
F.10 Social impact assessment

Gunlake Quarry Continuation Project (SSD-12469087)

Social Impact Assessment

Prepared for Gunlake Quarries Pty Ltd
September 2021



Gunlake Quarry Continuation Project (SSD-12469087)

Social Impact Assessment

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Prepared by

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17 September 2021

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17 September 2021

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Executive Summary

ES1 Introduction

Gunlake Quarries Pty Ltd (Gunlake) operates a hard rock quarry (the 'Quarry') located at 715 Brayton Road, Marulan NSW. The Quarry is approximately 7 kilometres (km) north-west of the centre of Marulan in the Goulburn Mulwaree local government area. The land surrounding the Quarry is rural land with a low population density. Gunlake commenced operations in 2009 under project approval 07-0074 granted in September 2008.

Since the Quarry received approval for the Extension Project in 2017 (SSD 7090, NSW Land and Environmental Court Approval 20017/108663), the tonnage of saleable product dispatched by the Quarry has steadily increased and, with an infrastructure boom across the State, Gunlake forecast that demand for products from the Quarry will continue to increase. In response to the increased demand for products from the Quarry, it is proposed to transport more saleable product along the Primary Transport Route. This will require an increase in truck movements than what is currently approved. The additional truck movements will all occur on the recently upgraded Primary Transport Route that has been designed to accommodate comfortably the additional truck movements. The Project is known as the Gunlake Quarry Continuation Project (the 'Continuation Project'). The ignimbrite hard-rock resource will continue to be extracted and processed using the methods currently employed at the Quarry.

The Continuation Project is classified as a State Significant Development (SSD) under Schedule 1, Clause 7 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). This report accompanies a new SSD application and environmental impact statement (EIS) for the Continuation Project.

ES2 Gunlake Quarry Continuation Project

Gunlake seeks a new development approval for the Continuation Project that allows:

- ongoing Quarry operations;
- a maximum of 375 inbound and 375 outbound daily truck movements with up to 4.2 million tonnes per annum (Mtpa) of Quarry products transported from the site in any calendar year;
- 24-hours Quarry operations Monday to Saturday, except 6 pm Saturday to 2 am Monday;
- an extraction depth of 546 metres Australian High Datum (mAHD); and
- a 30-year Quarry life (from the date of Continuation Project approval).

ES3 Assessment of impacts

A summary of the key potential social impacts and benefits identified are provided in Table ES1. The full assessment of impacts and benefits are provided in Section 8.

Table ES1 Key social impacts and benefits

Impact/Challenge	Mitigated impact
Public safety impact related to increased truck movements along the Primary Transport Route	Low-6
Public safety concerns related to increased truck movements on the Primary Transport Route was the primary potential impact raised by stakeholders during in-depth interviews. Stakeholders raised concerns related to the current speed limit of 100 km/h along the Primary Transport Route, concealed driveways, and cars speeding to pass slower moving trucks as potentially increasing risks of vehicle crashes. It is recommended that Gunlake continue to advocate for a reduction in the speed limit from 100 km/h to 80 km/h along the Primary Transport Route.	
Accessibility related to demand on emergency services	Low-6
Increased truck movements on the Primary Transport Route and existing demand on emergency services (particularly ambulance services) were key issues raised by local emergency service providers from the perspective of responding to potential incidents. Adherence to Gunlake’s current consultation strategies with emergency services are anticipated to manage potential accessibility impacts related to demand on emergency services to ensure that the likelihood and consequence of potential impacts are not increased as a consequence of the Continuation Project.	
Amenity related to traffic noise	Medium-8
In-depth interview participants raised concerns that noise from increased truck movements would detract from the current amenity of the local community and affect some residents located along the Primary Transport Route. Concerns were raised related to general road noise, road noise associated with the road seal, and use of air brakes. Although there is no evidence to suggest that road noise will increase in exceedance of road traffic noise criteria, Gunlake will continue to monitor their community engagement mechanism to assess whether there is an increase in issues related to road noise specifically.	
Benefits	Enhanced benefit
Community benefit related to community investment and involvement	Significant-12
Gunlake participates in numerous local community programs and events, including ongoing annual funding/grant commitments, recent community commitments and initiatives, and memberships. Gunlake’s community contributions in the form of grants, sponsorships and donations were noted and commended by several stakeholders during in-depth interviews. Gunlake will continue to provide community support in the form of their annual contribution commitments to organisations within the local and regional area. Gunlake will also continue to explore funding and grant opportunities within the local and regional area where need is determined and will continue to adopt a shared value approach in their identification of community investment and involvement opportunities.	
Livelihood related to training and apprenticeship opportunities	Significant-11
During in-depth interviews, stakeholders noted the benefits associated with providing training and upskilling opportunities to local workers and youth in the local and regional areas. Gunlake will continue partnerships with local employment, apprenticeship and training services in the local and regional area, such as TAFE, Mission Australia, and the Goulburn District Education Foundation, to find apprenticeship and employment opportunities for workers who have been upskilled, started an apprenticeship program, or who are interested in beginning an apprenticeship program. Training and upskilling programs should focus on engaging and training/educating disadvantaged, Aboriginal and/or Torres Strait Islanders, unemployed, and young people with a view to employing recent graduates.	
Livelihood related to ongoing and increased local employment	Moderate-8
During in-depth interviews, participants across a range of stakeholder groups consistently identified employment arising from the Continuation Project as a significant potential benefit, both related to ongoing employment and increased employment opportunities from the Continuation Project. Gunlake will continue to adopt a preferential approach to hiring which prioritises employment of workers with relevant skills residing within the local area, then the regional area, followed by hiring outside of these areas. Gunlake will also continue to work with local employment, apprenticeship and training agencies to enhance the potential of hiring of local and regional workers (see Section 8.5.4). Partnership with local employment and training agencies should specifically target at-risk youth and people struggling to find employment by providing direct employment opportunities.	

ES4 Evaluation of the project

This Social Impact Assessment (SIA) provides an assessment of potential social impacts and benefits associated with the Continuation Project. It identifies the relevant social issues, social impacts and benefits, and associated mitigation and enhancement measures applicable to the design and operation of the Continuation Project in accordance with the *Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development* (SIA Guideline 2017) (DPE 2017a). This SIA has also been informed by the *Social impact assessment guideline for state significant projects* (SIA Guideline 2021) (DPIE 2021a).

Mitigation and management strategies have been proposed for each of the identified potential social impacts to minimise negative consequences and to maximise social benefits for the local community. Performance indicators should be developed by Gunlake for each mitigation and enhancement measure in consultation with stakeholders and will be monitored throughout the Continuation Project life span by Gunlake.

An adaptive approach will allow Gunlake to manage and respond to changing circumstances and new information over time through ongoing monitoring and periodic review of mitigation strategies; this will allow for modification if required and if appropriate. This adaptive approach will ensure that the management of social impacts identified in the SIA will result in effectively minimising negative social impacts and maximising social benefits for the local community. The proposed mitigation and enhancement measures are summarised in full in Section 9.

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1 Introduction

1.1 Overview

Gunlake Quarries Pty Ltd (Gunlake) operates a hard rock quarry (the 'Quarry') located at 715 Brayton Road, Marulan NSW. The Quarry is approximately 7 kilometres (km) north-west of the centre of Marulan in the Goulburn Mulwaree local government area (Figure 1.1). The land surrounding the Quarry is rural land with a low population density. Gunlake commenced operations in 2009 under project approval 07-0074 granted in September 2008.

Since the Quarry received approval for the Extension Project in 2017 (SSD 7090, NSW Land and Environmental Court Approval 20017/108663), the tonnage of saleable product dispatched by the Quarry has steadily increased and, with an infrastructure boom across the State, Gunlake forecast that demand for products from the Quarry will continue to increase. In response to the increased demand for products from the Quarry, it is proposed to transport more saleable product along the Primary Transport Route. This will require an increase in truck movements than what is currently approved. The additional truck movements will all occur on the recently upgraded Primary Transport Route that has been designed to accommodate comfortably the additional truck movements. The Project is known as the Gunlake Quarry Continuation Project (the 'Continuation Project'). The ignimbrite hard-rock resource will continue to be extracted and processed using the methods currently employed at the Quarry.

The Continuation Project is classified as a State Significant Development (SSD) under Schedule 1, Clause 7 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). This report accompanies a new SSD application and environmental impact statement (EIS) for the Continuation Project.

1.2 Assessment approach and requirements

This SIA report accompanies a new State significant development (SSD) application and environmental impact statement (EIS) for the Continuation Project. It documents the SIA assessment methods and results; the initiatives built into the Continuation Project to avoid and minimise associated impacts to the local community; and the mitigation and management measures proposed to address any residual impacts that are not able to be avoided.

This SIA addresses the social impacts and benefits of the Continuation Project to the local region and to NSW. It considers whether the Continuation Project will increase the demand for community infrastructure and services. The specific objectives of this assessment are to:

- describe the existing social conditions and demographic profile;
- identify and assess the extent and nature of potential social risks;
- evaluate the significance of the social impacts, positive and negative arising from the Continuation Project;
- provide mitigation measures to reduce the negative social impacts and enhancement measures for significant positive impacts; and
- develop a monitoring and management framework.

This SIA has been prepared in accordance with the Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development (SIA Guideline 2017) (DPE 2017a) and has been informed by the Social Impact Assessment Guideline for State Significant Projects (SIA Guideline 2021) (DPIE 2021a).

The SIA was prepared in accordance with the requirements of the Planning Secretary’s Environmental Assessment Requirements (SEARs) for the Continuation Project, issued on 6 May 2021. The SEARs identify matters which must be addressed in the EIS. The individual requirements relevant to this SIA and where they are addressed in this report are provided in Table 1.1.

Table 1.1 SEARs relating to social impact assessment

Assessment requirement from SEARs	Section of report where addressed
A detailed assessment of the potential social impacts of the development that builds on the findings of the Social Impact Assessment Scoping Report, in accordance with the <i>Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development</i> paying particular consideration to:	
<ul style="list-style-type: none"> how the development might affect people’s way of life, community, access to and use of infrastructure, services and facilities, culture, health and wellbeing, surrounding, personal and property rights, decision-making systems, and fears and aspirations; 	Sections 8 and 9
<ul style="list-style-type: none"> the principles in Section 1.3 of the guideline; and 	Section 3
<ul style="list-style-type: none"> the review questions in Appendix D of the guideline. 	Appendix D
That further investigation be undertaken in relation to the cumulative impact of an expanded State Significant-scale development will have on the Marulan and its surrounding district, and that any findings be presented as part of the Social Impact Assessment.	Section 9

1.2.1 Authorship and declarations

This report has been prepared by a suitably qualified and experienced lead author and reviewed and approved by a suitably qualified and experienced co-author. Both hold appropriate qualifications and have the relevant experience to carry out the SIA for this Project.

Amanda Micallef (lead author)

- Master of Development Practice, The University of Queensland;
- Bachelor of Arts in International Development, University of Guelph; and
- Member Planning Institute of Australia.

Amanda is a Social Scientist/Social Planner with experience in social research, community and stakeholder engagement, and working with clients within the mining and extractive industries across Australia. Amanda has conducted a range of social planning and impact assessment projects, including baseline studies, risk assessments, social data collection, data analysis, and community and stakeholder engagement. Her community engagement experience includes online community engagement, indigenous engagement, and the co-creation of youth indigenous development programs internationally. Amanda has worked with clients across a range of sectors, including mining and extractives, critical infrastructure, and alternative energies in New South Wales, Queensland, and Victoria.

Andrea Kanaris (review and quality assurance)

- Masters Social Planning and Development (Post Graduate Diploma), University of Queensland;
- Bachelor of Social Science – Community and International Development, University of Queensland;
- Former Chair and Full Member Social Planning Chapter Queensland – Planning Institute Australia; and
- Member International Association of Impact Assessment.

Andrea is a Social Scientist/Social Planner with over 20 years’ experience across corporate and government sectors. Andrea has broad expertise providing government and corporate stakeholders advice on policy, program management, quality assurance, planning, sustainability, and stakeholder engagement. She provides contemporary strategic advice on social impact assessment, and has led, and delivered policies and achieved quality stakeholder engagement outcomes.

