



McCullys Gap Battery Energy Storage System

Technical Report 11 – Social Impact Assessment

August 2026



Executive summary

The project

Muswellbrook Pro Unit Holdings Pty Ltd (the applicant) is proposing the McCullys Gap Battery Energy Storage System (BESS) (referred to as ‘the project’ for the purposes of this document) in McCullys Gap, New South Wales (NSW). The project involves constructing, operating (including maintaining) and decommissioning a BESS and associated infrastructure to connect into the existing NSW high voltage electricity transmission network.

Once operational, the project would store and dispatch energy, contributing to a stable, reliable and diverse energy system in NSW.

The project is State significant development and is subject to approval and assessment in accordance with Division 4.7 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

This report

An Environmental Impact Statement (EIS) is required to support the application for approval of the project in accordance with Division 4.7 of the EP&A Act.

This report has been prepared as a technical appendix to the EIS. The report assesses the potential social impacts of the project in accordance with the requirements of the Planning Secretary’s Environmental Assessment Requirements (the SEARs) and the *Social Impact Assessment Guideline for State Significant Projects* (SIA Guideline) (DPE, 2023).

Existing environment

The project is located on parts of 380 and 578 Sandy Creek Road, McCullys Gap, about six kilometres northeast of Muswellbrook (the project area). The project area is located within the Muswellbrook Shire local government area (the Muswellbrook Shire LGA) and the Hunter-Central Coast Renewable Energy Zone (REZ).

The project area is currently used for agricultural grazing, which is the primary land use in the study area. The local area is predominantly rural and agricultural in character, with some energy transmission infrastructure, and is located within a broader region where coal mining is a prominent land use.

The project area is in the traditional lands of the Wanaruah people, who maintain connections to the land and water in the region. Several sites of cultural, spiritual and archaeological importance to Wanaruah peoples are located in the Muswellbrook Shire LGA and broader Hunter region.

Muswellbrook is the administrative centre of the Muswellbrook Shire LGA. The LGA economy is heavily reliant on coal mining, which is the largest industry by both economic output and employment. The LGA has a younger population than the NSW average, with higher than typical levels of vocational training and trade qualifications, and a relatively high proportion of non-resident workers. The Muswellbrook Shire LGA is rated as having high levels of socio-economic disadvantage.

McCullys Gap is a small rural locality (population 262) with little community infrastructure, including the McCullys Gap Community Hall, and Rural Fire Service Brigade. The rural character of the locality is valued by residents, and consultation identified sensitivity to visual changes and the cumulative effects of multiple energy projects in the area.

Housing costs have risen in recent years, placing some households under stress and some parts of the region becoming unaffordable to renters. Short term rental accommodation is experiencing high occupancy rates, with frequent use by the mining industry and major project construction compounding demand on accommodation in the Muswellbrook Shire LGA.

Construction impacts

Positive social and economic impacts during construction include employment and procurement opportunities for local and regional workers and businesses.

Potential negative social impacts during construction include localised and temporary amenity changes for nearby residents (noise, dust and visual), a temporary increase in traffic on the local road network, increased demand for short-term accommodation due to non-resident construction workers, and potential impacts on Aboriginal cultural heritage, which would be managed through an Aboriginal Cultural Heritage Management Plan.

Operation impacts

Operational impacts would be limited. The BESS would operate remotely with periodic maintenance requiring up to six personnel on a monthly or quarterly basis. Operational noise would comply with the relevant project noise trigger levels at all sensitive receivers. Project infrastructure would change the visual character of the project area as viewed from some nearby properties, with mitigation through screen planting and complementary finishes on project infrastructure.

During operation, the project would contribute to the Muswellbrook Shire Community Benefit Fund, supporting community-identified priorities in the Muswellbrook Shire LGA. A small number of local and regional businesses may benefit from supply of goods and services to the project during operation.

Decommissioning impacts

Potential social impacts from decommissioning may include minor, short-term changes to local amenity, such as noise, dust, visual disturbance, traffic and access. These impacts are expected to be minimal due to the temporary nature of the works. A Decommissioning Management Plan would include safeguards for environmental and social values, as well as stakeholder engagement protocols. With these measures in place, no significant social impacts are anticipated.

Mitigation and management

Recommended mitigation and management measures include a community and stakeholder engagement plan, local business participation and employment measures, a workforce accommodation strategy, non-resident workforce management measures, benefit sharing through the Muswellbrook Shire Community Benefit Fund, and monitoring and adaptive management provisions in the Construction Environmental Management Plan (CEMP). These measures are recommended in addition to the mitigation measures provided in other technical reports for the EIS.

Conclusion

This assessment concludes that the main potential for social impacts would be during construction. Appropriate mitigation and management measures have been recommended to minimise potential impacts and to enhance positive outcomes. Operational impacts would be limited, with visual amenity changes for some nearby receivers being the primary residual impact.

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Glossary and abbreviations

Term	Definition
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal cultural heritage assessment report
ACHMP	Aboriginal Cultural Heritage Management Plan
BESS	Battery Energy Storage System
CEMP	Construction Environmental Management Plan
Community	Anyone affected by or interested in State significant projects in NSW, including individuals, community groups, local Aboriginal and Torres Strait Islander stakeholders, culturally and linguistically diverse communities or, stakeholder groups (defined below).
Community values	Community values, or a sense of community, are the social ties established within a community, in part based around the features and qualities of the built environment that encourage these social ties and contribute to quality of life and wellbeing. A project may impact on these aspects of a community for example through changes in noise and air quality, visual amenity, traffic and access, barriers to movement across the community, and use of enjoyable community spaces.
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
GRP	Gross Regional Product
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
kV	Kilovolt
LGA	Local government area
LSPS	Local Strategic Planning Statement
MW	Megawatt
NSW	New South Wales
PAD	Potential archaeological deposit
Project	Construction, operation and decommissioning of the McCullys Gap Battery Energy Storage System
Project area	The area required to construct and operate the project
RAPs	Registered Aboriginal Parties
REMPAN	Regional Economic Modelling and Planning System
REZ	Renewable Energy Zone
SAL	Suburb and Locality
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
Suburb and Locality (SAL)	An approximation of the officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside cities and larger towns) (ABS, 2021c).
SIA	Social impact assessment
SIA Guideline	<i>Social Impact Assessment Guideline for State Significant Projects</i> (DPE, 2023)
Social cohesion	The ABS defines social cohesion (also known as community cohesion) as '...the bonds and relationships people have with their family, friends and the wider community. Day to day interactions between people in a community build trust and reciprocity and contribute to cohesion.' (Australian Bureau of Statistics (ABS), 2010).

Term	Definition
Social impact	Social impacts are the consequences people experience when a new project brings change.
Social locality	Social locality is the area in which people may experience social impacts from the project.
Socio-economic Indexes for Areas (SEIFA)	The ABS produces four socio-economic indices for areas (SEIFA) based on Census data, which identify areas of relative advantage and disadvantage. Socio-economic advantage and disadvantage are defined broadly by the index of relative socio-economic advantage and disadvantage (IRSAD) in terms of people's access to material and social resources and their ability to participate in society (ABS, 2021d). To capture this broad definition, the IRSAD includes a range of data points, including income, education, employment, occupation, and housing. IRSAD scores are presented in deciles and state rankings, with one being the lowest socioeconomic decile and the most disadvantaged and 10 being least disadvantaged.
SSD	State Significant Development
Stakeholder group	A group or organisation that represents several people with an interest in a project.
TAFE	Technical and Further Education
Technical Supplement	<i>Technical Supplement - Social Impact Assessment Guideline for State Significant Projects</i> (DPHI, 2025)
TWA	Temporary workforce accommodation

1. Introduction

1.1 Project overview

Muswellbrook Pro Unit Holdings Pty Ltd (the applicant) is proposing the McCullys Gap Battery Energy Storage System (BESS) (referred to as the 'project' for the purposes of this document) in McCullys Gap, New South Wales (NSW). The project involves constructing, operating (including maintaining) and decommissioning a BESS and associated infrastructure to connect into the existing NSW high voltage electricity transmission network.

Once operational, the project would store and dispatch energy, contributing to a stable, reliable and diverse energy system in NSW.

The project is State significant development (SSD) in accordance with section 2.6(1) of State Environmental Planning Policy (Planning Systems) 2021 and is subject to approval and assessment in accordance with Division 4.7 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

This report forms a technical appendix to the Environmental Impact Statement (EIS) prepared in support of an application for approval of the project.

1.1.1 Location

The project is located on parts of 380 and 578 Sandy Creek Road, McCullys Gap, NSW, about six kilometres northeast of Muswellbrook (referred to as 'the project area' for this report), within the Muswellbrook Shire local government area (LGA) and the Hunter-Central Coast Renewable Energy Zone (REZ) (refer to Figure 1.1).

1.1.2 Key project features

The key features of the project include:

- 400 MW battery energy storage system, with a duration of up to four hours (1,600 MWh) with associated power control, transformers, switchgear and safety systems
- connection infrastructure, including a project substation, 800 metre transmission line and associated infrastructure to connect the project substation to the existing Muswellbrook 330 kV substation
- works at the existing Muswellbrook 330 kV substation to facilitate connection of the project's connection infrastructure to the high-voltage transmission connection point
- associated ancillary and enabling infrastructure including operation and maintenance facilities, internal access, fencing, drainage, firewater facilities, safety and security infrastructure.

During construction, temporary facilities would be established on site, including a site office, compounds and laydown areas.

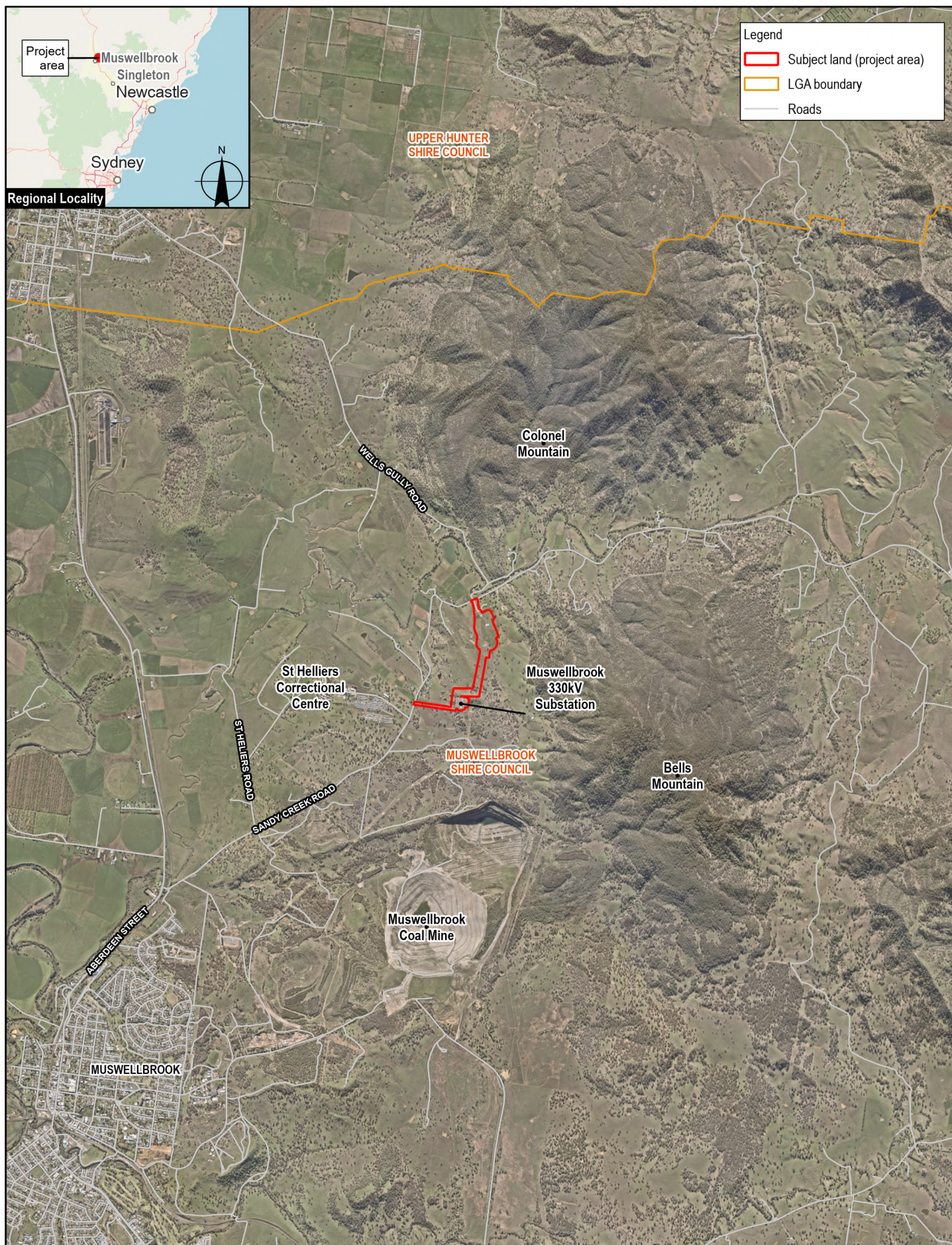
Further information about the project is provided in chapter 3 (Project description) of the EIS.

1.1.3 Timing

Construction is anticipated to start in 2027, subject to obtaining necessary approvals, and would take about 18 months. The project may be constructed in one or more stages. Operation is planned to commence in 2029 following commissioning and testing.

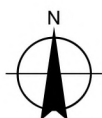
1.1.4 Operation and decommissioning

The project is proposed to operate remotely 24 hours a day seven days a week for at least 30 years. At the end of its operational life, the project would be decommissioned, involving the removal of all above-ground infrastructure (except for infrastructure associated with the existing Muswellbrook 330 kV substation) in accordance with relevant regulatory requirements. Disturbed areas would be rehabilitated to a condition suitable for rural land use.



Paper Size ISO A4
0 500 1,000 1,500
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56



Muswellbrook Pro Unit Holdings Pty Ltd
McCullys Gap BESS

Project No. 12627183
Revision No. 2
Date 14/08/2026

Project location

FIGURE 1.1

1.2 Purpose and scope of this document

This report assesses the potential social impacts of the project in accordance with the environmental assessment requirements of the Secretary of the Department of Planning, Housing and Infrastructure (DPHI) (the SEARs), issued on 16 April 2025. The report:

- addresses the relevant SEARs as outlined in Table 1.1
- describes the existing environment with respect to the existing social and community context
- assesses the impacts of constructing, operating and decommissioning the project in relation to social impacts or benefits
- recommends measures to mitigate and manage the impacts identified.

Table 1.1 SEARs requirement – Social

SEARs	Where addressed in this report
Social and Economic– including:	
An assessment of the social impacts or benefits of the project for the region and the State as a whole in accordance with the <i>Social Impact Assessment Guideline</i> (DPE, 2023), including consideration of any increase in demand for community infrastructure services, and consideration of construction workforce accommodation.	This report presents a social impact assessment (SIA) that has been prepared in accordance with the requirements of the <i>Social Impact Assessment Guideline for State Significant Projects</i> (DPE, 2023). The potential social impacts and benefits of the project, including for the region and State, are discussed in sections 6, 7 and 8. The potential social impacts on community infrastructure services are discussed in sections 6.6 and 7.6. The potential social impacts related to construction workforce accommodation are discussed in section 6.5.
An assessment of the economic impacts or benefits of the project for the region and the State as a whole and provide details of any proposed voluntary benefit sharing, having regard for the <i>Benefit-Sharing Guideline 2024</i> and <i>Private Agreement Guideline 2024</i> .	The potential economic impacts and benefits resulting from the project, including for the region and State, are discussed in sections 6.4 and 7.4. Information on benefit sharing is provided in section 7.7.

1.3 Report structure and content

The structure and content of the report are outlined in Table 1.2.

Table 1.2 Report structure and content

Section	Description
Section 1 – Introduction	Outlines the key elements of the project, relevant SEARs requirements, and the purpose of this report.
Section 2 – Legislative and policy context	Outlines the legislation, policies, plans and guidelines that are relevant to the assessment.
Section 3 – Methodology	Describes the study area and methodology for the assessment.
Section 4 – Summary of consultation outcomes	Includes a summary of consultation findings considered as part of the social impact assessment.
Section 5 – Existing environment	Describes the existing socio-economic values and character of the study area and project area.
Section 6 – Construction impacts	Examines the potential for social impacts during construction.
Section 7 – Operation impacts	Examines the potential for social impacts during operation (including maintenance).
Section 8 – Decommissioning impacts	Examines the potential for social impacts during decommissioning.
Section 9 – Cumulative impacts	Provides an assessment of cumulative impacts.
Section 10 – Mitigation and management measures	Provides the approach to mitigating and managing the potential impacts identified, including recommended mitigation measures.
Section 11 – Conclusion	Provides the key findings of the assessment.

1.4 Authors of this report

The *Social Impact Assessment Guideline for State Significant Projects* (DPE, 2023) requires suitably qualified and experienced practitioner/s to be involved in the preparation of the SIA report. The personnel involved in the preparation of this SIA and their respective qualifications are provided in Table 1.3.

Table 1.3 Authors and qualifications

Name	Position	Project Role	Qualifications	Professional Memberships	Years of Experience
Lauren Harding	Executive advisor – Social sustainability	Technical reviewer	Master of Social Science (Social Planning), Bachelor of Arts (Anthropology)	Environment Institute of Australia and New Zealand International Association for Public Participation	18
Devon Sanson	Social Sustainability and Engagement Consultant	SIA author	Bachelor of Arts (Development Studies)	International Association for Public Participation	4
Pia Bavaro	Graduate Social Sustainability and Engagement Consultant	SIA support	Bachelor of City Planning (Hons.) Diploma Innovation	International Association for Public Participation	2

I, Lauren Harding, declare that the *McCullys Gap BESS Social Impact Assessment (SIA)* contains all information relevant to the SIA for the project and that the information is not false or misleading. The assessment was completed on 13 August 2026.



