wednesday and 9am to 4pm on Thursday.	AgQuip showcases over 3,000 companies aimed at farming professionals, the event provides an excellent opportunity for businesses to promote their brand, generate sales and connect with their customers ²⁷ . It is Australia's largest and premier primary industry field days, which attracts over 100,000 visitors over three days from across the nation and overseas ²⁸ .
Weeks of Speed Festival	Held during March each year. In 2018, the festivities were held over four weekends.	The program showcases everything from Speedway Cars and Dirt track Bikes, Greyhound Racing, Keepit Aquatic Club Water Skiing, Hill Climb, Drags, Speed Chess, Keepit Cup Sailing Regatta, Aero Modellers Display, Street Parade, Tractor Trek, Vintage vehicles, & Machinery, Show and Shine, Country Markets and more ²⁹ .
Australia Day	26 January	Opens with an Award Dinner on Saturday dinner at the PCYC. Australia Day starts with the Women's Triathlon at 7 am, followed by a 9 am Raft and Craft Race start, and a full program of athletic events at the Donnelly Fields ³⁰
Gunnedah Show	Held during April	Offers one of the premier agricultural and entertainment events in north west NSW. The Gunnedah Show Society is also responsible for facilitating a wide range of activities throughout the year including ³¹ : Country Music Muster (24-29 of March 2020) Show jumping Festival (12, 13, 14 July 2019) Working Dog Trials (12t-13 of October 2019) AgQuip Bull Ride (21 August 2019) Ladies Auxiliary Rose Show (18-19 October 2019)

²⁴ Nosh Narrabri. (n.d.). Nosh Narrabri. Retrieved 15 August, 2019 from Nosh Narrabri: <https://www.noshnarrabri.com.au/>

²⁵ Narrabri Show Society. (n.d.). Narrabri Show Society. Retrieved 15 August, 2019 from Narrabri Show Society: <https://www.narrabrishow.com/>

²⁶ Narrabri RSL Club. (2016). Narrabri RSL Club. Retrieved 15 August, 2019 from Narrabri RSL: <http://narrabrisl.com.au/Home.aspx>

²⁷ Rural Press Events. (n.d.). 2020 Field Days. Retrieved 15 August, 2019 from Rural Press Events: <https://ruralpressevents.com.au/>

²⁸ Australian Government (Grains Research and Development Corporation). (2020). AgQuip Field Days. Retrieved 11 February, 2020, from Grains Research and Development Corporation: <https://grdc.com.au/events/list/2019/08/agquip-field-days>

²⁹ Gunnedah Shire Council. (2019). Weeks of Speed Festival 2019. Retrieved 15 August, 2019 from Gunnedah Shire Council: <http://www.gunnedah.nsw.gov.au/index.php/council/keep-in-touch/latest-news-media/item/1618-weeks-of-speed-festival-2019>

³⁰ Gunnedah Shire Council. (2019). Gunnedah Shire Australia Day Celebrations. Retrieved 15 August, 2019 from Gunnedah Shire Council: <http://www.gunnedah.nsw.gov.au/index.php/council/keep-in-touch/latest-news-media/item/1599-gunnedah-shire-australia-day-celebrations>

³¹ Gunnedah Show Society (2019), Welcome to the Gunnedah Show Society. Retrieved 15 August, 2019 from Gunnedah Show Society: <https://www.gunnedahshowsociety.com.au/>

Significant events (yearly)	Dates/time of year	Event Information
Boggabri township		
Boggabri Drovers Campfire	In 2020, the event will be held from the 24-26 April ³² .	The Boggabri Drover's Campfire has become a much-anticipated feature for caravanners, motorhome owners and traveller's along Australia's highways and byways ³³ .