Curricula vitae are provided in Appendix C.

i [The curriculum vitae for each author is provided in Appendix C. Declarations](#)

The authors declare that this SIA report:

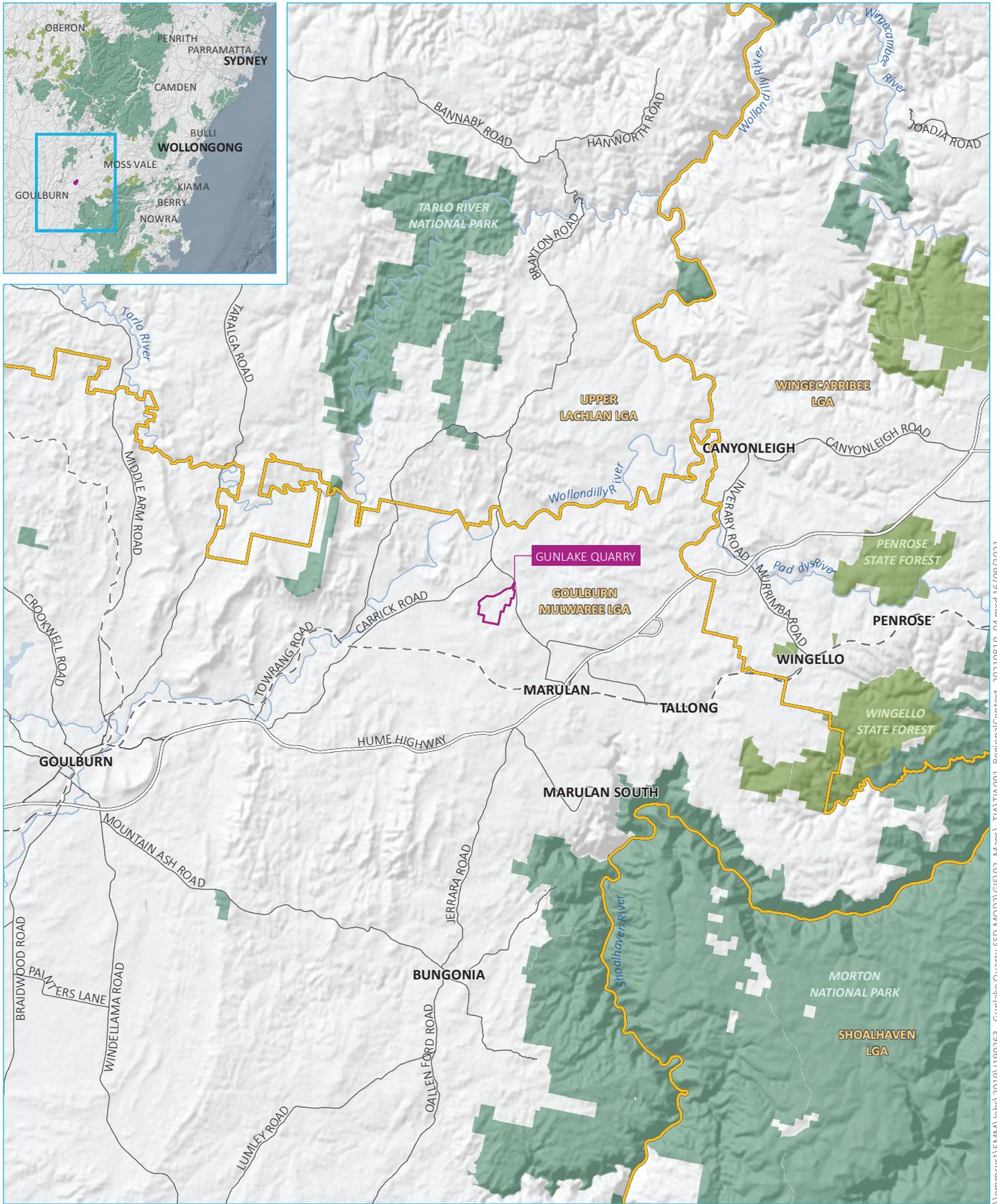
- was completed on 17 September 2021;
- has been prepared in accordance with the EIS process under the *Environmental Planning and Assessment Act 1979* (EP&A Act);
- has been prepared in accordance with the SIA Guideline 2017 and informed by the SIA Guideline 2021;
- contains all reasonably available Project information relevant to the SIA; and
- as far as EMM Consulting Pty Limited (EMM) is aware, contains information that is neither false nor misleading.



Amanda Micallef
Social Planner
17 September 2021



Andrea Kanaris
Associate, SIA National Technical Leader
17 September 2021



Source: EMM (2021); DFSI (2017); GA (2011); ASGC (2006)



- KEY**
- Site boundary
 - Local government area
 - Rail line
 - Highway
 - Major road
 - River
 - Waterbody
 - NPWS reserve
 - State forest

Regional context

Gunlake Quarry Continuation Project
Social Impact Assessment
Figure 1.1



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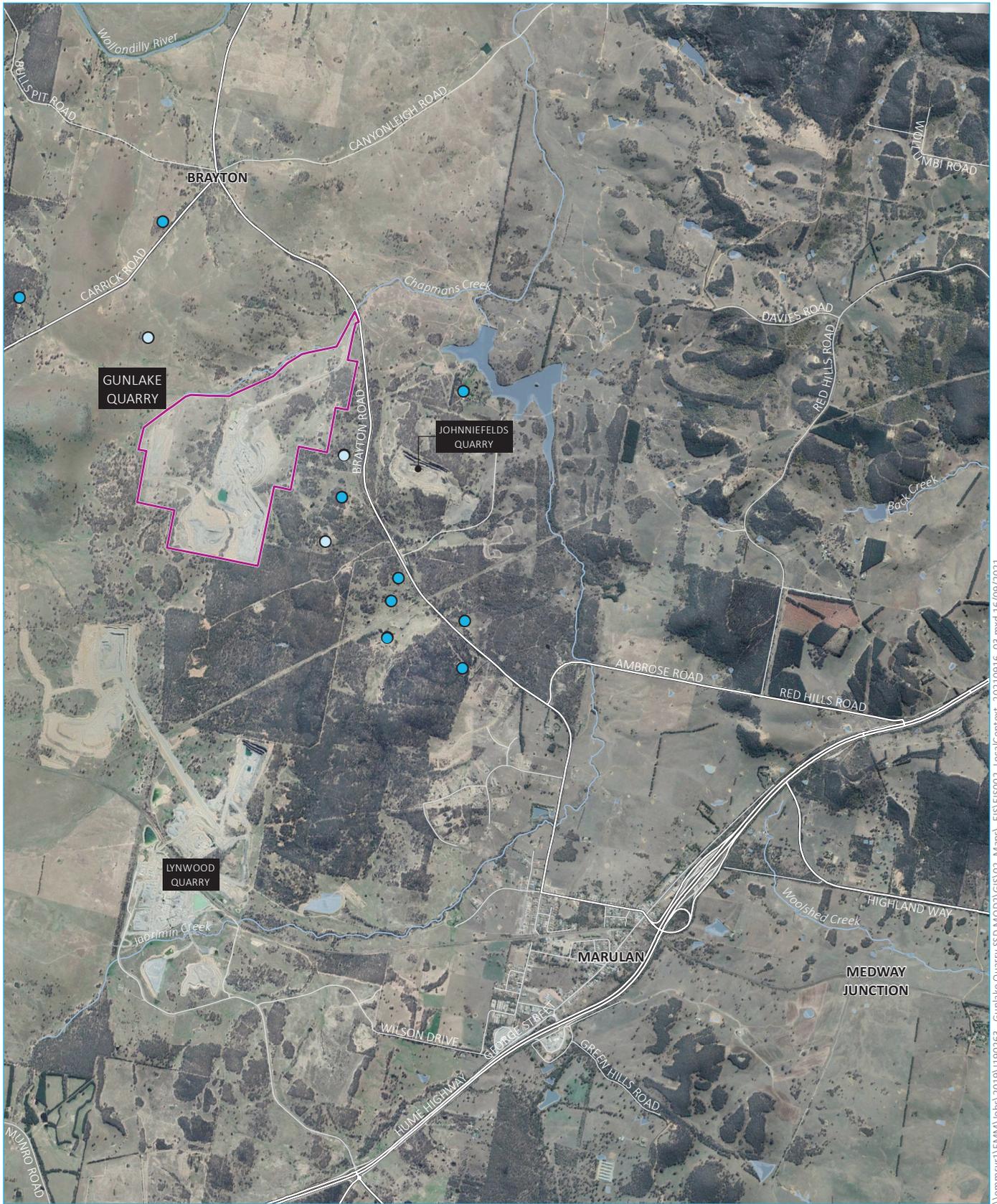
2 Project description

2.1 The site

The Quarry is located wholly on Lot 13 DP 1123374 (the 'Quarry site', Figure 2.1). There are biodiversity management areas in Lot 13 DP1123374, Lot 12 DP1123374, Lot 271 DP750053 and Lot 1 DP841147. These lots are owned by Gunlake Quarries Pty Ltd.

The land surrounding the Quarry is rural with low population density, predominately used for agriculture, generally grazing. Built features immediately surrounding the Quarry include dams, access tracks and fences. There are a small number of residences around the Quarry (Figure 2.1). The nearest town is Marulan, about 7 km south-east of the site boundary.

Operational quarries in the local area include: Lynwood Quarry; Peppertree Quarry; Marulan South Limestone Mine; Divall's Quarry; and Ardmore Park Quarry.



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- KEY**
- Site boundary
 - Residence
 - Owned by Gunlake
 - Major road
 - Minor road
 - Named watercourse
 - Waterbody



Local context

Gunlake Quarry Continuation Project
Social Impact Assessment
Figure 2.1



2.2 Continuation Project description

Gunlake seeks a new development approval for the Continuation Project that allows:

- ongoing Quarry operations;
- a maximum of 375 inbound and 375 outbound daily truck movements with no more than 4.2 million tonnes per annum (Mtpa) of Quarry products transported from the site in any calendar year.
- 24-hours Quarry operations Monday to Saturday, except 6 pm Saturday to 2 am Monday;
- an extraction depth of 546 metres Australian High Datum (mAHD); and
- a 30-year Quarry life (from the date of Continuation Project approval).

A summary of the key elements of the approved Extension Project compared to the Continuation Project is provided in Table 2.1.

Table 2.1 Extension Project compared to the Continuation Project

Project element	Approved Extension Project	Proposed Continuation Project
Extraction method	Blasting and excavation.	Blasting and excavation.
Resource	Ignimbrite hard-rock.	Ignimbrite hard-rock.
Extraction	Quarry pit - pit depth of 572 mAHD.	Quarry pit - pit depth of 546 mAHD (ie 26 m deeper than the Extension Project). No change to pit disturbance area.
Operations	Onsite rock processing, including crushing and screening.	Onsite rock processing, including crushing and screening.
Product transport	Transport of up to 2.6 million tonnes per annum (Mtpa) of Quarry products. Truck movements limited to: <ul style="list-style-type: none"> • an average of 220 inbound movements and 220 outbound movements, including no more than 25 outbound movements on the Secondary Transport Route, per working day (averaged over the working days in each quarter); and • a maximum of 295 inbound movements and 295 outbound movements, including no more than 38 outbound truck movements on the Secondary Transport Route, per working day. 	Transport of up to 4.2 Mtpa of Quarry products. Truck movements limited to: <ul style="list-style-type: none"> • a maximum of 375 inbound movements and 375 outbound movements, including no more than 38 outbound laden movements on the Secondary Transport Route, per working day; • an average of no more than 25 outbound movements on the Secondary Transport Route, per working day (averaged over the working days in each quarter).
General infrastructure	Offices, amenity buildings, processing plant and other minor infrastructure.	Offices, amenity buildings, processing plant and other minor infrastructure.

Table 2.1 Extension Project compared to the Continuation Project

Project element	Approved Extension Project	Proposed Continuation Project
Management of wastes	Overburden ¹ is emplaced in designated emplacement areas. Receipt of up to 30,000 tonnes of cured concrete per calendar year for beneficial reuse/recycling. No other classified waste materials to be received on site.	Overburden is emplaced in designated emplacement areas. Receipt of up to 50,000 tonnes of cured concrete per calendar year for beneficial reuse/recycling. No other classified waste materials to be received on site.
Hours of operation	24-hours Quarry operations Monday to Saturday, except 6 pm Saturday to 2 am Monday.	24-hours Quarry operations Monday to Saturday, except 6 pm Saturday to 2 am Monday.
Blasting	Up to twice weekly, 9 am to 5 pm Monday to Friday.	Up to twice weekly, 9 am to 5 pm Monday to Friday.
Quarry life	To 30 June 2042.	Extension of the Quarry life to 30 years from the date of approval.