Lauren Harding

2. Legislative and policy context

This section provides an outline of key legislation and policies relevant to the assessment of potential social impacts.

2.1 NSW legislation and guidelines

Table 2.1 summarises NSW legislation and policies relevant to this SIA, including those related to regional and economic development, employment and supporting resilient communities.

Table 2.1 *Legislation and policy*

Title	Description	Relevance to this report
<i>Environmental Planning and Assessment Act 1979</i>	The project is SSD under section 4.36(2) of the EP&A Act and is subject to assessment and approval in accordance with Division 4.7 of the EP&A Act. Further information about the statutory context for the project is provided in chapter 4 (Statutory context) of the EIS. The objects of the EP&A Act (section 1.3 of the Act) are the guiding principles that need to be considered by planning authorities when making decisions under the Act. Objects of the EP&A Act that are relevant to the project and the SIA include: a. <i>to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources</i> g. <i>to promote good design, amenity and the proper construction and maintenance of built environments, including the protection of the health and safety of the occupants of buildings</i> h. <i>to provide opportunities for participation in environmental planning and assessment,</i> i. <i>to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,</i> j. <i>to promote a proportionate and risk-based approach to environmental planning and assessment</i> k. <i>to promote the orderly and economic use and development of land.</i>	This SIA has considered these objects in the scoping and assessment of potential impacts of the project, including opportunities for communities and stakeholders to participate in the SIA consultation process. The SIA will assist the consent authority when making a decision about the project.
<i>Social Impact Assessment Guideline for State Significant Projects (SIA Guideline) (DPE, 2023)</i>	The SIA Guideline was developed to provide a clear and consistent approach to assessing the social impacts of State significant projects. The SIA Guideline provides a framework to identify, predict and evaluate likely social impacts of major projects. It defines the required approach to SIA for major projects. It establishes eight assessment categories to be used in the identification of social impacts. The aim of the categories is to ensure that projects are assessed from the perspective of people and that they deliver socially sustainable outcomes. The guideline is supported by the <i>Technical Supplement - Social Impact Assessment Guideline for State Significant Projects</i> (Technical Supplement) (DPHI, 2025).	This SIA has been prepared in accordance with the requirements of the SIA Guideline and the Technical Supplement. Further information about the methodology for the SIA is provided in section 3.
<i>Benefit Sharing Guideline (Department of Planning, Housing and Infrastructure (DPHI), 2024a)</i>	The <i>Benefit Sharing Guideline</i> provides a consistent framework for delivering community benefits from State significant renewable energy projects in NSW. It outlines expectations for early and ongoing community engagement, the identification of host and neighbouring communities, and the development of benefit sharing programs that respond to local needs. The guideline establishes principles for equitable, transparent and inclusive benefit sharing, including requirements for community benefit funds, neighbourhood benefit programs and opportunities for local participation in project outcomes.	This SIA has considered the principles and expectations of the Benefit Sharing Guideline in identifying opportunities to enhance positive social outcomes and minimise social impacts. The proposed benefit sharing approach for the project is outlined in section 7.7.

2.2 Relevant plans and policies

Table 2.2 outlines key plans and policies relevant to the SIA.

Table 2.2 *Relevant plans and policies*

Title	Description	Relevance to this report
<i>Hunter Regional Plan 2041 (DPE, 2022b)</i>	The <i>Hunter Regional Plan 2041</i> provides a 20-year vision for land use within the Hunter Region to achieve economic development objectives. In particular, the plan outlines opportunities to diversify the Hunter's mining, energy and industrial capacity. In particular, the plan outlines opportunities for growth in the energy sector, diverse housing, connected and dependent communities, and heritage and environmental protection. An objective within the plan is to 'diversify the Hunter's mining, energy and industrial capacity' and identifies the potential to increase renewable energy production including associated energy storage infrastructure, green hydrogen production, and advanced manufacturing within the Hunter. The plan recognises the role of batteries in energy generation as part of the Hunter-Central Coast REZ and the potential of the REZ to attract community benefit-sharing schemes and create new jobs in other energy industries.	This SIA considers how the project contributes to the regional plan objectives regarding economic development and employment opportunities.
<i>Muswellbrook Shire Council Local Strategic Planning Statement 2020-2040</i> (Muswellbrook Shire Council, 2020)	The <i>Muswellbrook Shire Council Local Strategic Planning Statement 2020-2040</i> (the Muswellbrook Local Strategic Planning Statement (LSPS)) is a roadmap to manage growth and social, economic and environmental land use over the next 20 years. Council places great importance on encouraging development, growth and innovation in the LGA. The strategy aligns with the Hunter Regional Plan and identifies core strategies and immediate actions needed to pursue the vision. The following Planning Priorities identified by the Muswellbrook LSPS are of particular relevance to this SIA: – Planning Priority 1 supports broader employment diversification, and production and distribution of sustainable energy. – Planning Priority 4 aims to protect important agricultural land and avoid conflicts that discourage the investment in agricultural production. – Planning Priority 5 aims to protect rural areas from incompatible land uses and encourages establishing compatible and supporting land uses. – Planning Priority 12 aims to provide infrastructure, specifically transport infrastructure to ensure accessibility. – Planning Priority 15 aims to protect and enhance land and habitats of environmental value and strengthen and protect biodiversity corridors.	This SIA considers potential social impacts that are relevant to the priorities of the Muswellbrook LSPS, including potential impacts on landholders, neighbouring businesses, and communities.
<i>Muswellbrook Shire Council Community Strategic Plan 2025-2035</i> (Muswellbrook Shire Council, 2025a)	The <i>Muswellbrook Shire Council Community Strategic Plan 2025-2035</i> outlines the community's long-term vision for the future over a period of 10 years. The framework highlights five key outcomes that Council and other stakeholders will work with the community to achieve. The following outcomes are particularly relevant to this SIA. – Economy: support the diversification of the local economy, through attracting new industry and businesses, and to support innovation and reskilling for future workforce needs.	This SIA considers how the project contributes to the Community Strategic Plan outcomes regarding impacts on the local and regional economy.
<i>Muswellbrook Shire Council Local Housing Strategy 2024</i> (Muswellbrook Shire Council, 2024a)	The <i>Muswellbrook Shire Council Local Housing Strategy 2024</i> outlines directions and strategies to meet housing needs within the LGA over the next 20 years. The strategy highlights six key insights to understand the historic and current state of housing in the LGA. The following insights are particularly relevant to this SIA: – Incomes have not kept up with costs, impacting housing affordability in our community. – Although demand for housing is high, existing housing supply appears to be underutilised.	The SIA considers construction workforce housing demand, affordability risks, and alignment with Muswellbrook's planned housing capacity.

Title	Description	Relevance to this report
<i>Muswellbrook Shire Council Temporary Workforce Accommodation Policy MSC082E (Muswellbrook Shire Council. (2025b)</i>	The Temporary Workforce Accommodation Policy outlines Council's expectations for any proposed temporary workforce accommodation (TWA) within the Muswellbrook Shire LGA. The policy establishes a preference for TWA to be located within or near existing urban areas to reduce long-term infrastructure costs, enable expansion of urban areas following decommissioning, and integrate workers into the community. Key objectives of the policy include: – improving social health and wellbeing of workers and increasing the likelihood of workers becoming permanent residents – providing greater benefit for the local economy through integration with existing services and businesses – mitigating risks associated with poorly designed infrastructure and poorly managed on-site systems. The policy also identifies that self-contained TWA facilities provide limited benefits to the local economy.	This SIA considers the policy objectives in the assessment of workforce accommodation impacts during construction (section 6.5) and in the development of the recommended workforce accommodation strategy (section 10).

3. Methodology

This section provides a description of the methodology for the assessment. It describes the overall approach and the steps followed to identify and assess the potential social impacts of the project.

3.1 Approach to the SIA

The methodology for the SIA, which responds to the SEARs and is in line with leading practice for SIA, is consistent with the following guidelines:

- *Social Impact Assessment Guideline for State Significant Projects* (DPE, 2023)
- *Technical Supplement – Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2025)
- *International Association for Impact Assessment International Principles for Social Impact Assessment* (Vanclay, 2023)
- *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay, et al., 2015)

The SIA Guideline has a set of review questions to confirm that the requirements of the guideline have been met when considering the social impacts of a project. A response to the review questions is provided in Appendix A.

For the purposes of the SIA, social impacts are defined as the consequences that people and communities experience as a result of project-induced changes that affect the way they 'live, work, play, relate to one another, organise to meet their needs and generally cope as members of society' (Burge

As outlined in the SIA Guideline, social impacts can involve changes to one or more of the following social values:

- **Way of life**, including how people live, how they get around, how they work, how they play, and how they interact each day.
- **Community**, including composition, cohesion, character, how the community functions, resilience, and people's sense of place.
- **Accessibility**, including how people access and use infrastructure, services and facilities, whether provided by a public, private or not-for-profit organisation.
- **Culture**, both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings.
- **Health and wellbeing**, including physical and mental health, especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
- **Surroundings**, including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
- **Livelihoods**, including people's capacity to sustain themselves through employment or business.
- **Decision-making systems**, including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

A social impact can be direct, indirect or cumulative, and negative or positive. It can also vary according to the individual, community, or segment of a community by whom it is experienced.

The term 'community' refers to a network of people and/or organisations who are linked together by a web of personal relationships; cultural and political connections, shared identities and traditions, similar socioeconomic conditions, or common understandings and interests (Vanclay, et al., 2015). For the SIA, the term 'community' is used to refer to people residing in a shared discrete geographic location – for example, a rural town or regional centre. However, in select cases, it may also be used to describe a 'community of identity' or a 'community of interest'.

The following sections describe the steps undertaken to prepare the SIA.

3.2 Scoping of potential social issues

A social impact scoping exercise was undertaken for the *McCullys Gap Battery Energy Storage System Scoping Report* (GHD, 2025). The purpose of the scoping exercise was to undertake a preliminary assessment of the potential social impacts that may occur as a result of the project. This helped identify potential social values that may experience change, the social locality, and the level of assessment required for social impacts.

Potential social impacts were identified through a review of information presented in the scoping report, understanding of the indicative social locality, and based on previous professional experience undertaking SIAs for state significant projects in NSW. Potential social impacts identified during the social impact scoping process are summarised below:

- Changes from agricultural land to energy storage infrastructure. Given the rural nature of the project area and surroundings, residents may be sensitive to changes in land use.
- Amenity impacts due to increased noise, dust and construction traffic.
- Light and heavy construction vehicle movements impacting Sandy Creek Road. Due to a low baseline of traffic on the road, residents may be sensitive to this change. There is also the possibility of minor traffic disruptions on Sandy Creek Road and New England Highway.
- Non-resident construction workforce accommodation requirements in Muswellbrook or Aberdeen, potentially impacting the availability of accommodation options for residents or visitors.
- Local businesses may indirectly benefit from the project due to construction workers using their services. These are likely to be food and beverage providers, or accommodation providers.
- Potential employment opportunities for local workers and procurement and supply opportunities for local businesses during the project construction period.
- Visual amenity impacts during construction and operation to neighbouring residences, who will have a change from rural / agricultural outlook to energy storage.
- Potential for community concern or uncertainty regarding the safety of battery storage technology, including perceived fire risk.

Findings of the scoping report informed the locality and indicators used in the social baseline (section 5), identified social impact themes (sections 6 and 7) and aligned with impact categories identified in the SIA Guideline (section 3.6). Potential impacts during the scoping phase were used to inform the social impact study and may have been considered to not be relevant during detailed assessment, due to changes in the project description or issues revealed during SIA targeted consultation or research.

3.3 Social locality (study area)

The study area that was defined for the SIA needed to include the communities that were most likely to experience social impacts (both positive and negative) resulting from a project, as well as the extent and scale of potential impacts. The term social locality is used in the SIA guidelines.

The social locality for this SIA was identified by considering the following factors:

- the people and communities most likely to experience changes to existing socio-economic conditions resulting from the construction or operation of the project, project infrastructure or land use changes
- areas that may potentially supply goods and services and labour to the project
- areas that may be located some distance from the project infrastructure but experience indirect or flow on impacts.

The social locality for this SIA included a local and regional study area, as described in Table 3.1. The social locality is shown in Figure 3.1.

Table 3.1 Social locality for the SIA

Social locality	Definition	Area (Australian Bureau of Statistics (ABS) statistical area)
Local study area	The local study area includes the following localities: – McCullys Gap: The project area is located in McCullys Gap Suburb and Locality (SAL). – Muswellbrook: The project area is located just north of the Muswellbrook SAL which is likely to supply workforce, goods and services, and potentially workforce accommodation. Landholders, local residents and businesses in these localities may experience social impacts during construction, operation and decommissioning of the project.	McCullys Gap SAL Muswellbrook SAL
Regional study area	The project area and local study area is located within the Muswellbrook Shire LGA, which was the regional study area for the SIA. The town of Muswellbrook is the largest population centre in the LGA. Communities in the LGA may experience social impacts, both positive and negative, during construction, operation and decommissioning of the project.	Muswellbrook Shire LGA

3.4 Establishing the social baseline

The social baseline defined the existing social characteristics within the social locality (the study area for the SIA as described in section 3.3). The social baseline was used as the basis against which the impacts were measured. A social baseline was prepared for the local study area and regional study area.

The local study area social baseline described:

- the project area and surrounds
- select demographic indicators for the communities intersected by the project area.

The regional study area social baseline described:

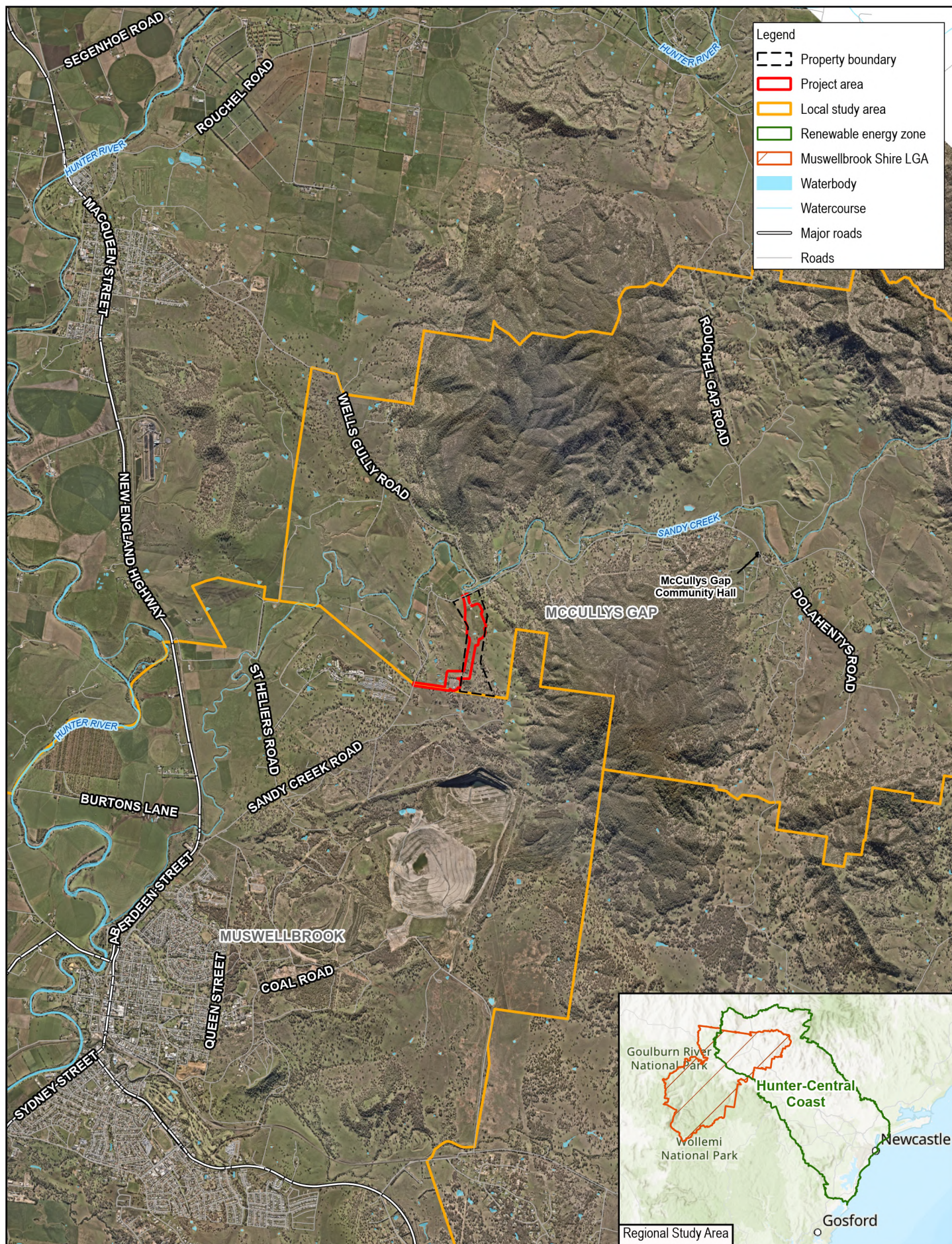
- demographic indicators
- economic and employment profile
- housing and accommodation availability
- social infrastructure and services
- community values and priorities
- access and connectivity.

In addition, the social baseline identified the social locality as being located on the traditional lands of the Wanaruah People, along with values identified by Aboriginal stakeholders during SIA consultations.