Source: Various sources (see footnotes);

Table A- 11 Tourist accommodation located with the Narrabri and Gunnedah Townships and Surrounding Areas

Name	Address	Distance to Project
Narrabri Township		
Selina Street B&B	35A Selina Street, Narrabri	24.4km
Bellview Motel Narrabri	132 Barwan Street, Narrabri	25.5km
Wilga Hotel	3 Goobar Street, Narrabri	24.1km
Namoi Hotel-Motel	49 Maitland Street, Narrabri	24.5km
Highway Tourist Village	86-92 Cooma Road, Narrabri	24.1km
Adelong Motel Narrabri	174 Maitland Street, Narrabri	25.2km
Narrabri Motel & Caravan Park	52 Cooma Road, Newell Highway, Narrabri	23.9km
Tommo's Motor Lodge	34/36 Cooma Road, Narrabri	23.6km
Kaputar Motel Narrabri	22 Cooma Road, Narrabri	23.6km
Bellview Motel Narrabri	132 Barwan Street, Narrabri	25.5km
Aaron Hill Motel	139 Barwan Street, Narrabri	25.8km
Mid Town Inn Narrabri	41 Maitland Street, Narrabri	24.4km
Club Motor Inn	115-117 Barwan Street, Narrabri	25.4km
Narrabri Big Sky Caravan Park	11-35 Tibbereena Street, Narrabri	24.3km
Executive Oasis Narrabri	45 Riverside Drive, Narrabri	23.8km
Narrabri West Apartments	2 Villarette Avenue, Narrabri	24.4km
Wee Waa		
Wee Waa Welcome Inn	166 Rose Street, Wee Waa	51.1km
Boggabri		
Boggabri Nestle Inn	54 Merton Street, Boggabri	17.1km
Boggabri Caravan Park	Laidlaw Street, Boggabri	17.1km
Boggabri Town Apartments	101 Wee Waa Street, Boggabri	17.0km
Gunnedah Township		
The Courthouse Hotel	301 Conadilly Street, Gunnedah	52.7km
Roseneath Manor B&B	91 Maitland Street, Gunnedah	52.4km
Mackellar Pet Friendly Motel Gunnedah	342 Conadilly Street, Gunnedah	52.9km
Riverside Apartments	78 Maitland Street, Gunnedah	52.1km
Railway Motel	41 Barber Street, Gunnedah	52.1km
Overland Motor Lodge	40 Conadilly Street, Gunnedah	51.6km
Gunnedah Lodge Motel	Abbott Street & Bloomfield Street, Gunnedah	52.8km
The Plains Motor Inn	111 Conadilly Street, Gunnedah	52.1km

³² Drovers Campfire. (2020). About Us. Retrieved 6 February, 2020 from Drovers Campfire: <http://www.droverscampfire.com.au/>

³³ Narrabri Shire Council. (2019). Narrabri Shire Information Directory. Retrieved 15 August, 2019 from Narrabri Shire: <http://www.narrabri.nsw.gov.au/narrabri-shire-community-directory-1077.html>

Name	Address	Distance to Project
Gunnedah Hotel	298 Conadilly Street, Gunnedah	52.7km
Red Chief Motel	28 Henry Street, Gunnedah	53.0km
Gunnedah Tourist Caravan Park	51 Henry Street, Gunnedah	53.0km
Alyn Motel	351 Conadilly Street, Gunnedah	53.1km
Billabong Motel	333 Conadilly Street, Gunnedah	53.0km
Maynestay Motel	380 Conadilly Street, Gunnedah	53.2km
Gunnedah Motor Inn	367 Conadilly Street, Gunnedah	53.8km
Apartments on Bloomfield	201 Bloomfield Street, Gunnedah	53.6km
Gunnedah Serviced Apartments	377 Conadilly Street, Gunnedah	53.4km
Albion Street Furnished Accommodation	20 Albion Street, Gunnedah	53.7km
Comfort Inn Harvest Lodge	404 Conadilly Street, Gunnedah	53.7km
Gunnedah & Narrabri Furnished Properties	191 Stock Road, Gunnedah	53.3km
Whitestone Apartments	21 Albion Street, Gunnedah	53.7km
Foxborough Serviced Apartments	11 Daniel Keane Crescent, Gunnedah	53.1km
Golf Links Apartments	Links Road and McDermotte Place, Gunnedah	53.1km