Further information on the project is available in the Continuation Project EIS.

2.3 Product transport

2.3.1 Transport routes

All saleable products are transported from the Quarry to markets by truck. The Continuation Project will continue to use the currently approved Primary and Secondary Transport Routes.

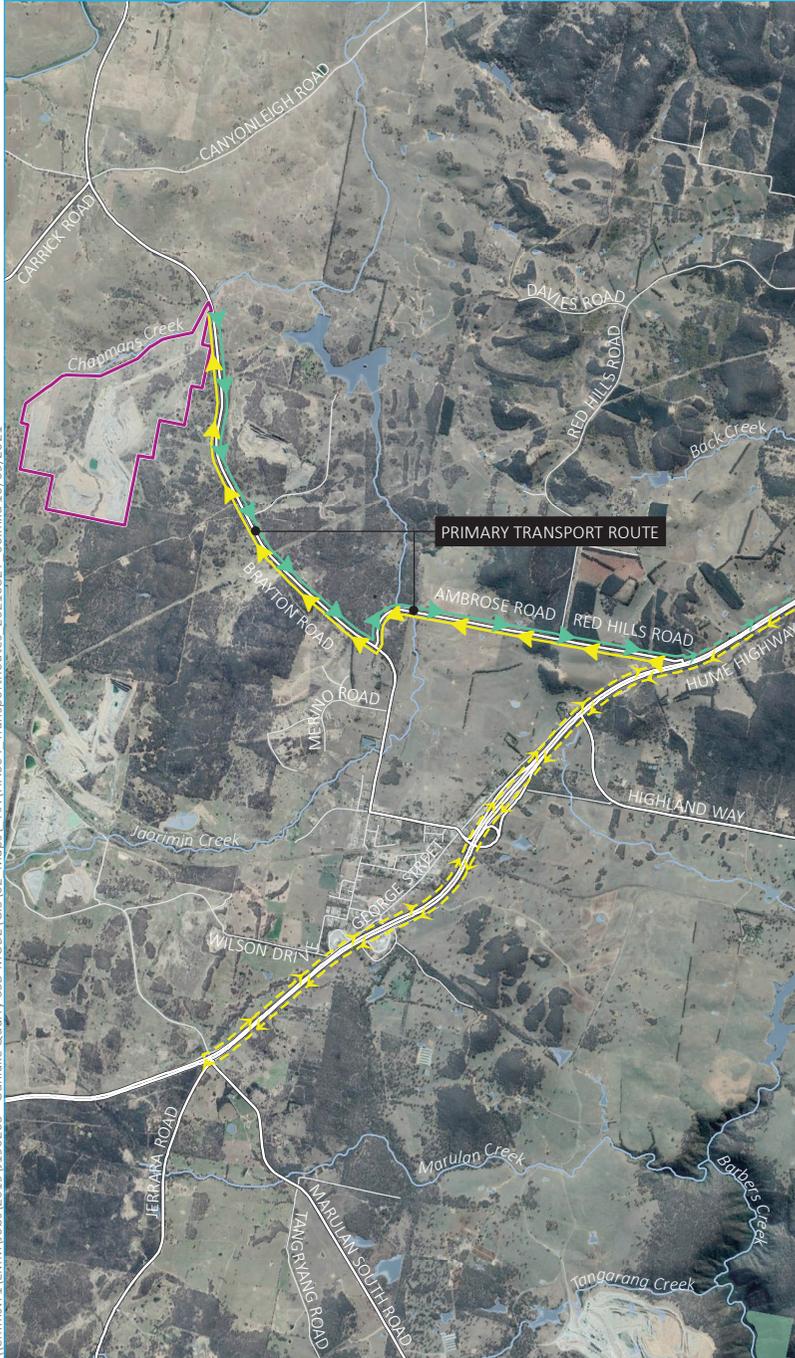
Trucks delivering Quarry products to markets to the north and returning from these destinations use the Primary Transport Route (Figure 2.2). The Primary Transport Route consists of the following roads:

- Brayton Road (classified as a collector road) between Ambrose Road and the Gunlake Quarry access road;
- Ambrose Road between Brayton Road and Red Hills Road; and
- Red Hills Road between Ambrose Road and the Hume Highway.

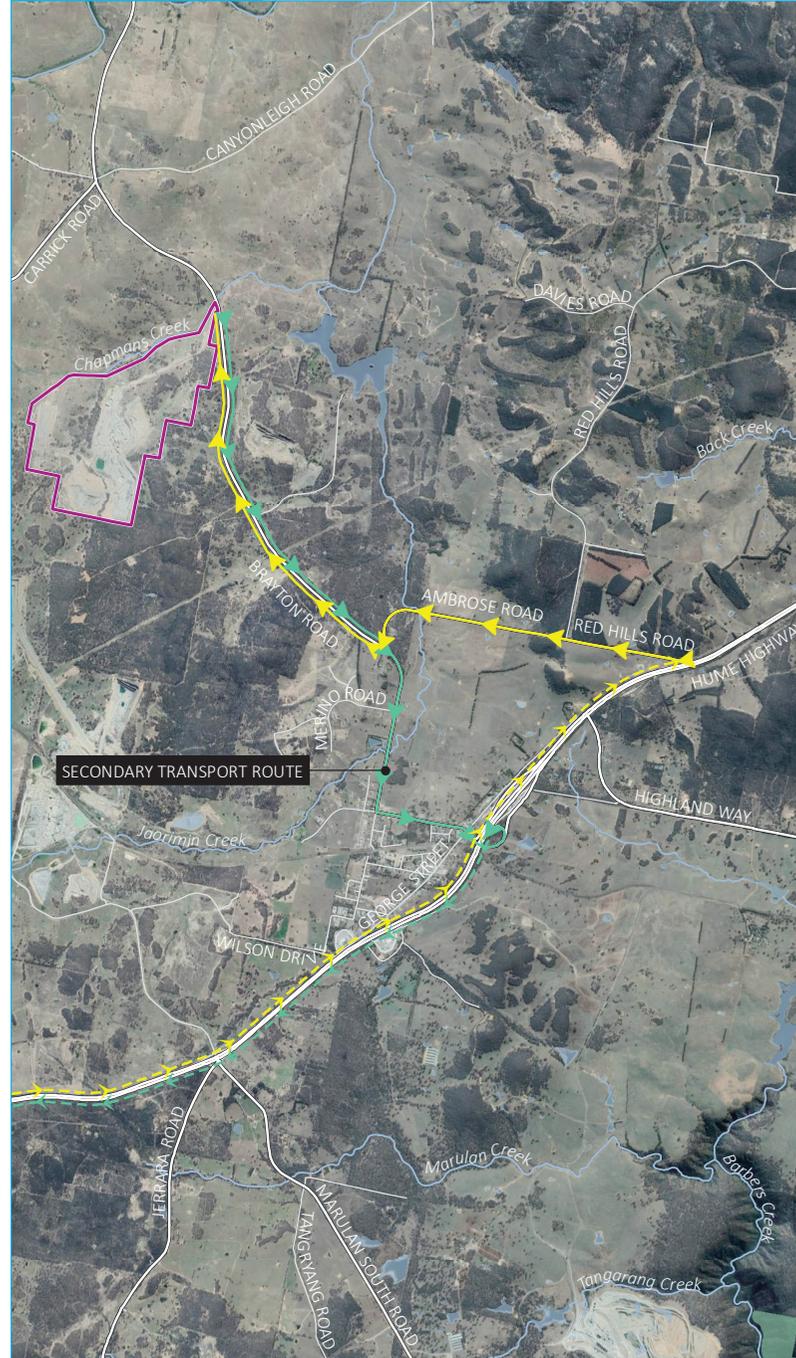
The Secondary Transport Route is only used by outbound trucks travelling to markets south of the Quarry. The Secondary Transport Route consists of Brayton Road between the Quarry access road and the Hume Highway's southbound access ramp at Marulan. Gunlake currently has approval for a daily average of 25 outbound Quarry product truck movements, and a daily maximum of 38 outbound Quarry product trucks movements on this route. It is not proposed to change the number of trucks that are allowed to use the Secondary Transport Route.

¹ 'Overburden': any extracted unsalable material.

PRIMARY TRANSPORT ROUTE



SECONDARY TRANSPORT ROUTE



- KEY
- Site boundary
 - ➔ Inbound transport route
 - ➔ Inbound transport route (highway)
 - ➔ Outbound transport route
 - ➔ Outbound transport route (highway)
 - Major road
 - Minor road
 - Named watercourse
 - Waterbody
 - NPWS reserve

Source: EMM (2021); Google Earth (2019); DFSI (2017); GA (2011)

Transport routes

Gunlake Quarry Continuation Project
Social Impact Assessment
Figure 2.2



2.3.2 Vehicle movements

The Continuation Project will transport no more than 4.2 Mtpa of Quarry products transported from the site in any calendar year.

Under the Continuation Project it is proposed to limit daily saleable product truck movements to a maximum of 375 inbound and 375 outbound movements.

Gunlake currently has approval for a daily average of 25 outbound Quarry product truck movements, and a daily maximum of 38 outbound Quarry product trucks movements on the Secondary Transport Route. It is not proposed to change the number of trucks that are allowed to use the Secondary Transport Route.

There are also a small number of transport movements associated with employee travel, fuel deliveries and service vehicles.

3 Methodology

The scope of this social impact assessment (SIA) has been developed in accordance with the:

- SEARs issued by the DPIE;
- social characteristics and community values of the local area and regional area; and
- SIA Guideline 2017 (DPE 2017).

It has been informed by the SIA Guideline 2021 (DPIE 2021).

The assessment of social impacts was conducted using the SIA Guideline (DPE 2017) definition of social impacts which refers to potential changes to people's:

- **way of life:** how people live, work, play and interact;
- **community:** its composition, cohesion, character, how it operates and sense of place;
- **access to and use of infrastructure, services and facilities:** provided by all levels of government, not-for-profit organisations, or volunteers;
- **culture:** shared beliefs, customs, values and stories, and connection to land, places and buildings;
- **health and well-being:** physical and mental health;
- **surroundings:** access to and use of ecosystem, public safety and security, access to and use of natural and built environment, aesthetic value and/or amenity;
- **person and property rights:** economic livelihoods, personal disadvantage or civil liberties;
- **decision-making systems:** extent community can have a say in decisions that affect their lives, access to complaint, remedy and grievance mechanisms; and
- **fears and aspirations:** combination of above, or about future of their community.

This SIA has been informed by best practice guidance and standards set out by the International Association for Impact Assessment (IAIA) and International Finance Corporation (IFC).

3.1 Area of social influence

This SIA addresses the social impacts and benefits of the Continuation Project to the local area, the region, and to NSW. It considers whether the Continuation Project will increase the demand for community infrastructure and services.

The 'area of social influence' is described in Chapter 5. Defining the area of social influence was informed by the following factors:

- supply chains;
- haulage of products;

- transport of goods, materials and equipment;
- the movement of workers;
- the scale and nature of the Continuation Project and its associated activities;
- people that may be affected by the Continuation Project;
- potentially affected built or natural features located identified as having social value or importance;
- relevant social trends and social change processes being experienced by local communities; and
- the history and background of the Continuation Project and how local communities have experienced the Gunlake Quarry and other quarrying operations and mines to date.

3.2 Potentially affected communities

Key considerations for identifying potentially affected communities are the risk of social impacts (negative and positive) as a consequence of the Continuation Project. Factors considered in defining the SIA scope included:

- proximity of properties and communities to the Continuation Project and its transport routes;
- the role, culture and identity of communities in the region;
- availability, and capacity of, housing and other social infrastructure to attract and support potential growth;
- availability of skilled workforce and experienced personnel, or ability of residents to gain the skills required for the quarrying industry;
- native title rights and other interests held by Aboriginal and/or Torres Strait Islander groups;
- location of businesses who could supply the Continuation Project;
- vulnerabilities that increase risk, and/or magnitude of potential impacts on communities or groups from the Continuation Project;
- communities and vulnerable groups potentially affected by other projects within the region; and
- likelihood of social impacts and opportunities for each of the localities assessed.