Data to inform the social baseline was gathered from the following sources:

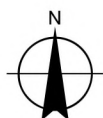
- ABS Census 2021 and 2016
- Jobs and Skills Australia Small Area Labour Markets, Unemployment Rate (Department of Employment and Workplace Relations, 2024)
- Regional Economic Modelling and Planning System (REMPAN) – a population and economic data resource (REMPAN, 2024a)
- NSW Population Projections (DPHI, 2024b)
- local, State and Australian Government websites and publications
- information from stakeholder consultation (refer to section 4).

The social baseline for the SIA is provided in section 5. Detailed demographic data is provided in Appendix B.



Paper Size ISO A4
0 500 1,000 1,500 2,000
Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56



Muswellbrook Pro Unit Holdings Pty Ltd
McCullys Gap Battery Energy Storage System
Social Impact Assessment

Project No. **12627183**
Revision No. **0**
Date **10/08/2026**

Study area

FIGURE 3.1

3.5 Stakeholder consultation

The applicant and project team undertook engagement with stakeholders, landholders and communities throughout the project planning and approvals process to inform the EIS. Chapter 5 (Community and stakeholder engagement) of the EIS describes the activities and the stakeholders which have been consulted to date and provides a summary of the issues raised. Findings from the EIS-wide consultation were considered when developing this SIA.

This consultation included community drop-in sessions, direct contact with landholders and neighbours, a public website and collateral, and meetings with Commonwealth, State and local government, Aboriginal stakeholders and landowners.

Further consultation to specifically support the development of the SIA was also undertaken. Identification of stakeholders potentially interested in the SIA took place following the scoping of potential social issues and social baseline study described in sections 3.2 and section 3.4. Stakeholders were selected based on their expected knowledge and experience of the social locality, and interest in potential social issues and benefits. Stakeholders were prioritised from high to low based on their potential interest in the study.

SIA-specific consultation was undertaken by the SIA team in October 2025. High priority stakeholders were contacted first, with medium and low priority stakeholders following. Of the ten stakeholders contacted, two participated in interviews, one provided written information, one declined, and no response was received from the remaining six. To supplement the consultation outcomes, a review of consultation findings from other recent projects in the Muswellbrook Shire LGA was also undertaken.

SIA-specific consultation consisted of virtual interviews with local stakeholders. Interviews were semi-formal, consisting of semi-structured discussions regarding existing conditions in the social locality, potential impacts or concerns stakeholders may have, and potential mitigation, avoidance or management measures and benefit enhancements. Interviews were about one hour long each.

Table 3.2 shows a record of approaches and responses to stakeholders. Specific stakeholder names have been generalised to the industry or service they provide.

Table 3.2 *SIA stakeholder consultation record*

Stakeholder	Requests for interview	Response
Local government	Contacted 3/10/25 (Email) Contacted 10/10/25 (Email)	Accepted
Environmental group	Contacted 13/10/25 (Email)	Accepted
Community service provider	Contacted 1/10/25 (Email) Contacted 10/10/25 (Email)	Declined
Local business representative group	Contacted 1/10/25 (Email) Contacted 10/10/25 (Email) Followed up 21/10/25 (Email) Call and follow up email 21/11/ 25 Further email correspondence 14/1/26 Further email correspondence 9/2/26	Unable to confirm participation
Industry workforce representative	Contacted 13/10/25 (Email) Contacted 21/10/25 (Email)	No response
Accommodation provider	Contacted 1/10/25 (Email) Contacted 10/10/25 (Email)	No response
Emergency service	Contacted 21/10/25 (Email) Follow up email 21/11/25 Follow up email 1/12/25 Called and emailed follow up 14/1/26	No response
Emergency service (alternate)	Contacted 21/10/25 (Email)	No response

Stakeholder	Requests for interview	Response
Health provider	Contacted 13/10/25 (Email) Contacted 21/10/25 (Email)	No response
Education provider	Contacted 21/10/25 (Email)	Provided written response regarding course information, no response to interview request

A summary of the stakeholder consultation and an overview of engagement activities is provided in Table 3.3.

Table 3.3 *List of stakeholders consulted for SIA*

Stakeholder	Date consulted	Method
Local government	17 October 2025	Online teleconferencing meeting
Environmental group	20 October 2025	

To supplement the low participation in stakeholder consultation, a review was undertaken of consultation findings from other recent projects in the Muswellbrook Shire LGA that share relevant characteristics with the project, including proximity to the project area, use of common transport corridors and infrastructure, and overlapping stakeholder groups. The purpose of this review was to identify recurring concerns and expectations raised by communities and stakeholders in the area that are relevant to the social impact themes assessed in this report.

Projects were selected for review based on the following criteria:

- located within or in close proximity to the local study area
- development approval process completed no earlier than 2021
- consultation outcomes publicly available and relevant to one or more social impact themes for this project (for example, traffic and access, workforce accommodation, visual amenity, or community cohesion).

Table 3.4 summarises the projects considered. While these projects differ in type and scale, each involved consultation with stakeholders in the Muswellbrook Shire LGA on social impact themes that are common to the project. The outcomes of the review have informed the identification of potential social impacts and benefits, and mitigation measures.

Table 3.4 *Projects considered*

Project name	Status	Stakeholders consulted	Consultation details	Documents referred to
Muswellbrook Battery Energy Storage System	Approved in 2023	Muswellbrook Shire Council The Sustainability Hub	May – June 2022	<i>Muswellbrook Battery Energy Storage System - Social and Economic Impact Assessment</i> (Bd Infrastructure Pty Ltd, 2022)
Muswellbrook Solar Farm	Approved in 2025	Muswellbrook Shire Council St Heliers Correctional Centre Wanaruah Local Aboriginal Land Council Wanaruah Nation Aboriginal Corporation Blackrock industries Nearby neighbours and residents Friends of the Upper Hunter community group Muswellbrook Chamber of Commerce One accommodation provider Nine community members within Muswellbrook Two community members in nearby townships	August – October 2022	<i>Muswellbrook Solar Farm - Social Impact Assessment</i> (EMM, 2023)

Project name	Status	Stakeholders consulted	Consultation details	Documents referred to
Muswellbrook Bypass – New England Highway	Approved under Division 5.1 of the EP&A Act	Subsidence Advisory NSW Muswellbrook Coal Company NSW Environment Protection Agency Tourism Development Consultant NSW Department of Primary Industries Muswellbrook Shire Council 18 Individuals	December 2021 – February 2022	<i>New England Highway bypass of Muswellbrook - Review of Environmental Factors</i> (Transport for NSW, 2021)

3.6 Description and assessment of social impacts

Following the scoping of social issues described in section 3.2, social impacts were identified and described using a data triangulation method, whereby multiple sources of information were used to confirm social impacts. These information sources included:

- Chapter 3 (Project description) of the EIS to understand the proposed activities that would influence social aspects
- baseline conditions against which the social changes/impacts were measured
- outcomes of community and stakeholder consultation activities to understand the existing environment and stakeholder views on potential social changes
- relevant literature and studies as referenced throughout the report
- technical studies prepared for the EIS to gather technically sound evidence to identify and assess the social changes resulting from the project:
 - Technical Report 2 (Noise and vibration)
 - Technical Report 3 (Landscape and visual)
 - Technical Report 4 (Aboriginal cultural heritage assessment report (ACHAR))
 - Technical Report 6 (Land use and agriculture)
 - Technical Report 7 (Traffic and transport)
 - Technical Report 9 (Preliminary hazard analysis).

The evaluation of identified social impacts was undertaken using a likelihood and magnitude significance rating, based on the significance criteria outlined in the Technical Supplement.

Likelihood refers to the level of certainty that an impact would occur and is defined in Table 3.5.

Table 3.5 Defining likelihood levels of social impacts as per the Technical Supplement

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g. has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Source: Table 3 of the Technical Supplement (DPHI, 2025)

Magnitude refers to the extent, duration, severity or scale, intensity or importance, and level of concern or interest, as described in Table 3.6.

Table 3.6 Dimensions of social impact magnitude as per the Technical Supplement

Dimensions		Details needed to enable assessment
Magnitude	Extent	Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any vulnerable people? Which location(s) and people are affected? (e.g. near neighbours, local, regional, future generations).
	Duration	When is the social impact expected to occur? Will it be time-limited (e.g. over particular project phases) or permanent?
	Severity or scale	What is the likely scale or degree of change? (e.g. mild, moderate, severe).
	Intensity or importance	How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? This might depend on the value they attach to the matter; whether it is rare/unique or replaceable; the extent to which it is tied to their identity; and their capacity to cope with or adapt to change.
	Level of concern/ interest	How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and/or intensity.

Source: Table 4 of the Technical Supplement (DPHI, 2025)

The levels of magnitude are defined in Table 3.7.

Table 3.7 Defining magnitude levels for social impact as per the Technical Supplement

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Source: Table 5 of the Technical Supplement (DPHI, 2025)

The values in Table 3.8 are used to rate the level of significance of the potential impacts. This was done by combining the likelihood with the level of magnitude.

Table 3.8 Social impact significance matrix

Magnitude level					
	1	2	3	4	5
Likelihood level	Minimal	Minor	Moderate	Major	Transformational
A Almost certain	Low	Medium	High	Very high	Very high
B Likely	Low	Medium	High	High	Very high
C Possible	Low	Low	Medium	High	High
D Unlikely	Negligible	Low	Low	Medium	High
E Very unlikely	Negligible	Negligible	Low	Medium	Medium

The risk rating then determined if mitigation or management actions were required to address the social impact. Negative social impacts with a risk rating of medium, high or very high require mitigation or management actions.

It should be noted that the degree to which community members would experience social impacts would vary based on factors such as perceptions and individual values, sensitivity to change, distance from the project, and duration people experience the impacts over. The assessment of risks took this into consideration and applied a risk rating for the majority of stakeholders affected by the identified potential impact. However, the risk rating would likely be higher or lower for some stakeholders given the subjective nature of social impacts, which varies based on a stakeholder's ability to adapt to impacts.

3.7 Recommended social impact mitigation and management measures

Social impact mitigation and management measures are provided in section 10 to enhance the potential positive social impacts of the project for stakeholders and communities and avoid, manage or mitigate the potential negative social impacts. These measures are proposed in addition to those recommended by other technical reports and EIS chapters, which would also help to mitigate and manage the potential for social impacts.

The social impact mitigation and management measures were developed using adaptive management principles, recognising that impacts may change over time, and that ongoing monitoring of impacts would provide the flexibility to accommodate such changes.

3.8 Data information and limitations

The following limitations to the assessment are noted:

- The assessment was undertaken based on publicly available information, consultation undertaken as part of the SIA assessment and broader EIS process.
- ABS census data was used to develop the social baseline profile of the social locality. Census data is collected every five years, with the demographic data presented in this report including the most recent 2021 Census and 2016 Census, where relevant. As such, some of the data used in the existing conditions section of the report may not fully capture demographic change from these dates. However, this information is sufficient for the purposes of understanding the potential positive and negative impacts of the project.
- Data was collected from the ABS with the understanding that slight adjustments have been made throughout the dataset to ensure confidentiality is maintained. Small discrepancies are therefore expected.

The assessment sought to mitigate the above limitations through the use of multiple data sources, which were cross-referenced in a process of triangulation to provide a more comprehensive and accurate analysis.

4. Summary of consultation outcomes

Table 4.1 presents a summary of community and stakeholder consultation outcomes relevant to the SIA, including key themes and issues raised, and where they are considered.

Table 4.1 Key themes and issues raised during consultation relevant to the SIA

Theme	Issues raised	Where addressed in SIA
Traffic and road network impacts	- Existing concerns regarding safety at the New England Highway and Sandy Creek Road intersection, road surfaces on Sandy Creek Road, and the Sandy Creek Road level crossing. - Concern that these issues may be exacerbated by construction traffic associated with this project. - Concern about extended periods of heavy vehicle movements associated with multiple projects in the area.	Access and connectivity are considered in section 6.8.
Cumulative construction impacts	- Concern that the clustering of projects in the McCullys Gap area may intensify cumulative impacts on local roads, land, services and residents. - The potential scale and duration of cumulative impacts are contributing to uncertainty and concern among some residents. - Suggestion that applicants and the State government should work more closely together to coordinate the management of cumulative impacts. - Repeated consultation and engagement processes across multiple projects is contributing to consultation fatigue, reduced engagement and difficulty distinguishing between projects. - The importance of clear, timely, and accurate communication was emphasised.	Cumulative impacts are assessed in section 9.
Noise	- Concern about noise impacts on nearby residents during construction, particularly given the low ambient noise environment of the area which is valued by local residents. - Concern about potential operational noise generated by the BESS.	Construction noise impacts are considered in section 6.3.1. Operational noise impacts are considered in section 7.3.1.
Visual amenity and loss of rural character	- McCullys Gap is viewed by some stakeholders as one of the remaining areas in the Muswellbrook Shire LGA retaining a predominantly rural character, which may heighten sensitivity to visual changes. - Some residents acknowledged that a degree of visual change is likely, and identified screen planting as the primary form of available mitigation.	Changes to visual amenity during construction are considered in section 6.3.2. Operational changes are considered in section 7.3.2.
Workforce accommodation	- Council's temporary workforce accommodation policy prioritises accommodation close to town to support local businesses and services. - Use of permanent rental housing to accommodate construction workers is not supported by stakeholders consulted.	Impacts on housing and accommodation from the non-resident construction workforce are assessed in section 6.5.
Strain on emergency services and fire risk	- Concerns about fire risks and fire protection systems. - Concern about the capacity of local emergency services, including the Rural Fire Service, to respond to battery-related fire events.	Impacts on social infrastructure during construction are considered in section 6.6. Community safety is considered in section 7.7.
Economic diversification	- Energy storage and generation projects may support regional economic transition by attracting new skills, businesses and supply chains, and contributing to a more diversified economic base. - The reduction in agricultural land due to transition to mining or industrial uses is affecting the viability of some local agri-businesses.	Economic impacts are assessed in sections 6.4 and 7.4.

Theme	Issues raised	Where addressed in SIA
Community cohesion	– Some residents, particularly those employed in the mining industry, are concerned that the growth of energy generation and storage projects may affect mining employment. – This has contributed to some community opposition to such projects and uncertainty about the timing and implications of mine closures. – A perception among some community members that the increase in energy projects may contribute to social tensions in local communities.	Community cohesion impacts are assessed in sections 6.7 and 7.7.
Long-term legacy and community benefit	– Desire to work with applicants on land management and landscaping, including opportunities to incorporate parkland, viewing areas and project information into the project design. – Support for retraining opportunities, and local employment and procurement opportunities associated with the energy sector.	Community benefits are discussed in section 7.7.

5. Existing environment

This section describes the existing social characteristics of the social locality as they relate to the issues discussed in the scoping exercise, summarised in section 3.2.

5.1 Local study area

5.1.1 Overview

As described in section 3.3, the local study area consists of McCullys Gap and Muswellbrook SALs. The project area is located in the southwest of McCullys Gap SAL and borders Muswellbrook SAL in the south. The project area comprises rural residential uses, agricultural grazing and the Muswellbrook 330 kV substation. Existing features include dwellings, agricultural infrastructure, unsealed access tracks, fencing and electrical infrastructure associated with the existing substation. Neighbouring properties are also associated with rural residential uses and agricultural grazing.

Sandy Creek Road is a local road that connects McCullys Gap with Muswellbrook at the New England Highway. It is a local road controlled by Muswellbrook Shire Council, sealed and marked with a typical speed limit of 100 kilometres per hour. There is a level railway crossing on Sandy Creek Road about 45 metres from the intersection with New England Highway. Consultation findings detailed in section 4 indicate that there are existing safety concerns within the community regarding the level crossing and intersection with New England Highway. The project area would be accessed via Sandy Creek Road, using the existing access points at 380 and 578 Sandy Creek Road.

The project area is located about 70 metres from Sandy Creek in the north. Sandy Creek is mapped as having biodiversity value by NSW DCCEEW (2026). In addition to Sandy Creek, land located to the east of and north of the project area at Bells Mountain is zoned Environmental Management under the Muswellbrook LEP 2009, contributing to the local natural and environmental character. The project area is also located near to the St Heliers Correctional Centre, a minimum-security institution for males.

Key social and demographic characteristics of these localities are described in sections 5.1.2 to 5.1.3.

5.1.2 McCullys Gap

Overview

McCullys Gap SAL is in the northeast of Muswellbrook Shire LGA and is about seven kilometres northeast of the town of Muswellbrook. Given its low population and proximity to Muswellbrook, there is no identified centre in McCullys Gap. Land uses surrounding the area and across McCullys Gap include agricultural activities, light industrial land uses and residential areas.

Key socio-economic indicators

In 2021, the population of McCullys Gap was 262 people, of which 14 people (5.3 per cent) identified as Aboriginal and/or Torres Strait Islander. McCullys Gap is characterised by a middle aged population with a higher proportion of the population between 35 to 64 (43.5 per cent) compared to Muswellbrook Shire LGA (38 per cent).

As shown in Table 5.1, all dwellings in McCullys Gap were separate houses and the majority of residents owned their own home (either fully or with a mortgage) (73.9 per cent), which was higher than Muswellbrook Shire LGA (61.7 per cent).

Table 5.1 Dwelling characteristics, 2021

Indicator	McCullys Gap SAL	Muswellbrook Shire LGA
Dwelling type		
Total private dwellings	96	6,802
Separate house	100.0%	88.2%
Semi-detached, terrace house, townhouse	0.0%	9.9%
Flat, unit or apartment	0.0%	1.0%
Other dwellings	0.0%	0.5%
Dwelling tenure		
Owned (fully or with a mortgage)	73.9%	61.7%
Rented (total)	12.0%	34.2%
Other tenure type	4.3%	2.7%
Tenure not stated	0.0%	1.5%

Source: (ABS, 2021a)

As shown in Table 5.2, unemployment was lower at 3.2 per cent, compared to Muswellbrook Shire LGA (5.1 per cent). Additionally, labour force participation in McCullys Gap (77.2 per cent), was higher than Muswellbrook Shire LGA (60.1 per cent). The median weekly household income McCullys Gap was \$2,299 which was significantly higher than Muswellbrook Shire LGA (\$1,628).