Source: Various sources

Table A- 12 Tourist Attractions located within the Narrabri and Gunnedah Townships and Surrounding Areas

Name	Address	Distance to Project	Information
Narrabri Township			
The Crossing Theatre	117 Tibbereena Street, Narrabri	25.3km	Includes a cinema, theatre, live music venue and café
CSIRO Narrabri Paul Wild Observatory	1828 Yarrie Lake Road, Narrabri	33.6km	Features the Australia Telescope Compact Array (ATCA), which is an array of 6 x 22m antennas used for radio astronomy. The visitors centre is open from 8:00am to 5:00pm every day of the year and is open for free to the public
The Craft Shop	35 Danger Street, Narrabri	24.6km	Offers a wide range of handmade crafts for purchase Monthly exhibitions are held in the gallery
Narrabri Visitor Information Centre	Tibbereena Street, Narrabri	25.1km	The information centre is open from 9:00am to 5:00pm and provides information to tourists about the Narrabri Shire region including, 'events', 'things to do' and 'tours'
Narrabri Old Gaol & Museum	2 Bowen Street, Narrabri	24.5km	It is open Wednesdays 10:00am to 2:00pm and Saturdays 9:00am to 1:00pm The museum houses an extensive collection of artefacts of historical, archival and cultural significance
Crossroads Hotel	170 Maitland Street, Narrabri	25.2km	It is a refurbished hotel with modern apartment style accommodation, restaurant, bar facilities and Tenpin Bowling
Narrabri Fish Farm	261 Tuppiari Road, Jacks Creek	15.3km	It is open 7 days a week between 8:00am to 4:00pm Narrabri Fish Farm is the largest hatchery-based aquaculture farm in NSW and provides guided tours, fish feeding, yabbying and fishing
Yarrie Lake	Yarrie Lake Road, Narrabri	33.6km	Is a circular lake 3 km in diameter and located on the edge of the vast Pilliga Scrub, providing a haven for countless birds and animals Activities available to do at the lake include: water skiing, swimming, sailing and bird watching

Name	Address	Distance to Project	Information
Sawn Rocks	Killarney Gap Road, Narrabri	47.8km	Are one of Australia's best examples of a rock formation called 'organ-piping', as they look like a wall of giant organ pipes. It is a short 15-minute walk along the shady track to the lookout at the foot of Sawn Rocks ³⁴
Mount Kaputar National Park	Kaputar Road	37.4km	Includes a variety of walking trails, picnic areas, lookouts, cabins (Dawson Spring Cabins), camping grounds ³⁵ It is located roughly one hour's drive north-east of Narrabri
Berrigal			
Waa Gorge	Allambie Road, Berrigal	9km	Is a walking track (2-3hrs return) located within the Mount Kaputar National Park ²¹
Boggabri			
Barbers Lagoon and Barbers Pinnacle	Barbers Lagoon, Boggabri	23.7km	Local landmarks that take their names from George, 'The Barber', a runaway convict who inhabited the area from 1826 to 1831.
Gins Leap	Kamilaroi Highway, Boggabri	15.2km	It is a striking rock face, which towers over the Kamilaroi Highway outside of Boggabri
Dripping Rock	Dripping Rock Road, Boggabri	34.5km	A 50m high waterfall located a short walk from the carpark It is recognised as an idyllic spot for a picnic, or swim in the pool Dripping Rock can be difficult to find and is 4WD only
Gunnedah Township			
Imperial Hotel Gunnedah	16 Chandos Street, Gunnedah	52.3km	Open 7 days a week from 10:00am It is a small family run country hotel
Gunnedah Water Tower Museum	Anzac Park, South Street, Gunnedah	53km	Opening hours Saturday 10:00am to 2:00pm and Monday 9:30am to 11:30am The Museum houses a large display of memorabilia, artefacts and archives, with four floors and an observation deck
Cumbo Gunnerah Gallery and Keeping Place	26 Chandos Street, Gunnedah	52.3km	The gallery houses a significant collection of stone artefacts, carved trees, weapons and utensils Visits are only available via prior booking
The Civic Centre	83 Chandos Street, Gunnedah	52.3km	Includes the Civic Cinema, providing new releases/art-house films, and a theatre with a well-quipped stage for touring and local theatrical productions
Gunnedah Visitor Information Centre	83 Chandos Street, Gunnedah	52.2km	The information centre is open from 9:00am to 5:00pm (Mon-Fri) and 10:00am to 3:00pm (Sat-Sun), offering tourists with an insight into how to best discover Gunnedah and the surrounding areas
Gunnedah Rural Museum	Oxley Highway, Gunnedah	51.6km	It is open 9:00am to 3:00pm every day, except Christmas Day and Good Friday The museum houses one of Australia's largest collections of early agriculture and transport memorabilia.
Plains of Plenty Cooperative	295 Conadilly Street, Gunnedah	52.8km	It is open 9:30am to 4:30pm (Mon-Fri) and 9:30am to 1:30pm (Saturday); Offers a high-quality range of hand-crafted goods including: greeting cards, patchwork, jewellery, pottery and art.