3.3 Methodological approach

The phases of the SIA methodology are described in Figure 3.1. This report comprises Phase 2 which will be placed on public exhibition where submissions are received during Phase 3.

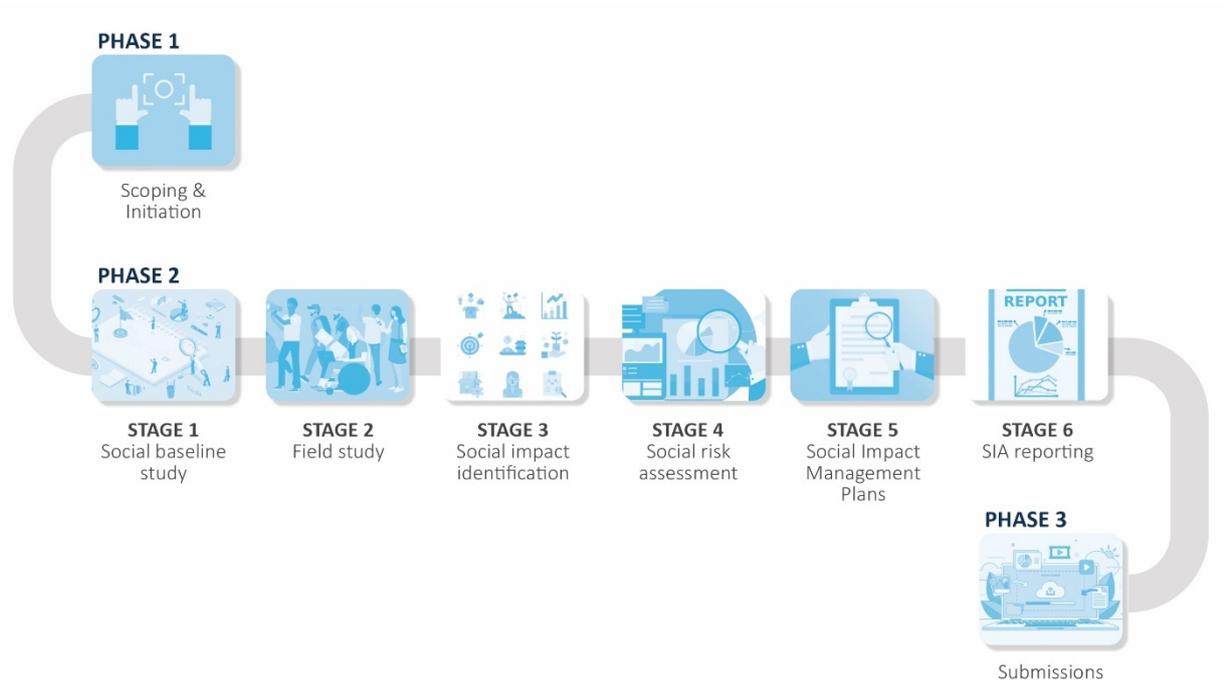


Figure 3.1 Phases of the SIA methodology

i Phase 1

Scoping and initiation

A scoping report for the Continuation Project was prepared by EMM on behalf of Gunlake and submitted to DPIE on 18 December 2020. The report committed Gunlake to facilitate the preparation of the SIA in accordance with the SIA Guideline 2017 (DPE 2017).

The SIA Guideline 2017 requires that the applicant identify and understand the Continuation Project’s area of social influence. As such, a demographic profile was developed through stakeholder consultation and the area of social influence was identified during the scoping phase and proposed in the scoping report submitted to DPIE in Phase 1.

ii Phase 2

Stage 1 – Social baseline study

Understanding the existing social environment and identifying trends relevant to potential social impacts was the first step in the preparation of the SIA. A social baseline study was prepared using existing demographic, health, housing, and socio-economic data from the Australian Bureau of Statistics (ABS), government agencies, and local government; published literature and social research; government policies and plans; and documents relating to similar resource projects. The social baseline study:

- provides a community profile, including a socio-economic profile of the area of social influence;
- provides an analysis of the social infrastructure and capacity within the area of social influence; and
- reviews relevant government strategic policies and plans.

The social baseline study provides the benchmark against which potential social impacts are identified and assessed and informs subsequent stages. The baseline study is presented in Appendix A

Stage 2 – Field study

Key engagement objectives set out in the SIA Guideline 2017 include:

- “understanding the interests that potentially affected and interested people have in the project; and how potential impacts are predicted to be experienced from their perspectives”; and
- “considering the views of potentially affected and interested people in a meaningful way, and using these insights to inform project planning and design, mitigation and enhancement measures, and monitoring and management frameworks”.

Due to the COVID-19 pandemic, social distancing requirements were enforced during all SIA field study activities and engagement activities. The specific methods and outcomes of the community engagement and SIA field studies are presented Section 6.

Community consultation used social research methods, which included in-depth interviews to collect qualitative and quantitative data to:

- validate baseline data and assumptions;
- identify/test impacts that may be experienced by nearby neighbours and the broader community;
- confirm identified impacts and determine potential management strategies; and
- provide communities with opportunities to express their concerns.

Gunlake will continue to ensure there are opportunities for community members to comment on the Continuation Project as it progresses through the approvals process.

Stage 3 – Social impact identification

With a clear understanding of the scope of the Continuation Project, social baseline, and input from the field study, suitably qualified social scientists (see Appendix C) identified the Continuation Project’s potential social impacts. This analysis informed the socio-economic risk assessment (Stage 4).

The identification of the Continuation Project’s potential social impacts and benefits was completed through several different complementary approaches, helping to triangulate the findings and confirm their accuracy. These approaches included:

- Consideration of environmental constraints – review of previously identified environmental impacts created by the Continuation Project and other similar projects in the local area as well as available literature to identify potential impacts.
- Consideration of field findings – findings from SIA field studies contributed to the identification of potential impacts and benefits from the Continuation Project. Field studies were also be used to identify opportunities.
- Consideration of technical reports – findings from other technical disciplines that contributed to the EIS were reviewed and potential social impacts identified.
- Consideration of cumulative impacts – review of documentation from other existing projects in the area of social influence.

- Consideration of local plans and policies – findings from the review aided to contextualise and understand the local priorities as well as to identify local values.

Stage 4 – Social risk assessment

The social risk assessment stage assessed each of the social impacts identified to predict the nature and scale of potential social impacts for the life of the Continuation Project and post closure. A social risk assessment workshop to consider all identified potential social impacts was conducted on 28 July 2021 where all members of the SIA technical team (see Section 1.2.1) participated. A social risk approach was adopted to assess the consequence and likelihood of potential positive and negative social impacts with and without mitigation. The social risk assessment matrix, including the assessment framework, used for the assessment is provided in Appendix B. The assessment framework is summarised in Section 8.

Stage 5 – Social impact mitigation and management

A mitigation and management framework was prepared with consideration of all potential social impacts and benefits to allow for the identification of:

- required impact mitigation measures;
- enhancement measures to maximise the potential benefits; and
- partnership opportunities.

Findings from Stages 1–5 were used to distil and analyse recommendations for the SIA report. This stage used a multidisciplinary approach lead by EMM’s social scientists supported by environmental advisers.

Stage 6 – SIA reporting

Development of this SIA technical report and internal peer review were conducted by EMM’s social scientists and environmental scientists.

4 Political and planning context

This section provides a summary of the relevant plans and strategies across the Goulburn Mulwaree Local Government Area (LGA) area that inform the social risk assessment and mitigation and management strategies.

4.1 Commonwealth

The Continuation Project is located within the federal electorate of Hume, which is currently represented (in the House of Representatives) by the Hon Angus Taylor MP, member of the Liberal Party. The Hon Angus Taylor MP is the Commonwealth Minister for Energy and Emissions Reduction, responsible for the coordination and implementation of sustainable energy policies for the Australian Government.

The recognition, protection, and conservation of cultural heritage sites and protected areas fall under the *Environmental Protection and Biodiversity Conservation Act 1999* administered by the Department of Agriculture, Water.

There are no specific Commonwealth legislative or regulatory instruments that directly impact on the social impact assessment for the Continuation Project, however, the release of the *Keep it in the Regions Report* (Parliament of Australia 2018) in November 2018 is relevant. The report recommends measures aimed at increasing the economic benefit local communities receive from resources projects near their community, including:

- targets for minimum levels of *true local* procurement, based on the specific circumstances of the region and the project, including regional business capability;
- the development of accessible guidance materials for use by local councils and land councils in mining regions; and
- review of mechanisms in place to support regional small and medium enterprises and locally-based businesses of any size to engage with the mining sector.

4.2 State

The NSW Parliament consists of a Legislative Assembly (lower house) and Legislative Council (upper house). The Continuation Project is within the NSW State electorate of Goulburn. The current member for Goulburn is Wendy Tuckerman MP of the Liberal Party.

There are a number of State Acts and Regulations which concern the recognition, protection and conservation of cultural heritage sites and protected areas. These include the EP&A Act, *Biodiversity Conservation Act 2016*, *National Parks and Wildlife Act 1974*, *Protection of the Environment Operations Act 1997*, *Heritage Act 1977*, and the *National Parks and Wildlife Regulation 2009*.

DPIE is responsible for administering the EP&A Act and its subordinate legislation and policies.

4.2.1 State strategies

i A 20-Year Economic Vision for Regional NSW, 2018–2038

A 20-Year Economic Vision for Regional NSW 2018–2038 (NSW Government 2018) presents a strategy for Regional NSW that encourages its role as a vibrant and growing part of the NSW economy, and fosters decisions to live in the regions. The vision is organised into five sections that form a pathway to a prosperous Regional NSW. The provides:

- a snapshot of Regional NSW today that presents the current economic and demographic environment, with reference to the thriving agricultural, energy and resources industries, and strong manufacturing, tourism, and services sectors;
- a description of the global forces shaping regional economies, and the implications of these trends;
- means to rise to economic challenges, such as investing in infrastructure, skills, advocacy and promotion, and the business environment;
- a presentation of a bright future for Regional NSW that highlights growth in key sectors, increased regional populations, and supporting infrastructure and services; and
- the current priorities for the NSW Government.

ii Building Momentum: State Infrastructure Strategy, 2018–2038

The *State Infrastructure Strategy 2018–2038* (Infrastructure NSW 2018) sets out Infrastructure NSW's independent advice on the current state of NSW infrastructure, and the infrastructure needs and priorities over the next 20 years. It looks beyond current projects and identifies policies and strategies needed to provide infrastructure to meet the needs of a growing population and economy.

The strategy provides:

- strategic directions: six cross-sectoral strategic directions are incorporated into the strategy to ensure good-practice across infrastructure sectors and throughout infrastructure lifecycles;
- geographic infrastructure directions: the strategy recognises the different opportunities and needs experienced within NSW, Regional NSW, and Greater Sydney and Outer Metro, and outlines geographic-specific approaches for infrastructure planning, investment, and policy; and
- sectors: using the strategic and geographic infrastructure directions, policy and investment strategies are outlined across key infrastructure sectors (ie transport, energy, water, health, education, justice, culture, sport, and tourism).

The State Infrastructure Strategy identifies extractive industries as a key industry in several regions across NSW. Strategic objectives are presented for infrastructure that supports the industry, particularly water and transportation, to ensure its continued economic viability.

iii The South East and Tablelands Regional Plan, 2036

The *South East and Tablelands Regional Plan* (the Regional Plan) (DPE 2017) guides land use planning priorities and decision making in the South East and Tablelands Region over the next two decades. The Regional Plan provides an overarching framework to guide local land use plans, development proposals and infrastructure funding decisions. The implementation component of the Regional Plan includes priority actions and medium-long term actions.

The four key goals for the region as outlined in the Regional Plan are:

1. a connected and prosperous economy;
2. a diverse environment interconnected by biodiversity corridors;
3. healthy and connected communities; and
4. environmentally sustainable housing choices.

The Continuation Project directly and indirectly supports the achievement of these four goals. The Continuation Project is consistent with Goal 1, as it will ensure the continued contribution of quarrying to the prosperity of local economic development and employment in Marulan, Goulburn and surrounding towns. The Quarry will continue to supply locally sourced and financially competitive quarry products to meet current requirements and to meet forecast development across the region. The Regional Plan sets a number of 'directions' for each goal. The Continuation Project is consistent with Direction 13, 'manage the ongoing use of mineral resources'. The Regional Plan also includes priorities for individual councils to guide further investigation and implementation. Priorities for Goulburn Mulwaree include:

- build capacity and self-sufficiency to create a resilient community;
- support the resources, transport, health care and tourism sectors to facilitate employment and economic growth;
- and grow existing businesses by establishing network and providing information to business owners and business groups.