Table 5.2 Labour force status and median income levels, 2021

Indicator	McCullys Gap SAL	Muswellbrook Shire LGA
Labour force status		
Total labour force	202	12,890
Employed	96.8%	94.9%
Unemployed	3.2%	5.1%
Labour force participation	77.2%	60.1%
Income		
Median total individual income per week	\$840	\$769
Median total household income per week	\$2,299	\$1,628

Source: (ABS, 2021a)

Figure 5.1 shows the top industries of employment in McCullys Gap. In 2021, mining was the top industry of employment, employing 21.1 per cent of the total labour force. This is similar to the 21.5 per cent in Muswellbrook Shire LGA. McCullys Gap is located in close proximity to Dartbrook Coal Mine and Muswellbrook Coal Mine, which may account for the higher proportion of local workforce employed in the mining industry. Other top industries by employment include education and training (14.1 per cent), agriculture, forestry and fishing (8.5 per cent) and public administration and safety (7.7 per cent).

Industry	McCullys Gap SAL	Muswellbrook LGA	NSW
Mining	21.1%	21.5%	1.0%
Education and Training	14.1%	6.3%	8.7%
Agriculture, Forestry and Fishing	8.5%	7.1%	2.0%
Public Administration and Safety	7.7%	3.9%	6.1%
Other Services	7.7%	4.1%	3.4%

Source: (ABS, 2021a)

Figure 5.1 Top industry of employment in McCullys Gap

According to the 2021 Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Advantage/Disadvantage (IRSAD), McCullys Gap scored a decile 7 within NSW, indicating a moderate-to-high level of socio-economic advantage.

A copy of the demographic data in this section can be found in Appendix B.

5.1.3 Muswellbrook

Overview

Muswellbrook SAL is in the northeast of Muswellbrook Shire LGA. The town is supported by a strong coal mining industry with numerous coal mines located within the town of Muswellbrook including Bengalla Mine, Mount Arthur Coal Mine, and Muswellbrook Coal Mine.

Muswellbrook is serviced by a large town centre, with community infrastructure facilities including:

- a hospital and two medical centres
- emergency services, including a police station, State Emergency Services, Fire and Rescue, and ambulance station
- five preschools and early learning centres, three private primary schools, two public primary schools, one public high school, and a Technical and Further Education (TAFE) NSW
- a library
- an art gallery
- recreational facilities including various parks, a showground, pump track and BMX track, aquatic centre, and sport courts
- St Heliers Correctional Centre
- a shopping centre.

Businesses and services also include a supermarket, large format retailers, multiple motels, a caravan park, two post offices, and multiple restaurants and other shops.

The New England Highway and Denman Road run through the centre of Muswellbrook, converging near Muswellbrook train station and provides links to surrounding rural localities. Two train lines pass through Muswellbrook station. The intercity trains network connects to Scone station, Dungog station and stations in Newcastle. Regional train network which passes through Muswellbrook connecting to Armidale station and Sydney via stations in Tamworth, Newcastle and Gosford. There is a public bus service connecting Muswellbrook to Newcastle, numerous school bus services connecting nearby towns and rural areas to Muswellbrook, as well as loop services which traverse through town of Muswellbrook.

Key socio-economic indicators

In 2021, the population of Muswellbrook was 12,272, of which 1,605 people (13.1 per cent) identified as Aboriginal and/or Torres Strait Islander. Muswellbrook is characterised by a younger population with a higher proportion of people under the age of 18 (26.1 per cent) compared to NSW (21.7 per cent). Muswellbrook also has a lower proportion of people over the age of 65 (14.0 per cent) compared to NSW (17.6 per cent). This may indicate a higher number of young families with children under 18.

As shown in Table 5.3, the most common type of dwelling in Muswellbrook were separate houses (87.1 per cent) and the majority of people in Muswellbrook owned their own home (either fully or with a mortgage) (59.2 per cent). Muswellbrook also had a higher proportion of semi-detached, terrace house or townhouses (11.4 per cent) compared to the rest of the LGA (9.9 per cent).

Table 5.3 Dwelling characteristics, 2021

Indicator	Muswellbrook SAL	Muswellbrook Shire LGA
Dwelling type		
Total private dwellings	5,158	6,802
Separate house	87.1%	88.2%
Semi-detached, terrace house, townhouse	11.4%	9.9%
Flat, unit or apartment	0.6%	1.0%
Other dwellings	0.4%	0.5%
Dwelling tenure		
Owned (fully or with a mortgage)	59.2%	61.7%
Rented (total)	38.0%	34.2%
Other tenure type	1.5%	2.7%
Tenure not stated	1.3%	1.5%

Source: (ABS, 2021a)

In Muswellbrook, there were higher rates of unemployment (6.0 per cent) in 2021 compared to Muswellbrook Shire LGA (5.1 per cent), as well as lower rates of labour force participation (58.8 per cent) compared to Muswellbrook Shire LGA (60.1 per cent).

Table 5.4 Labour force status and median income levels, 2021

Indicator	Muswellbrook SAL	Muswellbrook Shire LGA
Labour force status		
Total labour force	5,638	12,890
Employed	94.0%	94.9%
Unemployed	6.0%	5.1%
Labour force participation	58.8%	60.1%
Income		
Median total individual income per week	\$759	\$769
Median total household income per week	\$1,603	\$1,628

Source: (ABS, 2021a)

Muswellbrook's largest employer in 2021 was mining (22.3 per cent). Other top industries by employment include health care and social assistance (ten per cent), and retail trade (8.8 per cent). Muswellbrook has three coal operations of Bengalla Mine, Mount Arthur Coal Mine, and Muswellbrook Coal Mine within the town, which may account for a higher proportion of local workforce employed in the mining industry.

Industry	Muswellbrook SAL	Muswellbrook LGA	NSW
Mining	22.3%	21.5%	1.0%
Health Care and Social Assistance	10.0%	9.0%	14.4%
Retail Trade	8.8%	7.9%	9.0%
Accommodation and Food Services	7.7%	6.8%	6.2%
Education and Training	6.3%	6.3%	8.7%
Construction	5.9%	5.7%	8.6%
Administrative and Support Services	5.4%	5.0%	3.2%

Source: (ABS, 2021a)

Figure 5.2 Top industry of employment in Muswellbrook, 2021

According to the 2021 SEIFA IRSAD, Muswellbrook scored a decile one within NSW, indicating a high level of socio-economic disadvantage.

A copy of the demographic data in this section can be found in Appendix B.

5.1.4 Aboriginal culture and communities

McCullys Gap and the project area is situated within the traditional Country of the Wanaruah (Wanaruah) People. The project area is also located in the boundaries of the Wanaruah Local Aboriginal Land Corporation. There is evidence of occupation of the Upper Hunter region by Aboriginal peoples, including Wanaruah, for thousands of years prior to European arrival in the region. Several sites of cultural, spiritual and archaeological importance to the Wanaruah people are located in the Upper Hunter region (Wanaruah Local Aboriginal Land Council, 2020).

Aboriginal cultural heritage surveys identified one area of Potential Archaeological Deposit (PAD) outside the project area and two previously recorded Aboriginal sites within the project area, comprising an isolated artefact and a previously recorded site with no surface objects present (refer to Technical Report 4 (ACHAR)).

More information regarding the cultural and archaeological context of the local area can be found in Technical Report 4 (ACHAR) and Technical Report 5 (Historic Heritage Impact Assessment).

Demographic data about Aboriginal and/or Torres Strait Islander people in the local and regional study area is presented in sections 5.1.2, 5.1.3 and 5.2.2.

5.2 Regional study area

5.2.1 Overview

As described in section 3.3, the regional study area in which the project area is located consists of the Muswellbrook Shire LGA.

The Muswellbrook Shire LGA is situated in the Upper Hunter region of NSW and covers an area of almost 3,500 square kilometres. Located about three hours northwest of Sydney, the Shire's largest town of Muswellbrook is traversed by the New England Highway. Muswellbrook is serviced by road, and rail through passenger and freight rail. The New England Highway provides links to Newcastle in the southeast and north to Yarraman, QLD via Toowoomba, Armidale and Tamworth. As the regional centre, Muswellbrook offers a range of retail and community services and facilities, including health and emergency services, education, culture, and recreation.

Muswellbrook Shire LGA is bordered by Singleton, Mid-Western Regional, Upper Hunter LGA's. Nearby natural and recreation areas include Wollemi National Park to the south, and Goulburn River National Park to the west.

The region is characterised by predominately flat agricultural land with smaller urban centres, including Denman. The remainder of the population reside in smaller surrounding towns, including Baerami, Martindale, Muscle Creek, Sandy Hollow, and Widden.

Key demographic characteristics of the regional study area are described in the following sections.

5.2.2 Demographic profile

Population

The population of Muswellbrook Shire LGA was 16,357 people in 2021. The population experienced a 1.7 per cent (271 people) increase between 2016 and 2021. The proportion of the population who identified as Aboriginal and/or Torres Strait Islander in Muswellbrook Shire LGA (1,908 people or 11.7 per cent) was higher compared to NSW (3.4 per cent).

Table 5.5 *Population Muswellbrook Shire LGA, 2021*

Population	Muswellbrook Shire LGA	NSW
2021 Population (no.)	16,357	8,072,163
2016 Population (no.)	16,086	7,480,228
% change (2016-2021)	1.7%	7.9%
Aboriginal and/or Torres Strait Islander population (no.)	1,908	278,043
Aboriginal and/or Torres Strait Islander population (%)	11.7%	3.4%

Source: (ABS, 2021a)

Population projections

According to NSW Common Planning Assumptions, the population of Muswellbrook Shire LGA is expected to steadily increase, reaching a population of 17,696 persons by 2041, representing a 7.5 per cent increase between 2021 and 2041 (DPHI, 2024b).

Table 5.6 *Population projections, Muswellbrook Shire LGA 2021-2041 (DPHI, 2024b).*

	2021	2026	2031	2036	2041
Muswellbrook Shire LGA					
Estimated Resident Population	16,469	16,763	17,083	17,392	17,696
% change	-	1.8%	1.9%	1.8%	1.7%
Average annual growth rate	-	0.4%	0.4%	0.4%	0.4%
NSW					
Population	8,097,062	8,680,294	9,161,041	9,622,204	
% change	-	7.2%	5.5%	5.0%	
Average annual growth rate	-	1.4%	1.1%	1.0%	

Source: (DPHI, 2024b)

Age profile

The age structure of Muswellbrook Shire LGA is outlined below:

- The median age in Muswellbrook Shire LGA was 37 years, which was younger than the median age in NSW (39 years).
- Muswellbrook Shire LGA has a higher proportion of the population under 18 years of age (25.3 per cent) compared to NSW (21.7 per cent). The higher proportion of the population under 18 years of age reflects the high proportion of young families in the area, as well as the large proportion of working age groups.
- Muswellbrook Shire LGA has a lower proportion of the population over 65 years of age (15.0 per cent) compared to NSW (17.6 per cent).

Families and households

Muswellbrook Shire LGA had a higher proportion of couple families without children (38.9 per cent), and a lower proportion of couple families with children (40.6 per cent) compared to NSW (37.9 per cent and 44.7 per cent respectively). In addition, there was a lower proportion of family households in Muswellbrook Shire LGA (68.8 per cent) compared to NSW (71.2 per cent), and more lone person households (28.5 per cent compared to 25.0 per cent in NSW). Overall, the family and household characteristics of the regional study area reflects the age profile. Detailed demographic data on families and households is presented in Appendix B.

Cultural diversity

Muswellbrook Shire LGA had lower levels of cultural and linguistic diversity compared to NSW. Overall, Muswellbrook Shire LGA is characterised by:

- a higher proportion of people born in Australia (84.8 per cent) compared to NSW (65.4 per cent)
- a lower proportion of residents who were born in non-main English-speaking countries (4.6 per cent) compared to NSW (23.0 per cent)
- a higher proportion of households that spoke only English at home (88.0 per cent) compared to NSW (67.6 per cent).

The most common country of birth of residents in Muswellbrook Shire LGA excluding Australia include New Zealand (1.4 per cent), England (1.2 per cent), and Philippines (0.8 per cent).

The most common languages in Muswellbrook Shire LGA spoken at home other than English include Punjabi, Tagalog and Filipino (0.3 per cent each).

Education profile

As shown in Table 5.7, the proportion of the population aged 15 years and over that had completed Year 11 or 12 (or equivalent) in 2021 was lower in Muswellbrook Shire LGA (41.5 per cent) compared to NSW (63.8 per cent), with a higher proportion of the population completing Year 10 as their highest level of education (34.6 per cent) compared to NSW (19.7 per cent). This could indicate a higher proportion of children leaving school in Year 10 to pursue trade qualifications and apprenticeships as shown through the higher proportion of people with certificate qualifications in Muswellbrook (64.4 per cent) compared to NSW (32.3 per cent) (refer to Table 5.8).

There was a low proportion of people in Muswellbrook Shire LGA who reported that they did not go to school and a relatively high proportion of people who did not state their highest level of secondary education.

Table 5.7 Highest level of secondary school education achieved, 2021

Secondary school education	Muswellbrook Shire LGA	NSW
Completion of Year 11 or 12 (or equivalent)	41.5%	63.8%
Year 10 or equivalent	34.6%	19.7%
Year 9 or below	8.6%	8.4%
Did not go to school	0.3%	1.2%
Not stated	9.7%	6.9%

Source: (ABS, 2021a)

Overall, there were higher levels of certificate and trade qualifications and lower levels of university education in Muswellbrook Shire LGA when compared to NSW, as shown in Table 5.8. This is consistent with secondary school education achievement rates, which showed a high proportion of the population completed Year 10 as their highest level of education in Muswellbrook compared to NSW.

There is one tertiary education facility in Muswellbrook, TAFE NSW Muswellbrook, which offers over 200 certificate and diploma level vocational courses to provide training that fills gaps in the local workforce. Numerous courses exist which teach skills applicable to the project including courses for electrical engineering, and engineering, as well as short courses for energy storage systems, renewable energy and sustainability, and battery storage system installation (TAFE NSW, 2025).

Table 5.8 Highest level of post-secondary school education achieved, 2021

Post-secondary school education	Muswellbrook Shire LGA	NSW
Postgraduate degree	3.0%	13.1%
Graduate diploma and Graduate certificate	2.2%	3.7%
Bachelor's degree	14.3%	32.9%
Advance diploma and Diploma level	15.1%	16.7%
Certificate level total	64.4%	32.3%

Source: (ABS, 2021a)

5.2.3 Economy and employment

Economy

The Gross Regional Product (GRP) of Muswellbrook Shire LGA was estimated at \$14.7 billion in 2024, which represents 8.4 per cent of the output generated in the Hunter region, or 0.9 per cent of the total NSW Gross State Product. Mining was the largest industry by economic output in Muswellbrook Shire LGA, generating \$10.4 billion or 71.0 per cent of the LGA's total output in 2024. Electricity, gas, water and waste services was the second largest at \$1.6 billion, followed by construction at \$512.5 million (REMPLAN, 2025c).

Within the Muswellbrook Shire LGA there are several coal mines; Bengalla Mine, Dartbrook Coal Mine, Drayton Mine, Mangoola Coal, Maxwell Underground Mine, Mt Arthur Coal Mine, and Muswellbrook Coal Mine.

As shown in Figure 5.3, Muswellbrook Shire LGA has experienced economic growth between 2008-24 with real GRP having grown 108.3 per cent over that time. Economic growth has typically occurred in spikes, which occurred in 2011, 2017 and 2022. A sharp decline followed the 2011 spike, with GRP typically stable or slowly rising each year during the 2010s.



Source: (REMPLAN, 2025c)

Figure 5.3 GRP change Muswellbrook Shire LGA, 2008-2024

Industry of employment

As shown in Figure 5.4, the top industries of employment for people who reside in Muswellbrook Shire LGA in 2021 were mining (21.5 per cent), health care and social assistance (9.0 per cent), and retail trade (7.9 per cent). It was noted that mining was the largest employment sector in 2021 in terms of the number of people employed, supporting an estimated 3,751 jobs or 33.1 per cent of jobs in the Muswellbrook Shire LGA (including both of the LGA and non-resident workers) (REMPLAN, 2025a).

Industry	Muswellbrook LGA NSW	
Mining	21.5%	1.0%
Health Care and Social Assistance	9.0%	14.4%
Retail Trade	7.9%	9.0%
Agriculture, Forestry and Fishing	7.1%	2.0%
Accommodation and Food Services	6.8%	6.2%
Education and Training	6.3%	8.7%
Construction	5.7%	8.6%

Source: (ABS, 2021a)

Figure 5.4 Top industry of employment Muswellbrook Shire LGA, 2021

Resident workforce

It is estimated that of the 11,341 people who work in Muswellbrook Shire LGA, 55.6 per cent also live in Muswellbrook Shire LGA, while 44.4 per cent travel to Muswellbrook Shire LGA for work, but live in other areas including Upper Hunter Shire (13.7 per cent), Singleton (13.0 per cent), Maitland (5.1 per cent), as well as Cessnock, Lake Macquarie, and Newcastle (REMPAN, 2021). A smaller proportion of employed people who reside in Muswellbrook Shire LGA (17.5 per cent) travel outside of Muswellbrook Shire LGA of work in surrounding areas including Singleton (8.5 per cent), and Upper Hunter Shire (6.4 per cent) (REMPAN, 2021).