³⁴ NSW Government (National Parks and Wildlife Service). (2020). Sawn Rocks walking track. Retrieved 15 August, 2019 from National Parks and Wildlife Service: <https://www.nationalparks.nsw.gov.au/things-to-do/walking-tracks/sawn-rocks-walking-track>

³⁵ NSW Government (National Parks and Wildlife Service). (2020). Mount Kaputar National Park. Retrieved 15 August, 2019 from National Parks and Wildlife Service: <https://www.nationalparks.nsw.gov.au/visit-a-park/parks/mount-kaputar-national-park/visitor-info>

Name	Address	Distance to Project	Information
Porcupine Lookout	29A Apex Road, Gunnedah	54.9km	Porcupine Lookout is located 2km from town The northern platform overlooks the town and beyond to the Nandewar Ranges, over 100km away, while to the right are the hills of Kelvin State Forest and to the south are panoramic views of the rich agricultural land of the Breeza and Pullaming Plains
Keepit			
Lake Keepit Skate Park	2345 Keepit Dam Road, Keepit	67km	It is located within the shores of the Keepit Dam and provides fishing, a kid's water park, skate park and BMX track
Pilliga			
Pilliga Nature Reserve	Dandry, NSW	55.1km	The Pilliga Forest is the largest remaining native forest on the Australian continent. Nearly half of the Pilliga Forest is managed by the National Parks and Wildlife Service, to help protect this area including the habitat of declining woodland bird species and a large koala population ²¹

Source: Various sources (see footnotes)

Appendix E. Audit of Recreation Areas

Table A- 13 Nearby recreation activities

Category	Type	Facility Name	LGA/Address	Details	Distance to Project
Trails	Mountain bike	Scutts Hut trail	Narrabri/Mount Kaputar National Park	40 km return - mountain bike trail along Scutts Hut trail	36 km
	Mountain bike, 4x4 and walking	Barraba track	Narrabri/ Mount Kaputar National Park	8 km one -way - Barraba track facilitating mountain biking, 4x4 and walking	36 km
	Walking trail	Mount Coryah walking track	Narrabri/ Mount Kaputar National Park	2 km loop - scenic views of Euglah Rock and great birdwatching opportunities	36 km
	Walking trail	Governor Summit walking track	Narrabri/ Mount Kaputar National Park	2 km return - steep climb offering scenic mountain views and birdwatching	36 km
	Walking trail	Kaputar Plateau walk	Narrabri/ Mount Kaputar National Park	8 km loop - easy bushwalk that offers great scenic views and birdwatching opportunities.	36 km
	Walking trail	Governor lookout walking track	Narrabri/ Mount Kaputar National Park	0.45 km return - scenic mountain views over Grattai wilderness area from Governor lookout walking track	36 km
	Walking trail	Euglah Rock walking track	Narrabri/ Mount Kaputar National Park	0.65 km return - leads to a lookout offering stunning scenic views of Euglah Rock and beyond.	36 km
Camping	Camp site	Dawsons Spring campground	Narrabri/ Mount Kaputar National Park	Fully equipped accommodation area with a variety of barbecue options and several good walking tracks	36 km