The Continuation Project will contribute to these priorities through the continued employment of the existing Quarry workforce and local trucking and maintenance contractors, providing additional employment opportunities, and supporting use of local goods and services through industry procurement and spending at local establishments.

4.2.2 State guidelines

i SIA Guideline 2017

The SIA Guideline 2017 provides direction on assessing impacts arising from State significant resources projects in the context of the environmental impact assessment (EIA) process under the EP&A Act. In this guideline, SIA is the process of identifying, predicting, evaluating and developing responses to the social impacts of a proposed State significant resource project. The SIA Guideline 2017 requires proportionate and tailored assessment based on the project's context, and the nature and scale of its potential impacts and benefits.

The objectives of SIA Guideline 2017 are to:

- provide a clear, consistent and rigorous framework for identifying, predicting, evaluating and responding to the social impacts of State significant resource projects, as part of the overall EIA process;
- facilitate improved project planning and design through earlier identification of potential social impacts;
- promote better development outcomes through a focus on minimising negative social impacts and enhancing positive social impacts;
- support informed decision-making by strengthening the quality and relevance of information and analysis provided to the consent authority;

- facilitate meaningful, respectful and effective community and stakeholder engagement on social impacts across each EIA phase, from scoping to post-approval; and
- ensure that the potential social impacts of approved projects are managed in a transparent and accountable way over the project life cycle through conditions of consent and monitoring and reporting requirements.

ii [SIA Guideline 2021](#)

The SIA Guideline 2021 requires that all State significant projects have a clear and consistent approach to assessing social impacts. The SIA Guideline 2021 builds upon the SIA Guideline 2017 which applied to State significant resource projects. The SIA Guideline 2021 aims to:

- build higher levels of community understanding of projects;
- help proponents to understand what is required to meet the department's expectations;
- give stakeholders and the community confidence that their concerns and perspectives are being considered early in the assessment;
- reduce project risks and costs related to unplanned or reactive management of social impacts;
- create better proponent-community relations and more socially sustainable outcomes;
- streamline assessments by reducing departmental requests for more information; and
- better integrate the SIA and Environmental Impact Assessment (DPIE 2021a).

iii [Undertaking Engagement Guidelines for State Significant Projects \(Undertaking Engagement Guidelines 2021\)](#)

The Undertaking Engagement Guidelines 2021 describes the requirements for effective engagement on State significant projects in NSW. The Undertaking Engagement Guidelines 2021 outline the actions the DPIE will take, identifies opportunities for community participation, and outlines requirements for proponents. It emphasises early planning and engagement, effective engagement, proportionate engagement, innovation, and transparency. The primary audience of this guideline is proponents and their teams, who are responsible for engaging with the community and other stakeholders during each phase of the environmental assessment. These guidelines also provide the community and other stakeholders with a better understanding of how, when and on what they can provide feedback, and how it will be addressed by proponents and decision-makers.

The Undertaking Engagement Guidelines 2021 outlines specific requirements for engagement for all phases of the planning approvals process, including:

- scoping of the EIS;
- preparation of the EIS;
- EIS exhibition and responding to submissions;
- assessment and determination;
- post-approval; and
- during modifications.

4.3 Local

The Continuation Project is in Goulburn Mulwaree LGA which has the highest proportion of directly impacted stakeholders. A summary of the relevant Mayors and Councillors (Cr) is provided in Table 4.1.

Table 4.1 Goulburn Mulwaree Councillors, 2020

Role	Councillors	
Mayor	Cr Bob Kirk	
Deputy Mayor	Cr Peter Walker	
Councillors	Cr Alfie Walker	Cr Andrew Banfield
	Cr Carol James	Cr Denzil Sturgiss
	Cr Leah Ferrara	Cr Margaret O’Neill
	Cr Sam Rowland	

The Goulburn Mulwaree Council has regional and strategic plans that articulate their vision for the future of their community. These are summarised in Table 4.2.

Table 4.2 Regional planning context

Plan/Strategy	Summary	Responsibility	Timeframe
<i>Local Strategic Planning Statement (LSPS)</i> (Goulburn Mulwaree Council 2020a)	The Planning Statement is a 20-year vision for land-use in the Goulburn Mulwaree area including visions, objectives, and planning priorities to achieve the broader goals of the community. The LSPS works with the <i>Tablelands Regional Community Strategic Plan 2016–2036 (CSP)</i> towards all Council planning activities achieving the community’s long-term vision and aspirations. It includes 10 planning priorities with short-, medium-, and long-term goals designed to preserve heritage, character, environment, and space; while continuing to grow and building upon services and facilities the community desires.	Goulburn Mulwaree Council	2020–2040
<i>Goulburn Mulwaree Local Environmental Plan 2009 (LEP)</i> (Goulburn Mulwaree Council 2020a)	The LEP outlines zoning and land use planning regulations, and development standards.	Goulburn Mulwaree Council	2009–present
<i>Community Participation Plan (CPP)</i> (Goulburn Mulwaree Council 2020a)	The CPP outlines how the community can participate in the planning and approvals system, designed to make participating in planning matters simpler for community members. The “... [Goulburn Mulwaree] Council recognises that community participation is an integral part of making transparent and well-informed planning decisions”.	Goulburn Mulwaree Council	2019–present

Table 4.2 Regional planning context

Plan/Strategy	Summary	Responsibility	Timeframe
<i>The Tablelands Regional Community Strategic Plan 2016–2036 (CSP)</i> (Cardno 2016)	The CSP encompasses Goulburn Mulwaree Council, Upper Lachlan Shire Council, and Yass Valley Council. The CSP is a joint venture between the three councils, based on consultation with each areas’ communities. The CSP identifies priorities and expectations of the communities for the next 20 years and outlines plans and strategies to achieve them.	Goulburn Mulwaree Council, Upper Lachlan Shire Council, Yass Valley Council	2016–2036
<i>Community Engagement Strategy & Communications Plan (CESCP)</i> (Cardno 2017)	The CESCP is a follow up document from the CSP which outlines the engagement strategy developed “... to allow Council staff, Councillors, key stakeholders, and community members to be active participants in the development of an innovative Regional CSP in line with the NSW [Integrated Planning and Reporting Framework]” (Cardno 2017).	Goulburn Mulwaree Council, Upper Lachlan Shire Council, Yass Valley Council	

5 Social baseline

This chapter identifies the area of social influence where the Continuation Project may contribute to social impacts and provides a summary of the baseline information and key social conditions. The complete baseline study that forms the basis for this SIA is provided in Appendix A.

5.1 Area of social influence

The Continuation Project is located within the Brayton State Suburb Classification (SSC) area, is 7 km from the Marulan township and adjacent to the Carrick SSC. These suburbs are likely to experience the most direct impacts of the Continuation Project. Some direct and indirect social impacts may be experienced regionally. As such, the Continuation Project is considered to have two key areas of social influence: a local area and regional area.

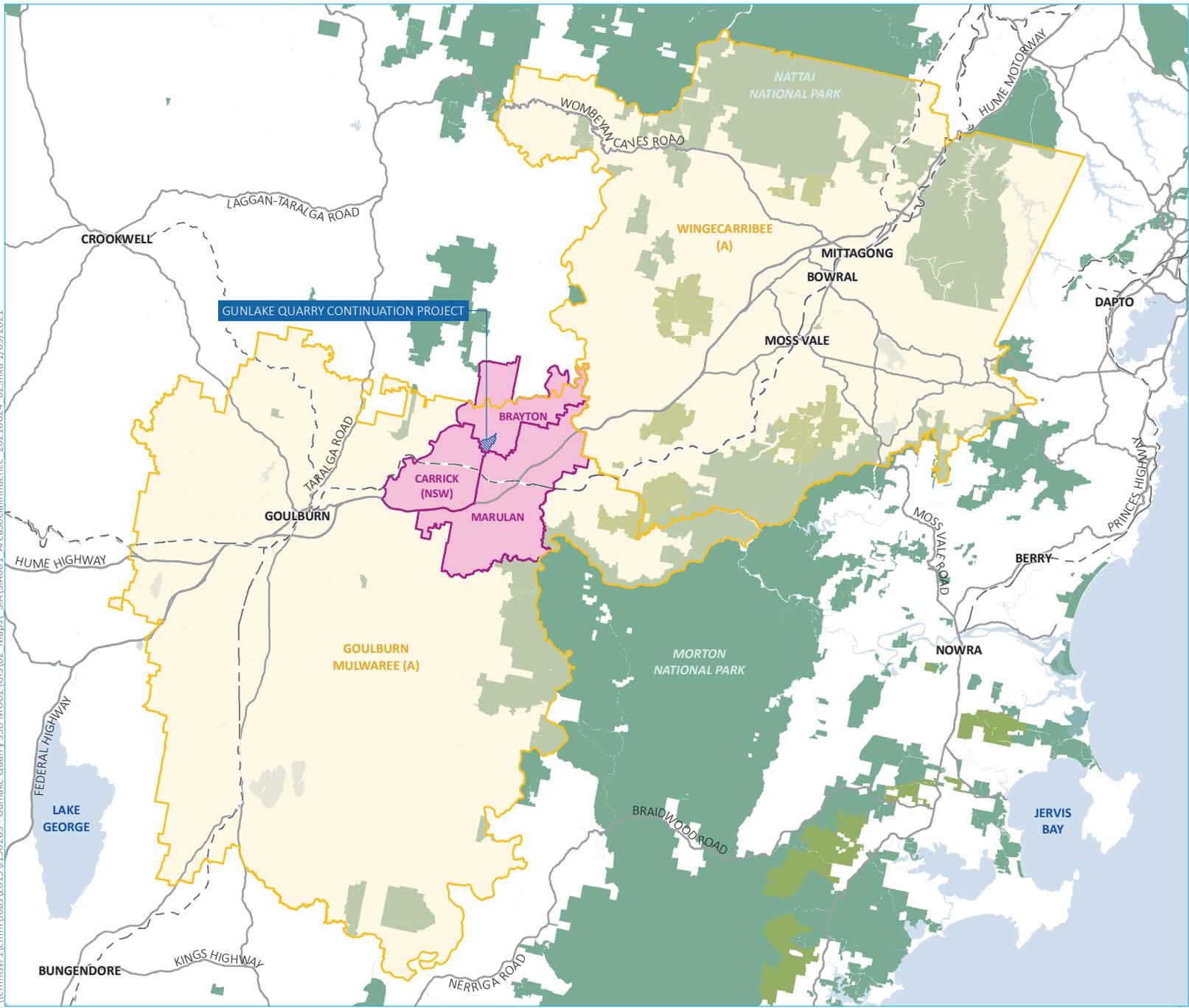
Potential direct and indirect social impacts (ie those related to local social infrastructure and services, workforce, business and industry, housing and accommodation, and community health and wellbeing) of the Continuation Project within Brayton, Marulan, and Carrick have been assessed as being within the local area of social influence.

Potential direct and indirect social impacts of the Continuation Project due to use of infrastructure, supply chains, roads, transportation of goods, materials and equipment, the movement of its workforce (some of which may have drive-in-drive-out arrangements) and cumulative impacts arising from other projects in the area have been assessed within Goulburn Mulwaree LGA and Wingecarribee LGA as being the regional area of social influence.

These communities have been mapped to the Australian Bureau of Statistics (ABS) categories used for data collection (Table 5.1) and the local and regional area of social influence (hereto referred to as local area or regional area), illustrated in Figure 5.1.

Table 5.1 Area of social influence

Areas	Geographic area	ABS data category	Referred to in report as:
Local area of social influence	Marulan suburb	Marulan State Suburb Code (SSC)	Local area
	Brayton suburb	Brayton SSC	
	Carrick suburb	Carrick SSC	
Regional area of social influence	Goulburn Mulwaree region	Goulburn Mulwaree LGA	Regional area
	Wingecarribee region	Wingecarribee LGA	
State of New South Wales	State of New South Wales	New South Wales STE	NSW



- KEY**
- Gunlake Quarry Continuation Project
 - Local area
 - Regional area
 - Rail line
 - Major road
 - Waterbody
 - NPWS reserve
 - State forest

Area of social influence

Gunlake Quarry Continuation Project
Social Impact Assessment
Figure 5.1



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Source: EMM (2021); DFSI (2017); ABS (2016)



5.2 Demographics

According to the 2016 Census of Population and Housing, the local area, has a total population of 1,487 people. Most of these people reside in Marulan (1,178), with a small portion residing in Brayton (173) and Carrick (136). Projected population data for the area is only available for the LGA level. Population projections published by DPIE (2019) suggest that the projected population of the regional area is estimated to increase by 5,712 people from 79,259 in 2016 to 84,971 in 2041, representing a total increase of 7.2% and an average annual increase of 0.3%.