Table 5.9 Resident and non-resident workers, Muswellbrook Shire LGA 2021

Local workers' place of usual residence	(%) proportion of workers	Number of workers
Live and work in the area	55.6%	6,301
Work in the area, but live outside	44.4%	5,040
Total	100.0%	11,341
Resident workers' place of usual residence	(%) proportion of workers	Number of workers
Live and work in the area	82.5%	6,301
Work in the area, but live outside	17.5%	1,338
Total	100.0%	7,639

Source: (REMPAN, 2021)

Economic growth

The Community Strategic Plan (Muswellbrook Shire Council, 2025a) focuses on economic growth as one of the key aspirations and priorities of the community. The priority focuses on supporting the diversification of the local economy, reuse of former mining and energy generation land, reskilling for future workforce needs, government and stakeholder collaboration for investment and long-term employment, and tourism growth through diversifying hospitality and increasing nightlife offerings. Although the plan does not list specific projects, the Community Strategic Plan highlights the shift towards renewable energy projects and workforce retraining to accommodate the movement away from mining.

Labour force participation

As shown in Table 5.10, Muswellbrook Shire LGA had a higher level of labour participation (60.1 per cent) compared to NSW (58.7 per cent), however had a similar unemployment rate compared to NSW (5.1 per cent compared to 4.9 per cent). This could be attributed to the age demographic in Muswellbrook Shire LGA with a large proportion of working age groups. The unemployment rate for Aboriginal and/or Torres Strait Islander people in Muswellbrook Shire LGA was more than double that for all persons in the LGA (10.7 per cent compared to 5.1 per cent) despite labour force participation of Aboriginal and/or Torres Strait Islander people compared to all persons in the LGA was similar (60.3 per cent compared to 60.1 per cent). The unemployment rate of Aboriginal and/or Torres Strait Islanders within the Muswellbrook Shire LGA was higher than NSW (10.7 per cent compared to 9.8 per cent), however the labour force participation of Aboriginal and/or Torres Strait Islanders in Muswellbrook Shire LGA was higher than that of NSW (60.3 per cent compared to 56.5 per cent).

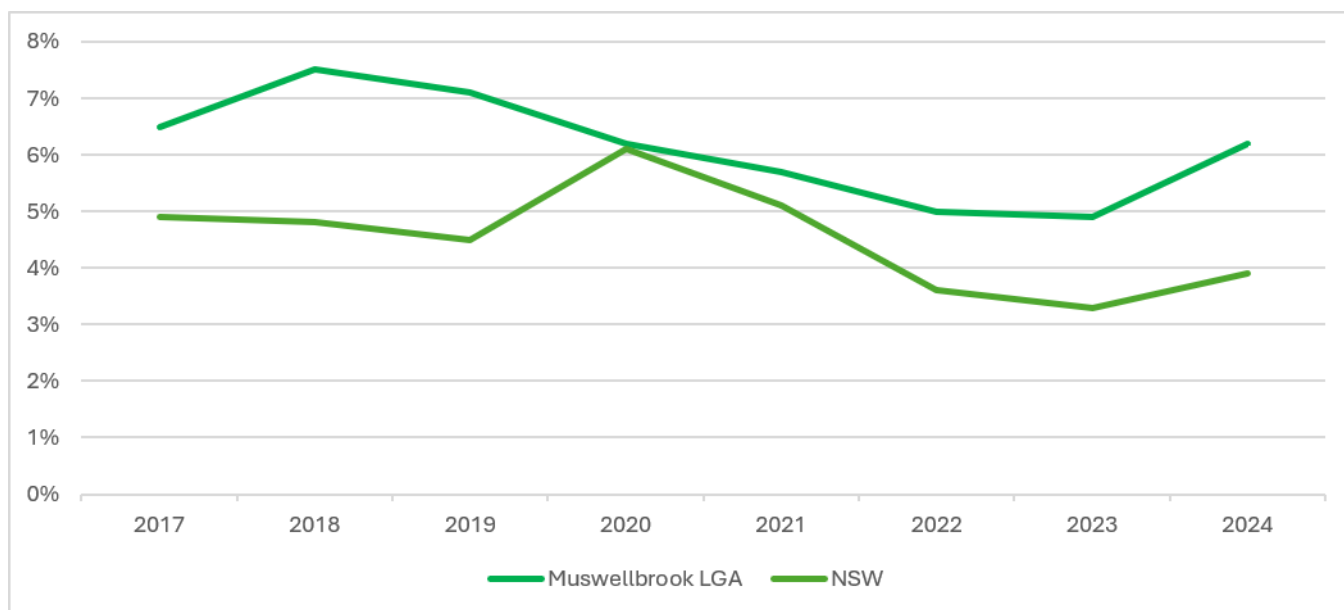
Table 5.10 Labour force, 2021

Labour force breakdown	Muswellbrook Shire LGA		NSW	
	All persons	Aboriginal and/or Torres Strait Islanders	All persons	Aboriginal and/or Torres Strait Islanders
Employed	94.9%	89.2%	95.1%	90.2%
Unemployed	5.1%	10.7%	4.9%	9.8%
Labour force participation	60.1%	60.3%	58.7%	56.5%

Source: (ABS, 2021a)

Unemployment

Between 2017 to 2024, Muswellbrook Shire LGA had higher levels of unemployment compared to NSW. As shown in Figure 5.5, unemployment in Muswellbrook Shire LGA was at its highest at 7.5 per cent in 2017. Since then, it has decreased, however the unemployment rate began to rise again, reaching 6.2 per cent in 2024 (REMPLAN, 2024b).



Source: (REMPLAN, 2025a)

Figure 5.5 Unemployment rate, 2017–2024

Income

As shown in Table 5.11, Muswellbrook Shire LGA has both a lower median total individual income (\$769) and median total household income (\$1,628) compared to NSW (\$813 and \$1,829 respectively). The median total individual income for Aboriginal and/or Torres Strait Islander people in Muswellbrook Shire LGA was lower (\$598) compared to all persons in the LGA (\$769). However, the median total household income for Aboriginal and/or Torres Strait Islander people in the LGA was similar to (\$1,636 compared to \$1,628 for all persons).

Table 5.11 Median income level, 2021

Income	Muswellbrook Shire LGA		NSW	
	All persons	Aboriginal and/or Torres Strait Islander	All persons	Aboriginal and/or Torres Strait Islander
Median total individual income per week	\$769	\$598	\$813	\$600
Median total household income per week	\$1,628	\$1,636	\$1,829	\$1,558

Source: (ABS, 2021a)

5.2.4 Housing and accommodation

At the time of the 2021 Census, there were 6,802 private dwellings in Muswellbrook Shire LGA, of which 88.2 per cent were occupied. The majority of dwellings were separate houses (88.2 per cent) with 61.7 per cent either fully owned or with a mortgage (ABS, 2021a). The proportion of rental properties in Muswellbrook Shire LGA was higher (34.2 per cent) than NSW (32.6 per cent).

The Muswellbrook Shire LGA rental market is tight, with vacancy rates for postcode 2333 (Muswellbrook and surrounds) consistently below 3 per cent since early 2022, and declining rental affordability (SGS Economics and Planning, 2024; SQM Research, 2025). The Muswellbrook Shire Local Housing Strategy (Muswellbrook Shire Council, 2024a) identifies housing availability as a key community concern. In 2021, more than 30 per cent of renting households had rent repayments exceeding 30 per cent of household income, indicating a level of rental

stress (ABS, 2021b). Housing prices have also been increasing, and in 2021, 9 per cent of households had mortgage repayments more than 30 per cent of household income (Muswellbrook Shire Council, 2024a).

Short term accommodation

A review of short-term accommodation facilities was conducted by the applicant in May and June 2026, including consultation to confirm availability. The review identified 22 short-term accommodation providers and approximately 652 short-term accommodation rooms within a 45-minute drive of the project area. The outcome of this review is provided in Table 5.12.

Table 5.12 *Estimate of short term accommodation supply within 45-minute drive of the project area*

Locality	LGA	Accommodation type	Provider	Rooms
Muswellbrook	Muswellbrook	Hotel	The Remington Muswellbrook	~54
Muswellbrook	Muswellbrook	Serviced apartments	Quest Muswellbrook	~62
Muswellbrook	Muswellbrook	Motor Inn & Serviced apartments	Baybrook Motor Inn & Apartments	~16
Muswellbrook	Muswellbrook	Motor Inn	Centabrook Motor Inn	~16
Muswellbrook	Muswellbrook	Motor Inn	Muswellbrook Motor Inn	~10
Muswellbrook	Muswellbrook	Motel	Wayfarer Motel	~25
Muswellbrook	Muswellbrook	Motel	Red Cedar Motel	~27
Muswellbrook	Muswellbrook	Motel	Noah's Mid City Motor Inn	~33
Muswellbrook	Muswellbrook	Motel	John Hunter Motel	~20
Muswellbrook	Muswellbrook	Motel	The Hermitage Motel	~31
Muswellbrook	Muswellbrook	Cabins / Holiday Park	Muswellbrook Riverside Cabin & Van Park	~38
Muswellbrook	Muswellbrook	Serviced dwellings	Workstays – Muswellbrook	~10 dwellings
Muswellbrook	Muswellbrook	Pub accommodation	Muswellbrook Hotel	~15
Aberdeen	Upper Hunter	Motel	Aberdeen Motel	~24
Aberdeen	Upper Hunter	Hotel	Segenhoe Inn	~15
Denman	Muswellbrook	Motel	Denman Motor Inn	~34
Denman	Muswellbrook	Motel	The Grapevine Motel	~28
Singleton	Singleton	Hotel	Charbonnier Hotel	~72
Singleton	Singleton	Serviced apartments	Quest Singleton	~35
Singleton	Singleton	Motor Inn	Mid City Motor Inn	~32
Singleton	Singleton	Motor Inn	Francis Phillip Motor Inn & The Lodge	~40
Singleton	Singleton	Pub accommodation	Royal Hotel Singleton	~15

Of the 652 identified rooms, approximately 64 per cent (419 rooms) are located in Muswellbrook LGA. Of this, 357 (55 per cent) are located in Muswellbrook suburb and 62 (10 per cent) are in Denman. Approximately 39 rooms (5 per cent) are in Aberdeen in the Upper Hunter LGA, and approximately 194 (30 per cent) rooms are in Singleton in the Singleton LGA. The accommodation offering within 45-minutes of the project area consists of motels (222 rooms), hotels (141 rooms), motor inn (114 rooms), holiday parks (38 cabins) and pub accommodation (30 rooms), as well as serviced apartments and dwellings (107 apartments or dwellings) which may be suitable for multiple individuals.

Workforce accommodation

Muswellbrook Shire LGA has no dedicated workforce accommodation camps available for temporary project workforces. However, project workers can access corporate accommodation providers offering individual dwellings for project workforces, as well as local hotels and campgrounds which advertise to project workforces..

Muswellbrook Shire Council has developed a *Draft Temporary Workforce Accommodation Policy* (Muswellbrook Shire Council, 2025b). The Policy outlines Council's expectations for any proposed Temporary Workforce Accommodation (TWA) within Muswellbrook Shire LGA. These commitments include:

- develop TWA within or near existing urban areas to reduce long-term costs on Council associated with constructing infrastructure in non-serviced rural areas
- enable opportunities for expansion of urban areas into the TWA after decommissioning
- integrate workers into the community to remove the risk of isolation
- improve social health and wellbeing of workers, provide greater benefit for the local economy and increase the likelihood of workers becoming permanent residents
- mitigate the risk of developing poorly design infrastructure and poorly managed on-site systems.

Council also highlighted additional risks including that self-contained TWAs provide limited benefits to the local economy.

5.2.5 Social infrastructure and services

This section presents an overview of social infrastructure and services available in Muswellbrook Shire LGA.

Education facilities

Educational facilities across the Muswellbrook Shire LGA include the following:

- five government primary schools (Denman Public School, Martindale Public School, Muswellbrook Public School, Muswellbrook South Public School, and Sandy Hollow Public School)
- four non-government primary schools (Pacific Brook Christian School, Richard Gill School, St James Primary School, and St Joseph's Primary School)
- one government high school (Muswellbrook High School)
- one non-government high school (Dunmore Lang Christian School)
- one tertiary education facilities, including TAFE NSW Muswellbrook.

Consultation to inform the SIA identified that there were some challenges in staffing for childcare services and high schools. Some healthcare services were also noted as under constraints, particularly for children and expectant parents.

Health infrastructure

Muswellbrook Shire LGA is serviced by the Hunter New England Local Health District. The following two hospital facilities are located in the LGA:

- Muswellbrook Hospital is open weekday 10am to 8pm, and an emergency department open 24/7
- Denman Multi Purpose Health Service and Hospital.

There are also a range of medical centres and community health centres located in Muswellbrook and Denman.

Emergency services

Emergency services within the Muswellbrook Shire LGA include:

- Police stations in Muswellbrook and Denman
- two fire and rescue stations located in Muswellbrook and Denman
- one ambulance station, located in Muswellbrook
- SES units located in Muswellbrook and Denman.

During SIA consultation, stakeholders identified concerns regarding existing under-resourcing and heavy reliance on volunteers for emergency services.

Community and recreational facilities

Muswellbrook Shire LGA supports many historical community features and recreational facilities, with two National Parks and many parks and reserves. As a regional centre the LGA is well serviced by a range of services and facilities, with key community infrastructure including two libraries, two swimming pools, sporting fields and parks. Other amenities and public infrastructure include an indoor sporting complex, two skate parks, two BMX tracks, and tennis courts.

5.2.6 Community cohesion, values and wellbeing

Community values, opportunities, and challenges

The Community Strategic Plan identifies a vision for the LGA to 'lead Australia's renewable energy future, attracting innovation, investment and opportunity to our region for years to come' (Muswellbrook Shire Council, 2025a). According to the Community Strategic Plan, residents of the LGA value the location, sense of community, and employment opportunities in the LGA.

The visions and intended outcomes identified in the Community Strategic Plan focus on increasing access to services and facilities both local and regional, increasing employment, business and training opportunities, and protecting and enhancing the natural environment.

The Community Strategic Plan identifies the shift from coal mining to renewable energy, alongside agriculture and tourism, emphasising values to retrain workers and attract new industries to create job opportunities to ensure long-term sustainability.

Muswellbrook Shire LGA is reliant economically on its coal mining industry as the larger output generating sector at \$10.4 billion in 2024 (REMPLAN, 2025b). With the shift towards renewable energies, the region faces a challenge to diversify its economy, and provide new employment opportunities for the community (Muswellbrook Shire Council, 2020).

The Muswellbrook LSPS (Muswellbrook Shire Council, 2020) recognises the importance of protecting and maintaining the natural landscapes of areas including in McCullys Gap. It is considered critical to ensure the ongoing protection of the environment. The LSPS also recognises existing and previous disturbances to riparian corridors, highlighting how landcare groups were formed to manage weeds and restore native vegetation in some areas.

The limited population growth in the Muswellbrook Shire LGA is key challenge in managing the growth of economic opportunities, retraining existing workers, and training young people for the changing industries in the region.

The TAFE NSW Muswellbrook already offers numerous courses which address this change. Other schools such as the Richard Gill school in Muswellbrook are also adapting their curriculums to focus on science, technology, engineering and mathematics (Muswellbrook Shire Council, 2020).

Crime and safety

Muswellbrook Shire LGA recorded a higher rate of offences per capita than the NSW average in 2024–2025, with driving offences being the most common category (NSW Bureau of Crime Statistics and Research, 2026).

Health

In 2021, the Census collected information for the first time on diagnosed long-term health conditions. About 54.2 per cent of all people in Muswellbrook Shire LGA reported have no long-term health conditions, which was lower than that reported in NSW (61.0 per cent).

According to the ABS 2021 Census, of all the people in Muswellbrook Shire LGA who identified as having a long-term health condition asthma was the most commonly reported health condition (10.8 per cent) followed by mental health condition (10.7 per cent) and arthritis (9.7 per cent). Among Aboriginal and Torres Strait Islander people in Muswellbrook Shire LGA, the most common health condition is asthma (17.2 per cent), followed by mental health condition (15.4 per cent), and arthritis (7.0 per cent).

Consultation undertaken for other nearby projects (refer to Table 3.4) identified existing community health concerns regarding dust and pollution impacts due to surrounding mining activities. This was reinforced by concern in the community about dust and pollution impacts from construction projects.

Community vulnerability and disadvantage

According to the 2021 SEIFA IRSAD, Muswellbrook Shire LGA scored a 2 within the state and within Australia, indicating high levels of disadvantage.

5.2.7 Access and connectivity

The region is serviced by two major arterial roads, the New England Highway and Golden Highway, which link the area to Newcastle and South East Queensland. The Golden Highway and Denman Road links the regional towns of the Muswellbrook Shire LGA to the urban centre of Muswellbrook.

The Muswellbrook Shire LSPS (Muswellbrook Shire Council, 2020) identifies transport upgrades to improve the liveability of the area. These include improving active transport corridors between residential areas and recreational and community facilities, working with Transport for NSW to increase the number of heavy vehicle rest areas along the New England Highway and Golden Highway, upgrade local planning instruments to reflect the requirements of the NSW Heavy Vehicle Access Policy Framework, and support the railway station and major road corridors with active and public transport infrastructure.

5.3 Key findings

The following summary draws together the key baseline findings from sections 5.1 to 5.2 that are most relevant to the assessment of potential social impacts in sections 6 and 7.