Source: (NSW Government, 2019)

Appendix F. Audit of Social Infrastructure

Table A- 14 Social infrastructure

Type	Facility Name	Address	Details	Distance to Project
Education				
Childcare	Li'l Achievers Early Learning Centre Gunnedah	211 Bloomfield Street, Gunnedah	Provides care for up to 79 children aged from 3-4 and 4-6 years. Approved places: 79.	53.7 km
	Goodstart Early Learning	103 Bloomfield Street, Gunnedah	Provides early learning and care for: nursery, toddlers and pre-school. Approved places: 66.	52.5 km
	Winanga-Li Aboriginal Child and Family Centre	12 Hunter Street, Gunnedah	Provides care to children aged 6 weeks to 5 years. Approved places: 39.	52.3 km
	Mary Rankin Child Care Centre	Hunter Street, Gunnedah	Provides care for up to 39 children aged from birth to 6 years of age. Approved places: 39 children	52.6 km
	Gunnedah Family Day Care (Sugar Gums Family and Children's Centre)	Cnr Hunter and Marquis Street, Gunnedah		52.7 km
	Jungle Babies Early Learning Centre	99 Barwan Street, Narrabri	Provides care for up to 26 children from 0-school aged. Approved places: 26 children	25.2 km
	Gumnut Cottage Child Care & Preschool Centre	11 Fitzroy Street, Narrabri	Provides care for up to 52 children aged from 6 weeks to 5 years. Approved places: 52 children	24.3 km
	Nurruby Childcare Centre and Preschool	72 Gibbons Street, Narrabri	Approved places: 39.	25.0 km
	Community Kids Narrabri Early Education Centre	41 Nandewar Street, Narrabri	Provides care for up to 76 children aged from 6 weeks to 5 years. Approved places: 76	24.9 km
Preschool	Li'l Achievers Early Learning Centre Gunnedah	211 Bloomfield Street, Gunnedah	Provides care for up to 79 children aged from 3-4 years and 4-6 years.	53.7 km
	Goodstart Early Learning Gunnedah	103 Bloomfield Street, Gunnedah	Provides early learning and care for: nursery, toddlers and pre-school. Approved places: 66.	52.5 km
	Gunnedah Pre-School	35 Elgin Street, Gunnedah	Provides care for children aged between 3-6 years.	52.8 km
	Gunnedah Baptist Community Pre-School	1 Reservoir St, Gunnedah	Provides care for up to 60 children aged from 3-4 years and 4-6 years.	52.8 km
	Gunnedah South Public School	Winder Place, Gunnedah		53.4 km
	Carinya Christian School	46 Elgin Street, Gunnedah		52.6 km
	Goodstart Early Learning	103 Bloomfield Street, Gunnedah	Provides early learning and care for: nursery, toddlers and pre-school. Approved places: 66.	52.5 km
	Ooranga Boggabri Preschool	57 Laidlaw Street Boggabri	Only offers childcare services on Tuesday and Wednesdays.	17.6 km
	Jungle Babies Early Learning Centre	99 Barwan Street, Narrabri	Provides care for up to 26 children from 0-school aged.	25.2 km
	Kogil Street Pre-School	10 Kogil Street, Narrabri	Provides care for up to 39 children aged from 3-5 years.	24.6 km
	Gumnut Cottage Child Care and Preschool Centre	11 Fitzroy Street, Narrabri	Provides care for up to 52 children aged from 6 weeks to 5 years.	24.3 km