In the local area, the largest age groups are persons aged 45–54 years (14.5%), 55–64 years (12.6%), and 35–44 years (11.8%). The local area also has a higher proportion of persons aged 65 years and older (18.7%) compared to NSW (16.3%), but lower than the regional area (23.4%) (ABS 2016), ie the population is, on average, older in the local area and regional area compared to NSW as a whole. This is also reflected in the median ages across the local area and regional area: 41 years in Marulan, 48 years in Brayton, 47 years in Carrick, 43 years in Goulburn Mulwaree LGA and 47 years in Wingecarribee LGA, all of which are older than the median age across NSW (38 years) (ABS 2016). There is a smaller proportion of youth aged 15–24 in the local area (10.6%) and regional area (10.8%) compared to NSW (12.5%). This may be indicative of the rural character of the region, with fewer tertiary education and job opportunities for young people.

5.3 Qualifications and workforce

Non-school qualifications in the local area are lower than NSW for all types of qualifications, except diplomas and certificates. In the local area, 12.1% of persons have Bachelor degree level qualifications, which is lower than the regional area (18.6%) and significantly lower than NSW (26.3%). The proportions of persons with advanced diplomas and diploma level qualifications are only marginally lower in the local area (13.6%) than the regional area (15.6%) and NSW (all 14.6%). Certificate level qualifications in the local area (49.6%), and regional area (37.1%), are much higher than in NSW (29.7%). This reflects the main occupations in the local and regional areas being technicians, trades workers, and labourers which typically do not require tertiary level education. This is also consistent with the higher proportion of persons attending alternative educational institutions (ABS 2016).

In 2016, the unemployment rate in the local area was 5.8%, which is higher than the regional area (4.7%) but lower compared to NSW (6.3%). Youth unemployment was significantly lower in the local area (6.8%) compared to the regional area (9.6%) and NSW (13.6%). Labour force participation in the local area was also lower (57.1%) compared to NSW, but higher than the regional area (55.0%) (ABS 2016).

In the local area, the top three occupations are technicians and trades workers (15.9%), labourers (14.8%), and machinery operators and drivers (12.9%) (ABS 2016). These jobs generally require TAFE education or certificate level qualifications, which comprise the largest proportion of qualifications in the local and regional areas, with almost half of technicians and trades workers holding a Certificate III or higher vocational qualification (NSC 2020). The higher proportion of manual labour type occupations in the local area is reflective of the main industry of employment being construction (see Section 5.4).

At the time of the 2016 Census, the local area had a total labour force of 669 people, with a 57.1% labour force participation rate for people aged 15–85 years. The labour force participation rate in the regional area was 55.0%, with the total labour force consisting of 35,018 people aged 15–85 years.

5.4 Local business and industry

Construction is the top industry of employment in the local area providing 12.9% of employment, followed by health care and social assistance (10.3%), and accommodation and food services (8.5%). This differs from the regional area where the top three industries of employment are health care and social assistance (13.4%), retail trade (10.1%), and construction (9.7%) (ABS 2016). The higher proportion of employment in the health care and social assistance industry in the regional area is likely due to employment being concentrated in the regional centre of Goulburn where these services are most available. The high rate of employment in the health care and social assistance sector could be attributed to workers who travel to the regional area for work.

5.5 Social infrastructure and services

In the local area there are two general practitioner (GP) services, one preschool facility, one primary school, a rural fire brigade, a police station, a youth club, and a Country Women’s Association branch. The local area is well serviced by a range of schools, childcare and health services, located in the regional area. However, it was noted during the SIA field study that there is currently a high demand on ambulance services within the regional area. The regional area also provides community services including Aboriginal community services, child and family services, youth community services, housing and homelessness services, employment services, disability services, aged services, and domestic violence services (Healthdirect Australia 2021; Ask Izzy 2021) (see Table 5.2). As previously mentioned, health care and social assistance is one of the top three industries of employment in the regional area.

Table 5.2 Social infrastructure, services, and facilities in the local and regional area, 2020

	Local area	Regional area
Hospital services	✘	✔
GP services	✔	✔
Childcare services	✔	✔
Primary schools	✔	✔
Secondary schools	✘	✔
Tertiary institutions	✘	✔
Emergency services	✔	✔
Aboriginal services	✘	✔
Child and family services	✘	✔
Youth services	✔	✔
Housing and homelessness services	✘	✔
Employment services	✘	✔
Disability services	✘	✔
Aged care services	✘	✔
Women’s services	✔	✔

Source: Healthdirect (2021); Ask Izzy (2021)

5.6 Housing and accommodation

On 21 June 2021, there were four properties for sale and one property for rent in the local area (REA Group 2021). In the regional area, there were 183 properties for sale and 56 properties for rent, with most of these properties located within the suburb of Goulburn (126 properties for sale and 41 properties for rent).

The vacancy rate in the local area from March 2017–March 2018 was consistently below the 3.0% benchmark, indicating a tight rental market with an undersupply of rental housing during that time. From June 2018–March 2020, the rental vacancy rate was mostly above 3.0% (besides September 2018), with a significant oversupply of rental options in March 2020 (6.6%), coinciding with the beginning of restrictions related to COVID-19 and potentially attributable to many people losing employment and not being able to maintain their rent. In June 2020, the vacancy rate returned to below 3.0% (1.9%), before rising to 2.2% in October 2020, consistent with the low number of properties available to rent and low proportion of rented dwellings (ABS 2016). This is consistent with findings from the SIA field study, with participants identifying high rental costs and a lack of rental housing available within the local area.

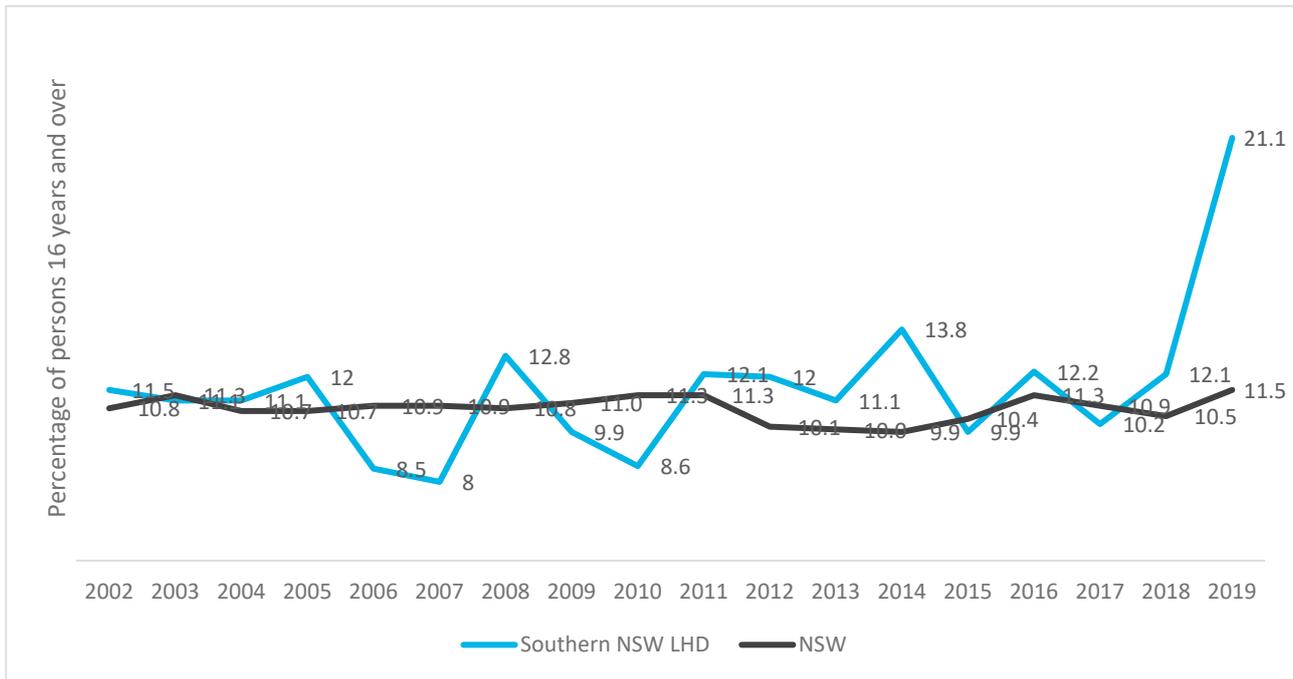
5.7 Health and wellbeing

Social determinants of health, described as “the circumstances in which people grow, live, work, age, and the systems put in place to deal with illness ... which are shaped by political, social, and economic forces” (AIHW 2020), indicate the health of a population. These include factors such as conditions of employment, provision of social services and support, and socioeconomic position. Although the local area and regional area have a substantially lower level of unemployment compared to greater NSW, there are relatively more households with low income and fewer people in high-skill occupations compared to the rest of NSW, suggesting higher rates of socioeconomic disadvantage. Furthermore, the provision of social infrastructure and social services is anticipated to be less comprehensive in the local area compared to more urban regions of NSW, which may require travel outside of the local area to access specialist health and community services.

Health risk factors that can be used as an indicator of population health include alcohol consumption, smoking, and obesity. Trends for prevalence of alcohol consumption at levels posing a long-term health risk, daily smoking, and overweight/obese adults were not available for the local or regional area. Health trends throughout Southern NSW Local Health District (LHD) are assumed to reflect trends within the local and regional areas. Although the data generally demonstrates similar overall trends for physical health in Southern NSW LHD compared to NSW, the Southern NSW LHD community experiences an overall lower level of physical health compared to NSW (NSW Health 2020).

5.7.1 Asthma

Trends of asthma were not available at the SSC or LGA level. Asthma trends throughout Southern NSW LHD are assumed to reflect trends within the local and regional areas. Prevalence of asthma has varied year on year in Southern NSW LHD from 2002–2019. In Southern NSW LHD, there was a significant increase in prevalence of asthma from 2018–2019, resulting in a greater prevalence of asthma in Southern NSW LHD in 2019 (21.1%) compared to NSW (11.5%). However, prior to this increase, rates of asthma in Southern NSW LHD were similar to the rates across NSW, with some slight variation year on year (NSW Health 2020). The spike in prevalence of asthma in 2019 may correlate with the prevalence of bushfires and resulting smoke throughout this area in late 2019. During the SIA field study, one stakeholder anecdotally reported that the smoke from the bushfires was pervasive throughout the local area for months, with increased severity of asthmatic reactions.



Source: NSW Health (2020).

5.8 Vulnerable groups and vulnerabilities

5.8.1 Disability

In the local area, 5.2% of the of people have a need for assistance in one or more of the three core activities of self-care, mobility and communication due to a long-term health condition (lasting 6 months or longer), a disability (lasting 6 months or longer), or old age. This is slightly lower than that in the rest of NSW (5.4%), while the population within the regional area has a slightly greater need for assistance (6.0%). The similar need for assistance in the local area, regional area, and across NSW may reflect access to and availability of social services, in particular disability services, in Goulburn within the regional area. Baxter, Hayes and Gray (2011), of the Australian Institute of Family Studies, found that people living in major cities and regional centres are less likely to have problems accessing services such as doctors and disability services, while those in outer regional or remote areas have the most trouble accessing these services. This may contribute to people migrating to regional centres, such as Goulburn within the regional area, and larger cities where those services are more readily available.

5.8.2 Homelessness

As explained by the Australian Human Rights Commission (AHRC) (n.d.), “the causes of homelessness are numerous and complex. Homelessness can be caused by poverty, unemployment or by a shortage of affordable housing, or it can be triggered by family breakdown, mental illness, sexual assault, addiction, financial difficulty, gambling or social isolation. Domestic violence is the single biggest cause of homelessness in Australia”. Homelessness can lead to health problems including poor nutrition, depression, substance abuse, poor dental health, and mental health conditions (AHRC 2021). For homeless persons, hardships with finances, transport, identification, Medicare, and difficulty with appointment maintenance/treatment plans make accessing health care services more difficult than the average person (AHRC 2021). As such, homeless persons are at greater risk of being negatively affected by potential impacts on livelihoods and health and wellbeing.