5.3.1 Local context and land use

McCullys Gap is a small rural locality (population 262) characterised by rural residential and agricultural land, with some energy infrastructure land uses due to an existing transmission line and substation. The project area is located at the southwestern edge of the McCullys Gap SAL, bordering Muswellbrook SAL. Community infrastructure in McCullys Gap is limited to the McCullys Gap Community Hall and the McCullys Gap Rural Fire Service brigade station. The nearest shops, health, education and other community services and facilities are located in Muswellbrook, about six kilometres to the southwest. The rural character of the locality is valued by residents, as identified through consultation (section 4).

5.3.2 Economy, employment and workforce

The Muswellbrook Shire LGA economy is heavily reliant on coal mining, which is the largest industry by both economic output and employment. The LGA has a younger population than the NSW average, with higher than typical levels of vocational training and trade qualifications. Labour force participation is slightly higher than the NSW average, although unemployment has also tracked slightly higher. These characteristics indicate a workforce with skills that may be transferable to construction and energy infrastructure projects, although the construction sector is a smaller employer locally than in NSW overall.

Aboriginal and Torres Strait Islander residents of the Muswellbrook Shire LGA experience higher unemployment and lower individual incomes than the broader LGA population. The LGA is rated as having high levels of socio-economic disadvantage (SEIFA IRSAD decile 2 within NSW).

Muswellbrook Shire Council has identified economic diversification and workforce retraining as strategic priorities, including through the LSPS.

5.3.3 Housing and accommodation

The Muswellbrook Shire LGA rental market is tight, with consistently low vacancy rates since 2021 and declining rental affordability. More than 30 per cent of renting households are in rental stress.

There are more than 1,000 short-term accommodation rooms located within a one-hour drive of the project area. However, consultation identified that the mining and rail industries are regular users of short-term accommodation, and facilities frequently experience high occupancy. The LGA does not currently have any large-scale dedicated workforce accommodation. Council's draft TWA policy expresses a preference for accommodation within or near existing urban areas and a desire to transition workers into permanent residents.

These housing and accommodation conditions are relevant to the assessment of workforce accommodation impacts in section 6.5 and cumulative impacts in section 9.

5.3.4 Community values and cohesion

The Muswellbrook Shire LGA has a strong community identity shaped by its association with the coal mining industry. Consultation identified that some community members are concerned about the pace of energy transition in the region and its potential implications for mining employment. There is also an expectation that new energy projects should contribute to social investment in a manner comparable to the mining industry.

McCullys Gap residents value the rural amenity of the locality, and consultation identified sensitivity to changes in visual character and the cumulative effects of multiple energy projects in the area.

6. Construction impacts

This section identifies the potential social impacts arising from the construction of the project on communities within the local and regional study areas (local and regional area). A description of potential impacts by social impact theme is first presented, with a summary of construction impacts, social impact responses and residual impacts presented in section 6.9.

6.1 Property, landholders and land use

The project area is located on a property currently used for livestock grazing, with Technical Report 6 (Land use and agriculture) finding that stocking rates are below the property's estimated carrying capacity.

During construction, land use within the project area would temporarily change from the existing uses to a construction site. The applicant has entered into, or proposes to enter into, agreements with relevant parties to support the development, operation and delivery of the project. Given this, there would be no residual impacts to private agricultural landholders arising from the change in land use.

Construction would result in a temporary disturbance of up to 20.02 hectares of land of which 14.9 ha is currently used for livestock grazing. This would result in a minor reduction to the amount of land available at private properties for the duration of construction.

Regional impacts on the agricultural industry and output are expected to be negligible given the low productivity of the subject property and the small area of agricultural land affected. The project Construction Environmental Management Plan (CEMP) would include measures to manage biosecurity risk during construction. Given the limited scale of vehicle movements and implementation of these measures, the risk to agricultural land is expected to be low.

Further information on potential land use impacts is provided in Technical Report 6 (Land use and agriculture).

6.2 Aboriginal cultural values

Technical Report 4 (ACHAR) identified three Aboriginal heritage sites within or adjacent to the project area. Project design refinements have avoided impacts to one area of PAD, while potential impacts to two Aboriginal sites will be managed through salvage in accordance with an Aboriginal Cultural Heritage Management Plan (ACHMP), developed in consultation with Registered Aboriginal Parties (RAPs).

While RAPs did not provide specific comments on the heritage, social or cultural values of the identified sites during the ACHAR, further consultation will be undertaken to better understand their potential significance and the implications of the proposed works. Based on existing disturbance and the condition of recorded artefacts, the scientific value of the two impacted sites was assessed as low.

Construction activities have the potential to uncover previously unidentified Aboriginal artefacts, and disturbance or removal of such items could affect tangible or intangible Aboriginal cultural heritage values. These risks will be managed through implementation of the ACHMP, including unexpected finds procedures and ongoing engagement with RAPs throughout construction.

6.3 Changes to local amenity

6.3.1 Noise and vibration

Technical Report 2 (Noise and vibration) assessed the potential for construction noise and vibration impacts on nearby sensitive receivers. The closest residential property is located about 50 metres north of the access track to the Muswellbrook 330 kV substation, and the St Heliers Correctional Centre (also considered a residential receiver) is situated about 260 metres southwest of the project area.

The assessment found that

- Up to three residential receivers may experience short-term high noise levels during temporary road widening works, particularly near Sandy Creek Road and the New England Highway intersection.

- Up to three sensitive receivers may experience discomfort due to vibration from temporary road works, however vibration is not expected to damage buildings or infrastructure in the surrounding community.
- Increased road traffic along New England Highway and Sandy Creek Road is expected to result in a negligible increase in noise.

These impacts would be temporary and limited to specific construction phases over the 18-month construction period. Construction noise and vibration would be managed in accordance with the Noise and Vibration Management Plan in the CEMP, which would minimise the potential for impacts on the amenity of nearby receivers.

6.3.2 Visual amenity

Technical Report 3 (Landscape and visual) found that construction activities would be visible from nearby residential properties and to motorists on Sandy Creek Road and Wells Gully Road. Residents from nearby properties would experience a temporary reduction in visual amenity during the construction period. The character of the local area is rural, dominated by agricultural land uses and some urban and infrastructure land uses (refer to section 5.1.2).

6.3.3 Dust

Chapter 18 (Air quality) of the EIS assessed the potential for dust impacts during construction. The assessment found that, due to the limited number of nearby receivers, the surrounding area generally has low sensitivity to human health impacts and dust soiling. With the implementation of standard dust management and mitigation measures, the risk of adverse dust impacts during construction is expected to be low.

Some nearby residents may be sensitive to changes in dust levels during construction. This would be managed through the dust control measures in the CEMP and the community and stakeholder engagement plan

6.3.4 Health and wellbeing

The potential for health and wellbeing impacts during construction have been considered in the context of the project's scale (peak workforce of about 150 workers over an 18-month construction period) and the distance of construction activities from sensitive receivers.

Construction activities have the potential to generate noise, dust and increased traffic, which are assessed in sections 6.3.1, 6.3.3 and 6.8 respectively. These amenity changes may contribute to short-term stress or annoyance for a small number of nearby residents. Given the temporary nature of construction, the implementation of standard management measures (including the CEMP and community and stakeholder engagement plan), and the findings of the relevant technical assessments, the risk of material health and wellbeing impacts during construction is assessed as low.

6.4 Economy and employment

6.4.1 Economic impact assessment

This section outlines the inputs and results of the economic impact assessment for NSW based on REMPLAN's Input–Output Model (2025). The assessment captures the direct, supply-chain and consumption effects associated with construction expenditure.

NSW economic impact assessment

Over the 18-month construction period, comprising one year in FY27 and six months in FY28, the project is expected to generate a total economic output of \$157.77 million across NSW. This impact is driven by construction activity sourced and procured within the State and reflects both the direct expenditure associated with construction works and the broader flow-on effects throughout the economy.

In FY27, which represents the peak construction year, the project is estimated to generate a total economic output of \$105.18 million. This includes \$45.86 million in direct expenditure, with flow-on effects of \$38.08 million through supply-chain activity and \$21.24 million through household consumption. Construction activity in FY27 is expected to support approximately 187 jobs across New South Wales and generate \$19.11 million in wages and salaries. Value-added to the economy in FY27 is estimated at \$37.57 million, reflecting the substantial economic contribution during the main phase of construction.

In FY28, covering the remaining six months of the construction period, economic activity tapers as the project approaches completion. During this period, total economic output is estimated at \$52.59 million, comprising \$22.93 million in direct expenditure, \$19.04 million in supply-chain effects, and \$10.62 million in consumption effects. Employment impacts in FY28 are projected at approximately 94 jobs, with \$9.56 million in wages and salaries generated and \$18.79 million in value-added contributed to the New South Wales economy. These figures reflect the gradual wind-down of construction activity. A summary of the economic impact during construction is provided in Table 6.1.

Table 6.1 Summary of economic impacts

	Direct Effect	Supply-Chain Effect	Consumption Effect	Total Effect
Output (\$m)				
FY 27	\$45.86	\$38.08	\$21.24	\$105.18
FY 28	\$22.93	\$19.04	\$10.62	\$52.59
Employment (Jobs)				
FY 27	65	74	49	187
FY 28	32	37	24	94
Wages and Salaries (\$m)				
FY 27	\$7.05	\$7.69	\$4.37	\$19.11
FY 28	\$3.53	\$3.85	\$2.18	\$9.56
Value-added (\$m)				
FY 27	\$12.66	\$14.18	\$10.73	\$37.57
FY 28	\$6.33	\$7.09	\$5.36	\$18.79

Across the total construction period, the project is estimated to generate \$157.77 million in economic output, comprising \$68.79 million in direct effects and \$88.98 million in flow-on effects through supply-chain and consumption activity. Construction activity is estimated to support \$28.67 million in wages and salaries and contribute \$56.36 million in value-added to the New South Wales economy. These results highlight the extent to which construction expenditure supports broader economic activity across multiple sectors.

Employment impacts are expressed in full-time equivalent terms per year and are not cumulative across financial years, as the same roles may be sustained across different stages of the construction period.

6.4.2 Construction employment

Construction of the project would require workers with skills in construction, electrical installation, and supporting utility services. It is estimated that the peak workforce would be 150, with a total construction period of approximately 18 months. The type of skills required and number of workers would vary across the construction period, depending on the project phase.

Labour force participation in the Muswellbrook Shire LGA has tracked slightly higher than the NSW average, alongside a slightly higher unemployment rate, reflecting a younger median age in the region when compared to the state (refer to section 5.2.2). Employment in the construction sector is lower in all study areas compared to NSW (refer to sections 5.1.2, 5.1.3 and 5.3.2), indicating that relevant skills may be less readily available locally. Mining is the top employing industry in the region, and there may be opportunities for skill transfer between industries to support economic diversification.

The applicant is committed to maximising opportunities for local employment and upskilling in the regional communities in which they work, as such, the project workforce would be sourced from the local and regional area (Muswellbrook Shire LGA) as much as practicable (typically 70 per cent). The applicant would develop and implement measures to maximise participation of local and Indigenous residents and businesses in the project, including providing information to local residents and businesses seeking employment or procurement opportunities.

For individual workers, the project presents opportunities for further employment, as well as potential upskilling and higher incomes. Improving regional capabilities in the energy storage and generation sector and increasing workforce capabilities are identified as regional strategic priorities (refer to section 2.2), indicating this project would make a small contribution to regional economic priorities.

6.4.3 Opportunities for local and regional businesses

There is potential for a small number of local and regional businesses (including those based in the Muswellbrook Shire LGA) to participate in procurement opportunities during construction, particularly those in the construction, transport and logistic industries. This could lead to increased revenue for participating businesses and would contribute to the local and regional economy, including through indirect job creation. This would also include potential opportunities for local and regional Aboriginal businesses. Some local businesses may also benefit from construction workers spending money regionally, such as at food outlets located in nearby townships. This is most likely to occur in areas where the non-resident workforce would be accommodated, such as Muswellbrook and Aberdeen.

Findings from stakeholder consultation described in section 4 indicate a desire for temporary workforces to participate in the local economy and to be accommodated close to Muswellbrook's town centre (refer to section 6.5). Measures will be developed and implemented to maximise participation of local and Indigenous residents and businesses in the project (refer to section 10.2).

6.5 Housing and accommodation

The peak project workforce is estimated to be 150 workers, sourced from the LGA and surrounding areas as much as reasonably practicable. Short term accommodation (not private rental stock) would be used to accommodate all non-resident workers. Non-resident workers would be accommodated together in short-term accommodation facilities and transported to site by shuttle bus to manage worker fatigue and reduce the number of vehicles on the road.

Outcomes from consultation undertaken for this SIA identify temporary workforce accommodation and impacts on local housing availability as a concern in the local and regional study areas. Stakeholders consulted expressed a preference for non-resident workers to be accommodated in short-term accommodation rather than long-term rental housing. Private rental housing would not be used to accommodate non-resident workers, therefore no impacts on housing availability and affordability are expected to result from the project.

A high-level review of short term rental accommodation is described in section 5.2.4, which indicates there is approximately 652 short term rental accommodation rooms within a forty-five-minute driving distance of the project area. This is likely to be sufficient for the non-resident project workforce. However, consultation outcomes noted that the regional mining and rail industries regularly use hotels, motels and campgrounds to accommodate workers and that short-term accommodation facilities regularly experience high occupancy. Use of short term rental accommodation by the project would contribute to increased demand for local short-term accommodation, which may limit accommodation choice and access for visitors and other users of short term accommodation. Cumulative demand from construction of other major projects in the study area may also place additional demand on accommodation availability, as discussed in section 9.

A workforce accommodation strategy will be prepared prior to construction. This strategy would include a detailed review of short term accommodation within one hour driving distance of the project area, availability and occupancy, and actions to manage potential impacts resulting from non-resident workers, such as booking protocols, and transport arrangements for workers.

6.6 Social infrastructure and services

As described in section 5.2.5, health and emergency service infrastructure is located in Muswellbrook, with additional resources in Denman. Existing constraints on social infrastructure were identified in stakeholder consultation (section 4), primarily affecting emergency services, childcare and education services.

Given the small peak construction workforce (about 150 workers) and the temporary nature of construction, existing medical and emergency services in Muswellbrook (refer to 5.2.5) are expected to have sufficient capacity to absorb a minor increase in demand from the project. Stakeholder consultation (refer to section 4) identified some existing constraints on emergency services, childcare and education services. The non-resident workforce management measures in the CEMP (refer to section 10) will address the health and wellbeing needs of the workforce, including emergency response procedures.

6.7 Community cohesion and safety

As discussed in sections 5.2.1 and 5.3.2 and reported through stakeholder consultation (section 4), energy storage projects such as BESS facilities are a relatively new form of development in the region. Through the SIA consultation it was understood that some members of the community are opposed to energy generation and storage projects in general. Stakeholders expressed this was more prevalent among workers in the coal mining industry, as they perceive a risk to their jobs. This could contribute to a sense of division between those who support and oppose the project in the community.

A proportion of the construction workforce would be sourced from outside the Muswellbrook Shire LGA. As discussed in sections 5.2.2 and 5.2.3, the LGA already has a relatively high proportion of non-resident workers and strong participation in trade and manual labour industries, indicating the community is somewhat accustomed to temporary workforces.

Consultation identified that some community members have differing views about the growth of energy storage projects in the region, with some concern expressed about implications for mining employment (section 4). The temporary presence of non-resident workers also has the potential to affect community dynamics in a small rural locality.

The applicant would implement a community and stakeholder engagement plan that includes clear and factual information about the project and its workforce requirements. Workforce management measures, including a code of conduct, would also be implemented.

6.8 Access and connectivity

Construction traffic will access the project area primarily via the New England Highway and Sandy Creek Road, resulting in a temporary increase in vehicle movements during the construction period. Technical Report 7 (Traffic and transport) found that the surrounding road network would continue to operate within capacity. A small number of oversize and overmass vehicle movements would be required during construction. Temporary traffic management measures would be implemented during these movements. The speed limit on a portion of Sandy Creek Road would be reduced from 100 kilometres per hour to 60 kilometres per hour for the duration of construction to accommodate safe vehicle sight distances. Given the project's location and existing low traffic volumes on the surrounding road network, Technical Report 7 (Traffic and transport) found that impacts on road users would be temporary and localised.

Nearby residents and road users may notice increased traffic and experience minor delays, particularly during peak construction periods. This, along with the temporary reduction in speed from 100 kilometres per hour along a portion of Sandy Creek Road, may cause frustration for local residents and road users. However overall access and connectivity is not expected to be reduced during the project's construction.

6.9 Summary of construction impacts

The assessment of potential social impacts during construction is presented in Table 6.2.