Type	Facility Name	Address	Details	Distance to Project
	Nurruby Child Care Centre and Preschool	72 Gibbons Street, Narrabri	Approved places: 39.	25.0 km
Primary School	Sacred Heart School	57 Laidlaw Street, Boggabri	Prep-Year 6. Total number of students 37.	17.6 km
	Gunnedah South Public School	Winder Place, Gunnedah	Kindergarten to Year 6. Total number of students 614.	53.4 km
	Carinya Christian School	46 Elgin Street, Gunnedah	3 years to Year 7.	52.6 km
	Gunnedah Public School	Bloomfield Street, Gunnedah	Kindergarten to Year 6. Total number of students 127.	52.6 km
	St Xavier's School	150 Bloomfield Street, Gunnedah	Kindergarten to Year 6.	53.0 km
	G.S. Kidd Memorial School	37 Lincoln Street, Gunnedah	Kindergarten to Year 12. Total number of students 36.	53.1 km
	Boggabri Public School	Merton Street, Boggabri	Kindergarten to Year 6. Total number of students 118.	17.4 km
	Narrabri West Public School	6 Cooma Road, Narrabri	Kindergarten to Year 6. Total number of students 322.	23.2 km
	Narrabri Public School	90 Barwan Street, Narrabri	Kindergarten to Year 6. Total number of students 407.	24.9 km
	St Francis Xaviers School	32 Nadewar Street, Narrabri	Kindergarten to Year 6.	24.8 km
Secondary School	Gunnedah High School	Marquis Street, Gunnedah	Years 7-12. Total number of students 421.	52.5 km
	St Mary's College	151/153 Bloomfield St, Gunnedah	Years 7-12.	53.1 km
	G.S. Kidd Memorial School	37 Lincoln Street, Gunnedah	Kindergarten to Year 12. Total number of students 36.	53.1 km
	Narrabri High School	2 Gibbons Street, Narrabri	Years 7-12. Total number of students 551.	23.9 km
	Gunnedah High School	Marquis Street, Gunnedah	Years 7-12. Total number of students 421.	52.5 km
Tertiary	Gunnedah TAFE New England Campus	Hunter Street, Gunnedah	Serves as one of the University of New England's Regional Study Centres to support off-campus students ³⁶	52.6 km
	Community College	39 Chandos Street, Gunnedah		52.3 km
	Narrabri Community College Northern Inland	Shop 3/100 Maitland Street, Narrabri		24.8 km
	TAFE NSW Narrabri campus	85 Barwan Street, Narrabri		24.9 km
Community Facility				
Hall	Gunnedah Town Hall	152 Conadilly Street, Gunnedah	Gunnedah Town Hall: Home of the Gunnedah Conservatorium	52.3 km
	Baan Baa Community Hall	Baranbah Street, Baan Baa		7.0 km

³⁶ University of New England. (2019). Off Campus Facilities for Regional Students. Retrieved 12 February, 2012, from University of New England: https://apply.une.edu.au/app/answers/detail/a_id/390/~off-campus-facilities-for-regional-students

Appendix B. Community Survey ResultsAppendix F. Audit of Social InfrastructureAppendix F. Audit of Social Infrastructure