Rates of homeless are not available at the SSC level but are available at the LGA level. According to the 2016 Census estimations on homelessness, rates of homelessness in the regional area are lower than NSW rates, with a rate of 35.0 homeless persons per 10,000 persons in Goulburn Mulwaree LGA and 19.2 homeless persons per 10,000 persons in Wingecarribee LGA compared to a rate of 50.4 homeless persons in NSW (ABS 2016). The relocation of homeless persons to large regional centres or cities where they can access homelessness services and support is indicative of the higher rate of homelessness in cities.

The context of COVID-19 creates additional risk of housing instability and homeless for persons experiencing financial hardship. COVID-19 has facilitated increased migration from urban centres to more regional and rural areas of Australia (Anglicare 2021, Goulburn Post 2021). This has contributed to increased rents and lower rental availability (particularly affordable housing) in regional areas of Australia, including the Goulburn Mulwaree area.

5.8.3 Aboriginal and/or Torres Strait Islander population

At the time of the 2016 Census, 3.1% of the total population within the local area and 2.8% of the regional area population identified as Aboriginal and/or Torres Strait Islander. The largest demographic in the Aboriginal and/or Torres Strait Islander community in the regional area is children (aged 5–14 years) (ABS 2016). Compared to the total population of the regional area and NSW, there is a much smaller proportion of persons aged 65 years and older who identify as Aboriginal and/or Torres Strait Islander. The Aboriginal population's smaller proportion of the population (both males and females) living beyond 65 years aligns with the lower life expectancy among Aboriginal Australians nationally that is particularly acute in Aboriginal males (AIHW 2019), with much of this gap is explained by the relationships between increased socioeconomic disadvantage, worsened mental health outcomes, and related health risk behaviours, including greater proportions of smoking and alcohol use (AHMAC 2017).



6 Community and stakeholder engagement

This section summarises the findings from the community engagement activities undertaken in relation to the Continuation Project:

- as part of the EIS engagement; and
- to inform the SIA.

The SIA Guideline 2017 has integrated the above elements of the engagement program to reduce the risk of engagement fatigue for potentially affected communities. Consultation for this assessment was carried out during the COVID-19 pandemic and conducted in accordance with applicable Australian and NSW Government health agency advice. A summary of EIS engagement activities and participation is provided in Section 6.1. Full details of community engagement activities are described in Section 5 of the EIS.

6.1 EIS engagement activities and participation

6.1.1 Continuous consultation

Gunlake has been actively engaging with the Quarry’s stakeholders since 2008 via a range of forums, as described in Table 6.1 and also employs a Community and Stakeholder Relations Manager.

Table 6.1 Continuous consultation

Forum	Description
Community Consultative Committee (CCC)	<p>The Gunlake Quarry CCC has operated since 2013. The committee is independently chaired by Don Elder and includes five community members, a Goulburn Mulwaree Council representative and Gunlake representatives. The CCC generally meets three to four times per year.</p> <p>The CCC meeting minutes are available on the Gunlake website: www.gunlake.com.au/quarry-community/#committee.</p> <p>The most recent CCC meeting was on 27 August 2021.</p>
Website	<p>The Gunlake Quarries website (www.gunlake.com.au/gunlake-quarries) provides an overview of the Quarry and the Gunlake Group.</p> <p>The website provides a full range of environmental reports regarding the quarry including:</p> <ul style="list-style-type: none"> • the Quarry’s management plans; • environmental monitoring results and annual review; • the site’s Environment Protection Licence; • the 2019 Independent Environmental Audit; and • a link to the Gunlake Quarry Extension Project EIS and associated approval documents. <p>The website also provides community information and a community liaison form (www.gunlake.com.au/quarry-community).</p>

Table 6.1 Continuous consultation

Forum	Description
Community programs	<p>Gunlake participates in numerous local community programs and events including:</p> <ul style="list-style-type: none"> • annual commitments: <ul style="list-style-type: none"> – Goulburn District Education Foundation (major contributor); – Marulan Australia Day Committee (major sponsor); – Tallong Apple Day Festival (major sponsor); – Marulan Chamber of Commerce Events: Marulan Kite Festival Art Show (major sponsor) and NSW Horologists Exhibition (major sponsor); and – trades training scholarships. • Other recent community commitments and initiatives include: <ul style="list-style-type: none"> – Marulan Public School: major Contributor to Playground upgrade; – Marulan Rural Fire Brigade: major contribution to fire station training room upgrade; – Goulburn Mulwaree Council, Marulan Village Working Party: co-contributor to the barbeque cover; – Bundanoon Wombat Care: loan of vehicle after bushfires; – Gibraltar Road residents crown road upgrade: donated construction materials; and – Marulan Country Women’s Association: co-contributor to the provision of a community defibrillator. • Gunlake also participates in: <ul style="list-style-type: none"> – the Goulburn Mulwaree Council: Marulan Village Plan Working Party member; – the Goulburn Secondary Schools Work Experience Placement Program: committee member and participant in local career expos; – Regional Development Australia: ongoing panel member at a local ‘jobs agenda’ forums; and – the Marulan Region Chamber of Commerce: member business.
Newsletters	<p>Gunlake produces and distributes regular updates to the community, both on its website and through the Discover Marulan newsletter.</p> <p>Past copies of the community updates are available on the Gunlake Quarries website.</p>
Community telephone line/email	<p>Gunlake operates a Community telephone line: 02 4841 1344.</p> <p>Gunlake operates a dedicated email address (community@gunlake.com.au) with a response guaranteed within 48 hours.</p>
Ongoing consultation	<p>Gunlake regularly meet with stakeholders regarding ongoing operations and proposed developments at the quarry, including:</p> <ul style="list-style-type: none"> • Parliament of NSW Member for Goulburn; • Local NSW Legislative Council Member of Parliament; • Parliament of Australia Member for Hume; • Goulburn Mulwaree Council – Mayor, General Manager and council officers; • NSW Police – Goulburn Area Command; and • site staff and a range of local community members and groups on an ongoing basis.

6.1.2 Gunlake Quarry Modification 2 application

Gunlake applied to modify the Quarry’s current consent in 2020 to allow increased truck movements on the Primary Transport Route. This included public exhibition of the *Gunlake Quarry Extension Project Statement of Environmental Effects* (EMM 2021a) between 14 January and 5 February 2021. Submissions were received from two interest groups and six community members. The themes presented in these submissions have been considered in the preparation of this SIA. A summary of the themes and issues of the submissions received for the Gunlake Quarry Modification 2 application are presented in Table 6.2.

Table 6.2 Summary of Gunlake Quarry Modification 2 submissions themes

Themes	Issues
Traffic and transport	<ul style="list-style-type: none">• Vehicle numbers• Road safety• Road condition• Alternate transport review/rail option
Amenity	<ul style="list-style-type: none">• Pollution from Quarry• Pollution from trucks
Socio-economic	<ul style="list-style-type: none">• Economic benefit/ contribution to community• Property value related to truck movements• Community consultation
Other	<ul style="list-style-type: none">• Compliance• EIS preparation• Alternative option

6.1.3 Continuation Project consultation

In addition to the ongoing consultation conducted by Gunlake summarised in Table 6.1, specific consultation was conducted for the Continuation Project.

During the consultation period for the Continuation Project, Gunlake engaged with the community using several methods, including:

- meeting with key stakeholders;
- letter and newsletters to transport route residents;
- CCC meetings;
- newsletters; and
- Community Information Session (Mod 2 and Continuation Project).

The community information session in December 2020 regarding the Gunlake Quarry Extension Project Modification 2 application included information relevant to the Continuation Project. A further community information session was planned for August 2021 but had to be cancelled due to COVID-19 restrictions.

Table 6.3 EIS participation by engagement event

Activity	Format	Timeframe	Participation
Meetings with key agencies, including Goulburn Mulwaree Council, NSW Environment Protection Authority (EPA), and Department of Agriculture, Water and the Environment (DAWE), TfNSW, NSW Police, State and Federal Members	Face to face, videoconference and teleconference	October 2020– August 2021	Relevant government officers.
Letter to transport route residents	Letterbox drop	December 2020	Distributed to all residences along the primary and secondary transport routes
Gunlake December 2020 Newsletter	Newsletter distributed via letterbox drop directly to transport route residents and within Discover Marulan online and print publications	December 2020	Newsletter distributed via letterbox drop directly to transport route residents and within Discover Marulan online and print publications
CCC meeting	Face to face	4 December 2020	CCC members
Gunlake Quarry Modification 2/Continuation Project Community information session 1	Face to face	4 December 2020	Advertised via Gunlake December 2020 Newsletter – Eight attendees
Gunlake August 2021 Newsletter	Newsletter distributed via letterbox drop directly to transport route residents and within Discover Marulan online and print publications	August 2021	Newsletter distributed via letterbox drop directly to transport route residents and within Discover Marulan online and print publications
CCC meeting 2	Videoconference	27 August 2021	CCC members

6.2 SIA field study activities

The SIA field study consisted of in-depth interviews (conducted via telephone and videoconference) with local residents and key stakeholders of the Continuation Project. The SIA field participation details are provided in Table 6.4.

Table 6.4 SIA field study participation

Method	Format	Timeframe	Invited	Participation
In-depth interviews	Videoconference, and teleconference	7 July 2021–27 July 2021	12 service providers and two local residents residing on the Primary Transport route	12 interviews with 13 stakeholders (total of eight service providers, two local residents residing on the Primary Transport route, and three local residents)

6.2.1 In-depth interviews participation

In-depth interviews were conducted with local residents and key stakeholders from 7 July 2021 to 31 August 2021. The in-depth interviews involved a discussion of the values, vulnerabilities and strengths of the local community, as well as the identification of perceived impacts and benefits as a consequence of the Continuation Project. A total of 12 interviews were conducted with 13 stakeholders via videoconference and via telephone with:

- two local residents residing along the Primary Transport Route (members of the CCC);
- three local residents (members of the CCC);
- one representative of the Marulan Rural Fire Brigade;
- one representative of the Marulan Chamber of Commerce;
- one representative of Marulan Public School;
- one representative of the Marulan Country Women’s Association;
- one representative of the Historical Society;
- one representative of the local police service;
- one representative of the Goulburn District Education Foundation; and
- one representative of Mission Australia.

Each of the service provider interviews also offered insights into the potential impacts and benefits of the Continuation Project to specific areas of service in the community. The key findings from the in-depth interviews are provided in Sections 6.2.2 and 6.2.3.

6.2.2 Community identified values, strengths, and vulnerabilities

All consultation activities sought to understand how participants viewed their community and identify how the Continuation Project may impact on their community. It is informed by the findings of the in-depth interviews held with local members of the community and service providers, and EIS engagement activities.

Participants identified values, strengths and vulnerabilities as shown in Table 6.5. The key issues or potential impacts, and opportunities or potential benefits identified by the community are organised into categories of social impact theme. A detailed summary of the most prominent social impacts that were identified throughout the SIA field study and stakeholder engagement activities are available in Section 6.2.3.

Table 6.5 Community identified values, strengths and vulnerabilities

Values	Strengths	Vulnerabilities
Local growth and reliance on extractive industries	Local skills and workforce (particularly trades skills)	Aging population
Long-term sustainable employment	Increasing community development and growth	Drug and alcohol issues
Youth retention and population growth	Connectivity and central location	High demand for trades

Table 6.5 Community identified values, strengths and vulnerabilities

Values	Strengths	Vulnerabilities
Rural/country lifestyle and environment	Affordable housing (purchasable) and low cost of living	Lack of health services
Education and training	Accessible services	High demand for existing services
Community cohesion and resilience	Accessible jobs and low unemployment	Lack of public transport in Marulan
	Accessible and quality primary and secondary education	Poor drinking water quality
	Natural environment and surroundings	High housing prices (rentals)
		High socio-economic disadvantage (particularly within Goulburn)
		Lack of youth retention
		Lack of educational, tertiary, and vocational opportunities
		Pressure on emergency services

6.2.3 Community-identified social impacts and benefits

The Continuation Project will intensify current Quarry activities. A summary of the most prominent potential social impacts of the Continuation Project identified by the community through the SIA field study and EIS engagement activities are presented in Table 6.6.