Table 6.2 Summary of construction impacts

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Property, landholders and land use									
There would be a small reduction in the land available for agricultural grazing to facilitate construction.	Host landholder	Livelihoods	Minimal	Very unlikely	Negligible Negative	Addressed through negotiated agreement	N/A	N/A	N/A
Regional impacts on the agricultural industry and output are expected to be negligible, and there would be low biosecurity risks to agricultural land.	Host landholder	Livelihoods	Minimal	Unlikely	Negligible Negative	A biosecurity management procedure will be prepared and implemented as part of the CEMP	Minimal	Very Unlikely	Negligible Negative
Aboriginal cultural values									
Disturbance and removal of two Aboriginal artefacts, along with potential damage to previously unidentified artefacts due to construction activities.	Local Aboriginal stakeholders	Culture	Moderate	Possible	Medium Negative	Cultural Aboriginal Cultural Heritage Management Plan Unexpected finds protocol Ongoing engagement with RAPs	Minor	Possible	Low Negative

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Changes to local amenity									
Increased noise and vibration due to construction activities may disturb day to day activities for affected residents.	Residents in close proximity to construction activities	Surroundings	Minor	Likely	Medium Negative	Construction Noise and Vibration Management Plan Community and Stakeholder Engagement Plan	Minor	Possible	Low Negative
Potential for reduced enjoyment of views from nearby residential properties due to construction activities.	Residents in close proximity to construction activities	Surroundings	Minor	Likely	Medium Negative	Landscape and Visual Management Plan	Minor	Possible	Low Negative
Despite the low risk of dust impacts and even with mitigation, there is potential for some nearby residents to be sensitive to actual or perceived increases in dust.	Residents in close proximity to construction activities	Surroundings	Minimal	Possible	Low Negative	Construction dust control protocol Community and Stakeholder Engagement Plan	Minimal	Unlikely	Negligible Negative
Construction activities may generate noise, dust and increased traffic that contribute to short-term stress or annoyance for a small number of nearby residents. Given the temporary nature of construction, the small peak workforce, and the distance of construction activities from most sensitive receivers, the risk of material health and wellbeing impacts is low.	Residents in close proximity to construction activities	Health and wellbeing	Minor	Possible	Low Negative	Construction Environmental Management Plan. Community and Stakeholder Engagement Plan	Minimal	Unlikely	Negligible Negative

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Economy and employment									
Construction would require a peak workforce up to about 150, providing short term employment opportunities for local and regional residents with relevant skills.	Local and regional workforce	Livelihoods	Minor	Possible	Low Positive	Local business participation and employment measures	Minor	Likely	Medium Positive
Direct procurement opportunities for local and regional businesses, particularly those in the construction, transport and logistic industries, would have a positive impact on these businesses and contribute to the local and regional economy.	Local and regional businesses	Livelihoods	Minor	Possible	Low Positive	Local business participation and employment measures	Minor	Likely	Medium Positive
Housing and accommodation									
Use of short-term accommodation to accommodate non-resident construction workforce may reduce availability for visitors.	Accommodation facilities and tourism industry in the regional study area	Way of life Livelihoods	Minor	Possible	Low Negative	Workforce accommodation strategy	Minimal	Unlikely	Negligible Negative
Social infrastructure and services									
Potential minor increased demand for local emergency and health services due to the project's construction.	Muswellbrook community Social infrastructure providers	Health and wellbeing Accessibility	Minor	Possible	Low Negative	Workforce accommodation strategy	Minor	Unlikely	Low Negative

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Community cohesion and safety									
Potential for reduced community cohesion and safety due to various attitudes about the project, and presence of non-resident workers.	Muswellbrook community	Community Health and wellbeing	Minor	Possible	Low Negative	Measures to manage non-resident construction workforce Community Stakeholder Engagement Plan	Minor	Unlikely	Low Negative
Access and connectivity									
Increased construction traffic and changes to speed limits, may cause frustration for local residents and road users, however, overall access and connectivity is not expected to be affected during construction.	Local resident and road users	Accessibility	Minor	Possible	Low Negative	Construction Traffic Management Plan	Minor	Unlikely	Low Negative

7. Operation impacts

7.1 Property, landholders and land use

As described in Technical Report 6 (Land use and agriculture), the operational area of the project would occupy about 9.4 hectares of mapped agricultural land. Of this, about 5.1 hectares of land would be removed from agricultural production due to the presence of the BESS and associated infrastructure. This land would not be available for agricultural purposes for the duration of the project's operational life. Remaining land not required for operation would be available for most agricultural purposes, including grazing, subject to re-establishment of farm infrastructure. The connection infrastructure operational corridor would affect about 4.3 hectares of land. Most of this land, except for land occupied by the transmission tower structures, would be available for agricultural grazing, in line with the current use. The applicant has entered into, or proposes to enter into, agreements with relevant parties to support the development, operation and delivery of the project. Given this, there would be no residual impacts to private agricultural landholders arising from the change in land use.

Operational maintenance and inspection activities would require staff to access the project area on a monthly or quarterly basis. Given the low frequency of site access during operation, the biosecurity risk to surrounding agricultural land is expected to be low.

7.2 Aboriginal cultural values

No further impacts on Aboriginal cultural heritage are expected to occur during operation. The previously identified PAD, described in section 5.1.4, would not be impacted during the operational phase. The site would be registered on the Aboriginal Heritage Information Management System and documented in the ACHMP to provide for ongoing recognition and management.

7.3 Changes to local amenity

7.3.1 Noise and vibration

The project would operate 24 hours per day, with operational noise from the project being a function of operational utilisation (charging and discharging) as well as ambient temperature. As documented in Technical Report 2 (Noise and Vibration), the project is predicted to comply with the night-time project noise trigger levels at all sensitive receivers.

7.3.2 Visual amenity

As outlined in Technical Report 3 (Landscape and visual), connection infrastructure would be visible from all assessed viewpoints, and four nearby residential receivers are likely to have views of the facility from their properties. At present, electrical infrastructure is visible to only one of these receivers, meaning the project would introduce new visual elements for the other three.

Design and mitigation measures identified in Technical Report 3 (Landscape and visual) include retention of existing vegetation, implementation of screen planting and the use of complementary colours and finishes on project infrastructure to reduce visual contrast with the surrounding landscape.

The rural character of McCullys Gap and surrounds is valued by the local community, with community members raising concerns about visual impacts during consultation undertaken as part of the EIS (refer to section 4). Views of the project infrastructure may reduce enjoyment of rural views from some properties, and for community members traveling through the local area. It is expected that most people would adapt to these changes over time, particularly as screen planting matures.

7.3.3 Health and wellbeing

During operation, permanent project infrastructure would not generate emissions to air, and operational noise would comply with the relevant project noise trigger levels at all sensitive receivers. Operational traffic would be minimal (up to six personnel on a monthly or quarterly basis).

Technical Report 9 (Preliminary hazard analysis) assessed the risk of fire during operation as low based on the project's design, testing and safety management measures. Consultation undertaken as part of the EIS identified concerns among some community members regarding perceived fire risk associated with BESS technology (refer to section 4). The community and stakeholder engagement plan will guide how accessible information is provided to the community about the project design, safety systems and operational management, including how potential risks are managed, to address these concerns (refer to section 10).

7.4 Economy and employment

The BESS facility would generate modest direct economic and employment benefits during its operation while supporting the broader transition of the New South Wales electricity system. The facility would be operated remotely, 24 hours a day, seven days a week, consistent with industry practice for utility-scale battery energy storage systems. Therefore, the ongoing labour requirements of the project would be low and employment impacts will be limited in scale when compared with conventional energy or industrial facilities.

Regular maintenance and inspection activities will nevertheless be required to ensure the safe, reliable and compliant operation of the facility over its operational life. These activities will include equipment inspection and testing, battery system monitoring, thermal management, inspection and testing of fire suppression systems, testing of medium- and high-voltage electrical infrastructure, vegetation management, pest control and general civil and site maintenance. These activities are standard for facilities of this nature and are necessary to support asset integrity, safety and performance.

It is anticipated that up to six operational staff would be required to undertake these activities, which would generally occur on a quarterly basis rather than continuously. These roles are not expected to be full-time, site-dedicated positions. Contractors and operational staff would likely be deployed across multiple facilities operated by the applicant, rather than being permanently based at the BESS facility. Where practicable, operational and maintenance personnel would be sourced from the local and regional area.

While the inspection and maintenance program would provide some employment opportunities and represents a positive outcome for the workers involved, the overall employment benefit during the operation is expected to be negligible. This reflects the highly automated nature of the BESS, the limited number of personnel required, and the infrequent and periodic timing of maintenance activities.

Although staffing requirements are limited, operation of the BESS facility would generate a recurring program of preventive and corrective maintenance supported by ongoing operations and maintenance expenditure. A proportion of operational expenditure would be directed to locally and regionally sourced electrical, mechanical, civil, security and facilities management services.

There may also be a small number of procurement opportunities for local and regional businesses to support operational and maintenance activities, including vegetation management, pest control, electrical services and general site maintenance. While these opportunities may provide incremental benefits to participating businesses, the scale and frequency of operational procurement is expected to be limited and would not result in a material change to the local or regional economy.

The broader economic and employment impacts associated with the operation of the BESS facility are therefore expected to remain minor in scale. The reliance on remote operation and periodic maintenance limits the potential for substantial ongoing employment or procurement activity. Notwithstanding this, the BESS facility would provide modest, sustained benefits through limited employment opportunities, targeted local procurement during maintenance activities, and the applicant's commitments to local participation throughout the operational life of the project, in addition to the BESS's primary economic benefit, being increased grid capacity and stabilisation.

7.5 Housing and accommodation

Operation is not expected to impact housing and accommodation in the social locality.

7.6 Social infrastructure and services

As detailed in Technical Report 9 (Preliminary Hazard Analysis), the risk of an emergency during operation is assessed as low, and would be managed through site design and safety measures. Consultation identified concerns among some stakeholders regarding the capacity of emergency services to respond to potential emergencies (refer to section 4). The community and stakeholder engagement plan would include clear information on emergency response arrangements.

7.7 Community cohesion and safety

The Muswellbrook Shire LGA has a strong association with the coal mining industry, and consultation indicated that some community members have expressed concern about the implications of the energy transition for mining employment in the region. Consultation also identified an expectation that the project should contribute to community benefit sharing (see section 4).

As outlined in the SEARs, the applicant must 'provide details of any proposed voluntary benefit-sharing, having regard for the Benefit-Sharing Guideline 2024.' (refer to Table 1.1). The project proposes a benefit-sharing approach that prioritises long-term benefits for the local community, informed by stakeholder engagement, and exceeds the NSW Benefit-Sharing Guideline (Department of Planning, Housing and Industry (DPHI), 2024a). All benefit-sharing contributions are proposed to support local community initiatives, with funds to be delivered through the Muswellbrook Shire Community Benefit Fund in accordance with Council's established governance framework. This approach is intended to support community-identified priorities and deliver enduring social benefits over the life of the project.

7.8 Access and connectivity

Operational traffic volumes would be minimal and would therefore not affect access or connectivity for other road users.

7.9 Summary of operation impacts

The assessment of potential social impacts during operation is presented in Table 7.1.

Table 7.1 Summary of operation impacts

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Property, landholders and land use									
Operational footprint of the BESS facility leading to a reduction in land used for agricultural activities	Host landholder	Livelihoods	Minimal	Very unlikely	Negligible Negative	Addressed through negotiated agreement	Minimal	Very unlikely	Negative Negligible
Aboriginal cultural values									
Operation is not expected to impact Aboriginal cultural heritage.	Local Aboriginal stakeholders	Culture	Minimal	Very unlikely	Negligible Negative	No mitigation measures required	Minimal	Very unlikely	Negative Negligible
Changes to local amenity									
The project is predicted to comply with the nighttime project noise trigger levels at all sensitive receivers.	Residents in close proximity to the project	Surroundings	Minimal	Very unlikely	Negligible Negative	Operational noise controls	Minimal	Very unlikely	Negative Negligible
Views of the project infrastructure may reduce enjoyment of rural views from some properties, and for community members traveling through the local area. It is expected that most people would adapt to these changes over time, particularly as screen planting matures.	Residents in close proximity to the project	Surroundings	Moderate	Possible	Medium Negative	Targeted landscaping planting	Minor	Unlikely	Low Negative

Potential impact description	Stakeholder affected	SIA Guideline social impact category	Magnitude	Likelihood	Pre-mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Economy and employment									
Potential to utilise a small number of local workers and businesses for operation and maintenance activities.	Muswellbrook regional workers and businesses	Livelihoods	Minor	Unlikely	Low Positive	No mitigation measures required	Minor	Unlikely	Low Positive
Housing and accommodation									
Operation is not expected to impact housing and accommodation in the social locality.	Housing, accommodation facilities and tourism industry in the regional study area	Way of life	Minimal	Very unlikely	Negligible Negative	No mitigation measures required	Minimal	Very unlikely	Negative Negligible
Social infrastructure and services									
Regional emergency and health services may potentially experience increased demand if there is an emergency associated with operation.	Local and regional community Local emergency services	Health and wellbeing Accessibility	Minor	Possible	Low Negative	Community and Stakeholder Engagement Plan	Minor	Unlikely	Low Negative
Community cohesion, wellbeing and values									
Opportunity for contributions to Council's community benefit fund which would contribute to community priorities and needs.	Local and regional communities	Community Culture	Minor	Likely	Medium Positive	N/A	Minor	Likely	Medium Positive
Potential for some community members to feel concerned about perceived fire risks associated with the project.	Local and regional communities	Health and wellbeing Surroundings	Minor	Possible	Low Negative	Community and Stakeholder Engagement Plan	Minor	Unlikely	Low Negative

8. Decommissioning impacts

The operational life of the project is expected to be at least 30 years. At the end of the project's operational life, all above ground infrastructure would be removed from the project area, unless otherwise agreed with the relevant stakeholders. Infrastructure within the existing Muswellbrook 330 kV substation would not be decommissioned or removed. Disturbed areas would be rehabilitated to the pre-existing land use or other condition in consultation with relevant stakeholders.

Social impacts occurring during the decommissioning of the project are likely to be similar in nature to, but generally less than, the construction impacts identified in section 6. These may include:

- temporary changes to local amenity (noise, dust and visual) during removal of infrastructure
- a temporary increase in traffic on the local road network
- opportunities for local employment and procurement of goods and services
- short-term demand for accommodation if non-resident workers are required.

Given the long operational life of the project, the local and regional socio-economic context is likely to have changed by the time decommissioning occurs. As a result, magnitude and likelihood ratings have not been assigned for decommissioning-related social impacts.

A Decommissioning Management Plan would be implemented, including safeguards for environmental and social values, and stakeholder engagement protocols to ensure timely communication with affected landholders and stakeholders. With these measures in place, no significant social impacts are anticipated.

9. Cumulative impacts

9.1 Approach

Section 19.1 of the EIS outlines the assessment methodology for cumulative impacts including the methods for identifying what projects have been considered as part of the issue-specific cumulative impact assessments for the project. Cumulative social impacts were assessed with reference to the *Cumulative Impact Assessment Guidelines for State Significant Projects* guidelines (Department of Planning and Environment (DPE), 2022a) (the Cumulative Impact Assessment Guidelines) as the key NSW Government framework for assessing project-level cumulative impacts for State significant development projects.

To ensure the cumulative assessment is commensurate with the scope of the SIA, the following criteria were applied to identify projects with the potential to contribute to cumulative social impacts:

- the project is expected to have a construction period that overlaps with the McCullys Gap BESS
- the project is located within 25 kilometres of the McCullys Gap BESS project area.
- the project is a large scale major development or infrastructure project
- social and economic impacts of the project, particularly in relation to accommodation, access and connectivity, and amenity, are identified as having potential for material cumulative interaction with the project.

Projects meeting these criteria are summarised in Table 9.1. These comprise a mix of approved and proposed energy, mining and transport infrastructure developments, several of which adjoin the project area or share transport corridors and workforce accommodation markets with the project. Outside of those meeting this criteria an additional three projects have been considered (Upper Hunter Battery Energy Storage System, Kayuga Solar Farm and Bowmans Creek Wind Farm) given the potential for cumulative workforce accommodation impacts.

Table 9.1 *Relevant future projects for cumulative social impact assessment*

Project	Approx. distance to project area	Project status	Indicative timing
Muswellbrook Pumped Hydro Energy Storage (SSI-76014961)	Immediately south, connecting into the Muswellbrook 330 kV substation	Preparing EIS	Construction period overlap: Likely, construction expected to start in 2026 and complete in 2029. Operation period overlap: Yes.
Queensland – Hunter Gas Pipeline (MP06_0286)	Immediately northeast	Approved in 2009	Construction period overlap: Potentially, no indicative construction start date available. Operation period overlap: Yes.
Bells Mountain Battery Energy Storage System (SSD-83968208)	Immediately southwest, connecting into the Muswellbrook 330 kV substation	Preparing EIS	Construction period overlap: Potentially, construction expected to start in 2027 / 2028 and take approximately 12 months. Operation period overlap: Yes, operational life of approximately 30 years.
Gelston Battery Energy Storage System (SSD-104190458)	Immediately southwest, connecting into the Muswellbrook 330kV substation	Preparing EIS	Construction period overlap: Potentially, construction expected to start in 2027 / 2028 and take approximately 22 months. Operation period overlap: Yes, operational life of approximately 20 years
Muswellbrook Solar Farm (SSD-46543209)	800 metres south	Approved in 2025	Construction overlap: Likely, construction anticipated to begin in mid 2026 and take approximately 31 months. Operation overlap: Yes, operational for about 30 years.
New England REZ Transmission Project (SSI-74175972)	Route not finalised (potentially 1 to 3 kilometres east)	Preparing EIS	Construction period overlap: Likely, construction expected to start in 2027. Construction expected to take three to four years. Operation period overlap: Yes.
Muswellbrook Thermal Storage Facility (SSD-88560713)	2.2 kilometres southwest	Preparing EIS	Construction period overlap: Potentially, no indicative construction start date available. Construction expected to take 16 to 22 months. Operation period overlap: Yes, operational life of approximately 25 years.
Muswellbrook Battery Energy Storage System (SSD-29704663 -Mod-1)	3.9 kilometres southwest	Approved in 2023. Submitted modification application in 2025.	Construction period overlap: Likely, construction expected to start in Q4 2026 and take 12 months. Operation period overlap: Yes, operational life of approximately 20 years.
Muswellbrook Bypass	4 kilometres southwest	No development consent required.	Construction period overlap: Potentially, construction expected to start in 2027. Operation period overlap: Yes.