Type	Facility Name	Address	Details	Distance to Project
	Boggabri Hall	Cn Merton and Brent Street, Boggabri		17.4 km
Community Centre	Narrabri & District Community Aid Service Inc.	8 Doyle Street, Narrabri	Narrabri and District Community Aid Service Inc home of the: Namoi Toy Library Playgroups – Busy Little Hands	25.0 km
Library	Gunnedah Shire Library	291-293 Conadilly Street, Gunnedah		52.8 km
	Boggabri Library	82 Wee Waa Street, Boggabri		17.2 km
	Narrabri Library	8 Doyle Street, Narrabri		25 km
Cultural Facility				
Art Gallery	Narrabri Antiques & Art	66 Dangar Street, Narrabri		24.7 km
Art Space	Gunnedah Bicentennial Creative Arts Gallery	81 Chandos Street, Gunnedah		52.2 km
Cultural Space	Gunnedah Rural Museum	Oxley Highway, Gunnedah		51.6 km
	Gunnedah Water Tower Museum	Anzac Park, South Street, Gunnedah		53.0 km
	Dorothea Mackellar Memorial Society and Centre	Anzac Park South Street, Gunnedah		52.9 km
Museum	Narrabri Old Gaol & Museum	2 Bowen Street, Narrabri		24.5 km
	Paul Wild Observatory, Narrabri	1828 Yarrie Lake Road, Wee Waa		36.1 km
Performing Arts Facility	The Crossing Theatre	117 Tibbereena Street, Narrabri		25.3 km
	The Civic Cinema and Theatre	83 Chandos Street, Gunnedah		52.3 km
Aquatic Centre	Gunnedah Memorial Swimming Pool	Anzac Parade, Gunnedah		52.9 km
	Boggabri Memorial Swimming Pool	Laidlaw and Caxton Street, Boggabri		17.6 km
	Narrabri Memorial Swimming Pool	Tibbereena Street, Narrabri		24.5 km
Recreation Facility				
Indoor Recreation Facility	Gunnedah Services and Bowling Club	313 Conadilly Street, Gunnedah		52.8 km
	Gunnedah Parents & Citizens Youth Club	View Street, Gunnedah	Gunnedah Parents and Citizens Youth Club: Archery Basketball Badminton Futsal Volleyball	52.2 km
	Gunnedah Basketball Association	South Street, Gunnedah		52.2 km
	Gunnedah Gymnastics Centre	South Street, Gunnedah		52.2 km
Major Outdoor Recreation Facility	Gunnedah Golf Club	George Street, Gunnedah		52.6 km

Type	Facility Name	Address	Details	Distance to Project
	Gunnedah Showground	South Street, Gunnedah	Gunnedah Showgrounds: Namoi Horse Association Riding for the Disabled Gunnedah and District Pony Club Gunnedah Rugby Club	52.2 km
	Jubilee Park	Cnr of Hull and Caxton Streets	Jubilee Park, Boggabri: Traditionally used for: rugby league, softball, athletics carnival and school sport. The site features a new amenity building with toilets and showers as well as a canteen facility.	17.9 km
	Narrabri Race Course	Bailey Street, Narrabri		24.9 km
	Narrabri Showgrounds	Wukawa Street, Narrabri	Narrabri Showgrounds: Narrabri Pony Club Caravan Park Facility	24.1 km
	Danger Park	Boheena Street, Narrabri	Danger Park: Home to the Narrabri Rugby Union Club, including ample seating and a clubhouse.	24.0 km
	Narrabri Netball Courts	Boheena Street, Narrabri		23.8 km
	Narrabri Tennis Courts	Wukuwa Street, Narrabri		23.8 km
	Collins Park	Tibbereena Street, Narrabri		24.6 km
	Narrabri Golf Club	Gibbons Street, Narrabri		25.7 km
Community Service				
Multicultural	The Narrabri Shire Visitor Information Centre	Tibbereena Street, Narrabri	Narrabri Shire Visitor Information Centre: Home to the Kamilaroi Stories project which provides an ongoing partnership between the Kamilaroi Community, Multicultural NSW and the Narrabri Shire Visitor Information Centre	25.1 km
Community Health	Winanga-Li Aboriginal and Child and Family Centre	12 Hunter Street, Gunnedah		52.3 km
	The Gatepost Support Services Inc.	108 Barber Street, Gunnedah		52.6 km
	Narrabri Community Health Centre	66 Gibbons Street, Narrabri	Narrabri Community Health Centre: Services include: Aboriginal health, counselling, alcohol and drug help, women's health, aged care assessment.	25.1 km
GP	Mackellar Rural Health Centre	27 Marquis Street, Gunnedah		52.8 km
	Barber Street Practice	110 Barber Street, Gunnedah		52.6 km
	Boggabri Medical Centre	1 Wee Waa Street, Boggabri		17.6 km
	Bridge Medical Centre	98 Maitland Street, Narrabri		24.7 km