Project	Approx. distance to project area	Project status	Indicative timing
Upper Hunter Battery Energy Storage System (SSD-61707209)	6.4 kilometres northwest	Preparing EIS	Construction period overlap: likely, however no indicative construction start date available. Construction is expected to take 18 to 24 months. Operation period overlap: Yes, operational for 25 years.
Kayuga Solar Farm (SSD-69489708)	8.5 kilometres west	Preparing EIS	Construction period overlap: Likely, construction planned to start in 2026. Construction is expected to take 18 to 24 months. Operation period overlap: Yes, operational life of approximately 30 years.
Bowmans Creek Wind Farm (SSD-10315)	15 kilometres east	Approved in 2024	Construction period overlap: Likely, construction was expected to start in 2025. However, it is considered construction has not yet commenced. Construction is expected to take 18 months. Operation period overlap: Yes, operational life of approximately 25 years.

9.2 Cumulative social impact assessment

The projects identified in Table 9.1 have the potential to contribute to cumulative social impacts at both the local and regional scale, primarily where multiple projects occur in close proximity, have overlapping construction periods, or place concurrent demands on shared infrastructure, services or community resources.

At the local scale, several projects are located within three kilometres of the project or directly adjacent to the project area, which may result in concurrent or extended periods of construction-related amenity impacts, including noise, vibration, dust and changed views. Cumulative operational noise and visual changes may also affect the rural amenity of the locality. Traffic-related cumulative impacts may occur on Sandy Creek Road, which would be used by multiple projects, with overlapping construction traffic potentially contributing to periods of increased vehicle movements and minor delays for local road users.

At the regional scale, cumulative impacts would primarily be associated with workforce demand and accommodation. Several projects propose temporary construction workforces and reliance on short-term accommodation within the region. The combined demand from multiple projects may contribute to accommodation constraints, reducing availability for visitors and other users of short-term accommodation.

More broadly, the concentration of energy generation, storage and transmission projects in the area reflects the locality's proximity to the Muswellbrook 330 kV substation and its role in the Hunter-Central Coast REZ. While this is expected to deliver regional economic and employment benefits, it may also contribute to changes in the character of the McCullys Gap locality over time. The cumulative effect of land use change in the area was noted as a concern by some stakeholders during consultation on other projects in the region (see section 4). The construction and operation of these projects would collectively support employment and local business opportunities. Cumulative community benefits contributions which will provide ongoing funding and benefits for community needs.

Some cumulative effects, particularly changes to the visual character of the McCullys Gap locality, would occur progressively as projects are developed and cannot be fully mitigated at the individual project level. For other cumulative impacts, including construction amenity, traffic and accommodation demand, the implementation of project-specific mitigation measures outlined in section 10 (including workforce accommodation measures and community engagement), and coordination with relevant authorities, would reduce the potential for significant adverse outcomes.

10. Mitigation and management

10.1 Approach to mitigation

Where impacts could not be avoided, measures to minimise or manage impacts on the community are provided in Table 10.1. The measures provided in Table 10.1 are recommended in addition to the mitigation measures provided in other technical reports for the EIS, including Technical Reports 2 (Noise and vibration), 3 (Landscape and visual), 4 (ACHAR), 6 (Land use and agriculture), 7 (Traffic and transport), and 9 (Preliminary hazard analysis).

Social impact mitigation and management measures will be reviewed periodically and adjusted where monitoring or community feedback indicates that impacts differ from those predicted in this assessment. Monitoring activities, including tracking of complaints, accommodation availability and employment outcomes, will be integrated into the community stakeholder engagement plan and relevant management plans. Where monitoring identifies unanticipated impacts or indicates that measures are not achieving their intended outcomes, additional or modified responses will be identified through the procedures established in the community stakeholder engagement plan.

10.2 Mitigation measures

The mitigation measures recommended to minimise or manage impacts on the community, and enhance positive outcomes, are detailed in Table 10.1. These measures are recommended in addition to the mitigation measures provided in other technical reports for the EIS.

Table 10.1 Recommended mitigation measures

Impact/issue	Recommended management / mitigation / enhancement	Timing
Socio-economic impacts, communication and engagement	A Community and Stakeholder Engagement Plan will be developed and implemented to guide the delivery of communication and engagement, including an approach and mechanisms for engaging with landholders, nearby residents and other relevant stakeholders. The plan will include: – notifications to residents and relevant stakeholders about construction timing, potentially disruptive works, traffic impacts, road closures and project updates – a complaints and enquiries management procedure, including a 24-hour, seven-day-a-week phone line, postal address and email address, published and maintained for the duration of the project lifecycle – protocols for responding to and resolving complaints within defined timeframes – the approach to providing information to the community about the project's design, safety systems and operational management.	Pre-construction, construction, operation, decommissioning
Local business participation and employment opportunities	Measures will be developed and implemented to maximise participation of local and Indigenous residents and businesses in the project, including: – provide information to locals seeking employment or procurement opportunities – appoint a point of contact for procurement, and advertise the contact details on the project website.	Pre-construction, construction, operation
Workforce accommodation	A workforce accommodation strategy will be developed and implemented prior to the commencement of construction to manage the accommodation requirements and potential impacts of non-resident construction workers for the project. The strategy will include: – an updated review of short-term accommodation availability, occupancy rates, seasonal and peak demand periods, and foreseeable cumulative demand within one hour's driving distance of the project area – the anticipated number of non-resident workers requiring accommodation, including the expected timing and duration of peak accommodation demand – identification of preferred accommodation providers, and documented consultation with relevant accommodation providers during preparation of the strategy to confirm that sufficient accommodation capacity is reasonably expected to be available during the relevant construction periods – booking protocols, including how workforce accommodation will be coordinated and lead times for accommodation providers	Pre-construction, construction

Impact/issue	Recommended management / mitigation / enhancement	Timing
	– monitoring of accommodation occupancy rates during construction to identify and respond to any material changes attributable to the project The strategy will be developed in consultation with Muswellbrook Shire Council and relevant local accommodation providers. A record of consultation undertaken, provider responses and the basis on which sufficient accommodation capacity has been demonstrated will be maintained and made available to the Planning Secretary on request. Non-local workforce accommodation will not be sourced from the private rental market.	
Impacts of non-resident workforce on local communities	Workforce management measures will be developed and implemented as part of the CEMP to manage the potential impacts of the non-resident construction workforce on local communities.	Pre-construction, construction
Monitoring and adaptive management	The CEMP will include provisions for monitoring and adaptive management of social impacts during construction, including monitoring of complaints and community feedback, and reporting on workforce accommodation, local employment and procurement outcomes. Where monitoring identifies the need to adjust mitigation measures, the relevant measures would be updated accordingly.	Pre-construction, construction

11. Conclusion

This SIA has assessed the potential social impacts of the construction, operation and decommissioning of the project in accordance with the *Social Impact Assessment Guideline for State Significant Projects* (DPE, 2023) and the SEARs.

The assessment found that the main potential for social impacts would be during construction. Positive social and economic impacts during construction include employment and procurement opportunities for local and regional workers and businesses. Potential negative impacts include localised and temporary amenity changes for nearby residents (noise, dust and visual), a temporary increase in traffic on the local road network, increased demand for short-term accommodation, and potential impacts on Aboriginal cultural heritage, which would be managed through the ACHMP.

Operational impacts would be limited. The BESS would operate remotely with periodic maintenance requiring up to six personnel on a monthly or quarterly basis. Operational noise would comply with the relevant project noise trigger levels at all sensitive receivers. Visual amenity for some nearby receivers would change for the duration of the project's operational life, with mitigation through screen planting and complementary finishes on project infrastructure. Through contributions to the Muswellbrook Shire Community Benefit Fund, the project would contribute to community needs and priorities over its operational life.

A number of major projects are proposed in the local and regional area. Potential cumulative social impacts relate primarily to accommodation demand, traffic on Sandy Creek Road, and changes to the visual character of the McCullys Gap locality. These would be accompanied by cumulative benefits through employment and procurement opportunities for local workers and businesses.

Recommended mitigation and management measures include a community and stakeholder engagement plan, local business participation and employment measures, a workforce accommodation strategy, non-resident workforce management measures, and monitoring and adaptive management provisions in the CEMP. These measures are recommended in addition to the mitigation measures provided in other technical reports for the EIS.

12. Limitations

This report has been prepared by GHD Pty Ltd for Muswellbrook Pro Unit Holdings Pty Ltd and may only be used and relied on by Muswellbrook Pro Unit Holdings Pty Ltd for the purpose set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Muswellbrook Pro Unit Holdings Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope assumptions set out in the report.

The opinions, conclusions and any recommendations in this report are based on the assessment undertaken and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was finalised.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

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Appendix A

SLA review questions

General	
1. Does the lead author meet the qualification and experience requirements?	Yes – the lead author’s qualification and experience meet the requirements, as declared in section 1.4
2. Has the lead author provided a signed declaration?	Yes – the signed declaration has been included in section 1.4
3. Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	Yes – The SIA has been prepared by social research and social performance specialists with proven experience in SIA. The SIA has been prepared using proven social science research methods relevant to the nature of the project.
Projects social locality and social baseline	
4. Does the SIA report identify and describe all the different social groups that may be affected by the project?	Yes – section 5 provides a description of the social locality / study area, including the different social groups who may be affected by the project.
5. Does the SIA report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features?	Yes – section 5 provides a description of built or natural features that have value for people in the study area, as relevant to the scope of the assessment.
6. Does the SIA report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects?	Yes – section 5 provides a description of historical, current, and expected social trends or social changes for people in the locality, as relevant to the scope of the assessment. Section 4 reports findings from consultation which includes local stakeholders’ concerns about this project and other major development projects in the region
7. Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the diversity of views and likely experiences?	Yes – the elements and indicators discussed in section 5 (the social baseline) are justified in the SIA scoping exercise (refer to section 3.2). Section 2 has been informed by relevant literature and data as referenced throughout. The EIS and SIA consultation activities reported in section 4 sought to understand the views of a diverse range of local stakeholders, and how they expect to be affected by the project.
8. Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Yes – section 3 describes the SIA methodology including the social science research methods implemented, and the data limitations and explained in section 3.8.
Identification and description of social impacts	
9. Does the SIA report adequately describe likely social impacts from the perspectives of how people may experience them, and explain the research used to identify them? When undertaken as a part of SIA scoping and initial assessment, has the plan for the SIA report been detailed?	Yes – sections 6 and 7 describes the potential social impacts of the project, including the concerns of local communities based on outcomes of consultation activities described in section 4. Section 3.2 presents the SIA scoping exercise, which justifies the focus areas for the social baseline (section 5) and assessment of impacts (sections 6 and 7).
10. Does the SIA report apply the precautionary principle to identifying social impacts, and consider how they may be experienced differently by different people and groups?	Yes – sections 6 and 7 describes the potential social impacts of the project on local communities and stakeholders, and considers how different groups in the community, particularly vulnerable community members, may experience the impacts differently.
11. Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	The findings from the SIA scoping exercise (section 3.2) and <i>McCullys Gap Battery Energy Storage System Scoping Report</i> (GHD, 2025). influenced the project design and EIS engagement strategy.
Community engagement	
12. Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Yes – the SIA consultation activities were planned to target stakeholders relevant to the scope of the assessment and key social issues. The EIS consultation activities sought inputs from a broader range of stakeholders.

13. How have the views, concerns and insights of affected and interested people influenced both the project design and each element of the SIA report?	Consultation findings have informed the social baseline (section 5), impact identification and assessment (sections 6 to 9) and identification of mitigation measures (section 10).
Predicting and analysing social impacts	
14. Does the SIA report impartially focus on the most important social impacts to people at all stages of the project, without any omissions or misrepresentations?	In line with the principles for SIA of being 'impartial' and 'inclusive' the SIA focuses on the concerns expressed by stakeholders and communities during SIA and EIS consultation activities
15. Does the SIA report analyse the distribution of both positive and negative social impacts, and identify who will benefit and who will lose from the project?	Yes – sections 6 and 7 identify positive and negative impacts and who is affected.
16. Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Yes – assumptions and limitations are identified in section 3.8
Evaluating significance	
17. Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects?	Yes – sections 6 and 7 recognise that different groups in the community may experience impacts differently. Cumulative impacts are discussed in section 9.
18. Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Yes – the evaluations of significance in sections 6 and 7 consider the different experiences of different groups, including vulnerable groups.
Responses, monitoring and management	
19. Does the SIA report propose responses that are tangible, deliverable, likely to be durably effective, directly related to the respective impact(s) and adequately delegated and resourced?	Yes – section 10 demonstrates how the recommended social impact mitigation and enhancement measures directly respond to the impacts and benefits identified in the SIA.
20. Does the SIA report demonstrate how people can be confident that social impacts will be monitored and reported in ways that are reliable, effective and trustworthy?	Yes – section 10 describes the approach to monitoring and reporting of social impact management
21. Does the SIA report demonstrate how the applicant will adaptively manage social impacts and respond to unanticipated events, breaches, grievances and non-compliance?	Yes – section 10 describes the approach to adaptive management in response to complaints.

Appendix B

Demographic data

Table B.1 *Local and regional demographic data*

	McCullys Gap SAL	Muswellbrook SAL	Muswellbrook LGA	NSW
Population				
Total population (2021)	262	12,272	16,357	8,072,163
Population change (2016–2021)	–	–	1.7%	7.9%
Indigenous persons (total)	14	1,605	1,908	278,043
Indigenous population (%)	5.3%	13.1%	11.7%	3.4%
Age profile				
Under 18 years (%)	24.0%	26.1%	25.3%	21.7%
Over 65 years (%)	14.1%	14.0%	15.0%	17.6%
Dependency ratio	47	56	57	56
Median age (years)	41	35	37	39
Families and households				
Total families	84	3,129	4,222	2,135,964
Couple family with children (%)	40.5%	40.5%	40.6%	44.7%
Couple family without children (%)	44.0%	37.2%	38.9%	37.9%
One parent family (%)	3.6%	21.2%	19.0%	15.8%
Other family (%)	3.6%	1.3%	1.4%	1.6%
Family household (%)	88.0%	67.5%	68.8%	71.2%
Lone person household (%)	7.6%	29.6%	28.5%	25.0%
Group household (%)	0.0%	3.0%	2.7%	3.8%
Mobility				
Lived at same address 1 year ago (%)	84.0%	75.0%	76.6%	79.4%
Lived at same address 5 years ago (%)	67.4%	48.4%	50.8%	53.9%
Cultural diversity				
Born in Australia (%)	88.2%	84.7%	84.8%	65.4%
Born in non-main English-speaking country (%)	0.0%	5.3%	4.6%	23.0%
Speaks only English at home (%)	92.7%	86.9%	88.0%	67.6%
Language other than English at home (%)	3.4%	4.9%	4.1%	26.6%
Employment by industry (%)				
Agriculture, Forestry and Fishing	8.5%	1.9%	7.1%	2.0%
Mining	21.1%	22.3%	21.5%	1.0%
Manufacturing	2.1%	3.8%	3.8%	5.5%
Electricity, Gas, Water and Waste Services	0.0%	4.2%	3.8%	1.0%
Construction	6.3%	5.9%	5.7%	8.6%
Wholesale Trade	2.8%	2.6%	2.6%	2.8%
Retail Trade	6.3%	8.8%	7.9%	9.0%
Accommodation and Food Services	0.0%	7.7%	6.8%	6.2%
Transport, Postal and Warehousing	0.0%	2.8%	2.9%	4.6%
Information Media and Telecommunications	0.0%	0.6%	0.5%	1.8%
Financial and Insurance Services	0.0%	0.9%	0.9%	5.3%

	McCullys Gap SAL	Muswellbrook SAL	Muswellbrook LGA	NSW
Rental, Hiring and Real Estate Services	3.5%	1.1%	1.1%	1.7%
Professional, Scientific and Technical Services	2.8%	2.3%	2.5%	8.9%
Administrative and Support Services	4.9%	5.4%	5.0%	3.2%
Public Administration and Safety	7.7%	4.1%	3.9%	6.1%
Education and Training	14.1%	6.3%	6.3%	8.7%
Health Care and Social Assistance	4.9%	10.0%	9.0%	14.4%
Arts and Recreation Services	0.0%	1.0%	0.9%	1.4%
Other Services	7.7%	4.5%	4.1%	3.4%
Inadequately described / Not stated	7.0%	3.8%	3.7%	4.6%
Labour force				
Labour force participation (%)	77.2%	58.8%	60.1%	58.7%
Unemployment (%)	3.2%	6.0%	5.1%	4.9%
Income				
Median individual income per week (\$)	\$840	\$759	\$769	\$813
Median household income per week (\$)	\$2,299	\$1,603	\$1,628	\$1,829
Dwellings				
Total private dwellings	96	5,158	6,802	3,199,988
Separate house (%)	100.0%	87.1%	88.2%	65.6%
Semi-detached, terrace house, townhouse (%)	0.0%	11.4%	9.9%	11.7%
Flat, unit or apartment (%)	0.0%	0.6%	1.0%	21.7%
Other dwelling (%)	0.0%	0.4%	0.5%	0.7%
Average persons per household	2.8	2.5	2.5	2.6
Dwelling tenure				
Owned (fully or with a mortgage) (%)	73.9%	59.2%	61.7%	64.0%
Rented (%)	12.0%	38.0%	34.2%	32.6%
Weekly median rent (\$)	\$300	\$310	\$300	\$420
Dwelling occupancy				
Occupied dwellings (%)	95.8%	88.1%	88.2%	90.6%
Unoccupied dwellings (%)	4.2%	11.9%	11.8%	9.4%
Education				
Completion of Year 11 or 12 (or equivalent) (%)	-	-	41.5%	63.8%
Bachelor's degree level (%)	7.6%	14.2%	14.3%	32.9%
Certificate level (%)	71.4%	65.0%	64.4%	32.3%
Advanced diploma and diploma level (%)	16.2%	14.3%	15.1%	16.7%
Socio-economic disadvantage				
SEIFA IRSAD decile (2021, within NSW)	7	1	2	N/A

Source: ABS Census of Population and Housing, 2021, unless otherwise stated.



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