Type	Facility Name	Address	Details	Distance to Project
	Gunnedah Rural Health Centre GP Super Clinic	27 Marquis Street, Gunnedah	The Gunnedah Rural Health Centre GP Super Clinic is in the grounds of the Gunnedah District Hospital and comprises five wings radiating from a central administration hub: Two consulting wings (14 consulting rooms for GPs, practice nurse, allied health and visiting medical specialists) One treatment wing (three consulting rooms, a three-bed observation ward and two minor operating rooms) One education wing (four consulting rooms, one large meeting room/audio-visual equipment, a library) A pathology wing ³⁷	52.8 km
	Namoi Medical Services	159 Maitland Street, Narrabri		25.0 km
	Narrabri Medical Centre	7 Doyle Street, Narrabri		25.0 km
Pharmacy	Bridge Medical Centre	98 Maitland Street, Narrabri		24.7 km
	Gunnedah Discount Drug Store	204 Conadilly Street, Gunnedah		52.4 km
	Hagley & Osmond Pharmacy	204 Conadilly Street, Gunnedah		52.4 km
	Karen Carter Chemist & Narrabri Pharmacy	127 Maitland Street, Narrabri		24.9 km
	Camstart Amcal Pharmacy	118-120 Maitland Street, Narrabri		24.9 km
	Karen Karter Chemist	270-274 Conadilly Street, Gunnedah		52.6 km
Health Service	Gunnedah District Health Service	27 Marquis Street, Gunnedah	Services available (see NSW Government Department of Health website, 'Gunnedah Community Health Services')	52.8 km

³⁷ Australian Government (Department of Health). (2014). Gunnedah GP Super Clinic. Retrieved 11 February, 2020 from Department of Health: <https://www1.health.gov.au/internet/main/publishing.nsf/Content/pacd-gpsuperclinics-latestnews-gunn>

Type	Facility Name	Address	Details	Distance to Project
Hospital	Boggabri Multi Purpose Service	3 Wee Waa Street, Boggabri	The Boggabri Multipurpose facility provides a range of acute and community-based services to the community of Boggabri ³⁸ . Services available: Emergency Department service (24hours) Maternal, child and family service Permanent residential aged care service Immunisation service Hospital service	17.4 km
	Narrabri Hospital – Hunter New England Health	66 Gibbons Street, Narrabri	A public hospital with a 28-bed inpatient unit which caters for maternity, paediatrics, medical, surgical and palliative care ³⁹ . Operating theatre – routine surgery two days per week with emergency service provided 24 hours per day Eight bed surgery unit Community health service, includes allied health Mental health service Alcohol and other drugs service Dental service	25.1 km
	Gunnedah Hospital – Hunter New England Health	27 Marquis Street, Gunnedah	A public hospital with 48 beds ⁴⁰ . Hospital provides Emergency Services, Obstetrics, Surgical and Hospice Care No dedicated mental health beds. Mental health patients are referred to Tamworth or NSW Mental Health Intake Line	52.8 km

Source: Various sources (see footnotes)

³⁸ Health Direct. (n.d.). Boggabri Multi Purpose Service. Retrieved 12 February, 2020, from Health Direct: <https://www.healthdirect.gov.au/australian-health-services/20065717/boggabri-multi-purpose-service/services/boggabri-2382-3-wee-waa-street>

³⁹ NSW Government (Department of Health). (n.d.) Narrabri Hospital. Retrieved 11 February, 2020 from Department of Health: <http://www.hnehealth.nsw.gov.au/facilities/hospitals/Pages/Narrabri-Hospital.aspx>

⁴⁰ NSW Government (Department of Health). (n.d.) Gunnedah Hospital. Retrieved 11 February, 2020 from Department of Health: <http://www.hnehealth.nsw.gov.au/facilities/hospitals/Pages/Gunnedah-Hospital.aspx>