Table 6.6 Potential impacts, benefits and opportunities identified by the community

Themes	Impacts	Benefits	Opportunities
 <p>LIVELIHOOD</p>	<ul style="list-style-type: none"> Concern that truck movements and associated noise would impact on the value of property along the Primary Transport Route into the future, thereby impairing or compromising their investment. 	<ul style="list-style-type: none"> Ongoing local employment Increased local employment Job opportunities for youth Procurement of local goods and services 	<ul style="list-style-type: none"> Collaboration with local employment and training services and organisations in town Training support for local youth, both financially and through work experience opportunities
 <p>COMMUNITY</p>	<ul style="list-style-type: none"> Impacts to community character (ie quietness and country feel) due to population growth and development of the local area 	<ul style="list-style-type: none"> Population retention, particularly amongst youth Community economic development and growth Community cohesion 	<ul style="list-style-type: none"> Additional community funding and shared value opportunities

Table 6.6 Potential impacts, benefits and opportunities identified by the community

Themes	Impacts	Benefits	Opportunities
 <p>ACCESS TO INFORMATION/ SERVICES</p>	<ul style="list-style-type: none"> • Increased pressure on local emergency services • Increased demand for trades services 	<ul style="list-style-type: none"> • Multiplier effect of extractive industries – providing jobs, demand for schools, demand for services, and demand on infrastructure which contribute to increased provision of local services and infrastructure (growth) • Provision of reliable water supply for Rural Fire Brigade when needed, as well as provision of machinery and water cart if needed 	<ul style="list-style-type: none"> • Partnerships between the Continuation Project and emergency service providers • Police and Community Youth Club (PCYC) engagement through the company to assist support for local youth • Preparation of consequence management plans which include assessment of risks or gaps in emergency services responses in consultation with local emergency services
 <p>HOUSING</p>	<ul style="list-style-type: none"> • Increased pressure on rentals within the local area, in consideration of current high rental housing prices and lack of rental housing availability • Impacts to property values related to increased truck movements 	<ul style="list-style-type: none"> • Increased development of housing associated with increased population 	<ul style="list-style-type: none"> • Purchasing of local housing and offering of subsidised rent for local employees
 <p>LIFESTYLE</p>	<ul style="list-style-type: none"> • Increased traffic in the local area • Increased road noise in the local area from increased truck movements and use of air brakes • Noise during operation from quarry activities such as blasting and crushers • Amenity impacts related to dust from quarry operation • Amenity impacts related to pollution from trucks 	<ul style="list-style-type: none"> • Sustainable long-term employment contributing to maintained population and way of life in the local area 	<ul style="list-style-type: none"> • Potential for road upgrades with associated improvement in road safety
 <p>HEALTH & COMMUNITY WELLBEING</p>	<ul style="list-style-type: none"> • Additional truck movements increasing potential for traffic accidents, particularly related to current speed limits of 100 km/h and concealed driveways along the Primary Transport Route 	<ul style="list-style-type: none"> • Improved social determinants of health related to reduced disadvantage associated with increased employment and business opportunities 	<ul style="list-style-type: none"> • Reduction of the speed limit along the Primary Transport Route
 <p>SAFETY</p>	<ul style="list-style-type: none"> • Increased roadkill • Rail transport has not been proposed 		

7 Social impact themes

This chapter summarises the key themes derived from the social baseline data, the SIA field study, and outcomes of EIS community engagement. Examples from other quarry developments and other SIAs, predominately in NSW, and academic research have been drawn on to provide context and background information to inform the social impacts discussed in Chapter 8.

The following key social impact themes were identified:

- vehicle speed and road safety;
- economic growth and development;
- shared value opportunities; and
- youth retention in rural and regional areas.

These are described below.

7.1 Vehicle speed and road safety

According to TfNSW (2020), safe roads are affected by a variety of factors related to road design, safety treatments, and driver behaviour. The *State Significant Development Road Safety Assessment Report (RSAR)* for the Continuation Project explains that an assessment of road safety is largely a qualitative assessment, considering the road and roadside features in terms of the potential to contribute to road crashes and overall road safety risk. Relevant and established Austroads Guidelines are also considered to ensure acceptable minimum road design criteria are met or exceeded.

Reduced public safety as a result of increased truck movements on the Primary Transport Route was the main potential impact of concern raised by stakeholders during in-depth interviews. Several stakeholders raised specific concerns about the current speed limit of 100 km/h along the Primary Transport Route and that vehicle travel speeds affect both the risk of crashes occurring, the severity of crashes, and the severity of injuries.

As recognised in the RSAR, vehicle speed affects crash likelihood and severity outcomes, with speed having a consequential and material effect on the level of road safety risk (AARB 2021). Reductions in the average travel speed across the network is regarded as the most effective and swift way to reduce road trauma (WHO 2004; De Pauw et al. 2014; TfNSW 2021). As speed increases, a driver has less time to react to emergencies and requires a greater distance to stop (WHO 2004; De Pauw et al. 2014; TfNSW 2021). According to the International Transport Forum (2018) “every 1% increase in average speed results in a 2% increase in all injury crashes, a 3% rise in fatal and severe crashes and 4% more fatal crashes.

Speed limits are set in accordance with the NSW Speed Zoning Guidelines. These guidelines are developed and applied by road safety experts and traffic engineers from TfNSW. The guidelines themselves, are based on international and evidence-based best practice in speed management, Australian Standards, Austroads Guides, state legislation, government policies and plans. All rural roads in NSW are 100 km/h unless signposted with another speed limit (RTA 2011). The 100 km/h default speed limit for non-built-up areas includes urban motorways (freeways/tollways), rural undivided road with sealed pavement wider than 5.6 m, and rural divided roads (RTA 2011). Transport for NSW (TfNSW) is responsible for reviewing and setting speed limits in NSW.

7.2 Economic growth and development

During in-depth interviews, stakeholders raised that the flow-on economic benefits arising from continued Quarry operations as part of the Continuation Project would create opportunities within the local and regional area, including continued development of industry, associated improvements to infrastructure and services, and general benefits to the local and regional economy. Quarries support local, regional, and broader economic development by supporting vital building and construction industries through the provision of essential materials. Furthermore, quarries stimulate local communities through investment and by providing jobs.

The *Gunlake Quarry Continuation Project Economic Assessment* (EIA) explains that theories of regional economic growth related to population change suggest that places that are able to attract population immigration² create increased demand for goods and services and thus more jobs. This growth leads to increasing local multiplier effects, scale economies and an increase in the rate of innovation and capital availability (Gillespie Economics 2021).

During in-depth interviews, stakeholders described potential benefits consistent with a ‘multiplier effect’. In general, the term regional multiplier is defined as the ratio of the total income or employment effect on a regional economy of an initial investment or expenditure, financed from outside the community, to the size of its direct impacts (Moazzami 2019). Moazzami (2019) explains that “when individuals, firms, or organisations make changes in their expenditures, a series of changes in incomes and expenditures of economic agents is induced” (p. 6). This leads to direct, indirect, and induced economic and social effects whereby an initial economic stimulus results in subsequent spending and re-spending, resulting in additional income generation and employment. The EIA explains that local economic benefits can be created through both direct effects related to employment and direct effects related to non-labour expenditure. Furthermore, the expenditure by employees, who reside in the region, and non-labour expenditure that is captured by the local area, provides flow-on economic activity to the local economy (Gillespie Economics 2021).

Direct effects from the initial spending creates additional activity in the local economy. Businesses which initially benefit from the direct effects will subsequently increase spending at other local businesses. The indirect effect is a measure of this increase in business-to-business activity (not including the initial round of spending, which is included in the direct effects). Induced effects are the results of increased personal income caused by the direct and indirect effects. Businesses experiencing increased revenue from the direct and indirect effects will subsequently increase payroll expenditures (by hiring more employees, increasing payroll hours, raising salaries, etc.). Households will, in turn, increase spending at local businesses. The induced effect is a measure of this increase in household-to-business activity (Moazzami 2019; Demski 2020).

7.3 Corporate social responsibility and creating shared value

Companies can create enhanced benefits which contribute to both competitive advantage and strengthened communities through corporate social responsibility (Fordham & Robinson 2018) and ‘shared value actions’ (Porter and Kramer 2011). Creating shared value overlaps with corporate social responsibility by aligning the ethical and philanthropic nature of corporate social responsibility with an agreed business case (Fordham & Robinson 2018).

During the SIA field study, several stakeholders identified Gunlake’s corporate social responsibility initiatives, in the form of funding and contribution of resources, as providing significant benefits to the local area, particularly related to addressing social need within the local community. Stakeholders also reported significant benefits from shared value actions, such as the identification and provision of training and apprenticeship opportunities and subsequent employment opportunities, for local workers.

² This can be considered symptomatic of key drivers in the economy based on the regions natural and manmade endowments that give it a comparative advantage in certain sectors.

Shared value initiatives can simultaneously address community needs, take advantage of existing company assets and expertise, and promote business opportunities. Utilising the experience, resources, and innovation of the private sector to address the key social issues within a community has the potential to create significant long-term benefits for a range of groups and individuals. Ongoing actions should aim to contribute sustainable benefits to the community, maximise positive business outcomes and support the process of maintaining a social license to operate (Shared Value Project 2021).

7.4 Youth retention in rural and regional areas

According to participants of workshops and surveys conducted to inform the *Tablelands Community Strategic Plan 2016–2036*, the Goulburn Mulwaree LGA community values shaping a community where “youth [are] able to stay in their hometown with job opportunities” (Cardno 2016). During in-depth interviews, stakeholders reported noticeable increases in the populations of the local and regional areas, noting that they have noticed more young families moving to the area. However, stakeholders also reported that the local and regional areas tend to lose a substantial proportion of youth (ie people aged 15–24 years) due to migration to larger urban areas in pursuit of higher education and employment opportunities.

According to Liu (2015), education and employment play a major role in youth’s decision to leave, stay or return to rural area. Although youth leaving rural and regional areas to pursue post-secondary education not available in their local or regional area could contribute to enhanced skills and employability, an inability for young graduates to find suitable employment in their relevant field within rural areas not only plays a major role in driving youth away from rural towns, but also prohibiting them from returning to their home community (Looker & Naylor 2009).

Youth departure from rural and regional areas is influenced by geographic factors, social influences (including family expectations, lifestyle, and influence of social networks), and ‘critical events and disruptions’ which prompt the development of new aspirations and capabilities. Vocational education and training (VET) has been found to offer an important pathway for young people’s entry into education and training, as well as being a significant mechanism for the re-engagement of young people not in education, training or employment (Webb et al. 2015).

8 Social impact assessment

This chapter provides an assessment of the identified social impacts of the Continuation Project. The aim of the SIA is to assess the proposed change to the current social conditions as a consequence of the Continuation Project. A risk framework (see Appendix B) has been adopted to rate the identified social impacts. The framework is applied using a likelihood (Table 8.1) and consequence (Table 8.2 and Table 8.3) levels. The social impact levels for positive and negative impacts are provided in the SIA impact-benefit matrix in Figure 8.1.

	4 Highly Desirable	3 Desirable	2 Minor	1 Minimal	1 Negligible	2 Marginal	3 Moderate	4 Major	5 Intolerable
5 Almost certain	Significant (15)	Significant (12)	Moderate (8)	Limited (5)	Low (6)	Medium (8)	High (12)	Unacceptable (16)	Unacceptable (16)
5 Likely	Significant (14)	Significant (11)	Moderate (7)	Limited (4)	Negligible (4)	Low (7)	Medium (10)	High (14)	Unacceptable (16)
3 Possible	Significant (13)	Significant (10)	Moderate (6)	Limited (3)	Negligible (3)	Low (6)	Medium (9)	High (13)	Unacceptable (16)
2 Unlikely	Significant (12)	Moderate (9)	Limited (5)	Limited (2)	Negligible (2)	Low (6)	Medium (8)	Medium (11)	Unacceptable (16)
1 Rare	Significant (11)	Moderate (8)	Limited (4)	Limited (1)	Negligible (1)	Negligible (5)	Low (7)	Medium (10)	High (15)

Source: EMM (2020).

Figure 8.1 SIA impact-benefit matrix

Table 8.1 Likelihood levels

Descriptor	Level
Almost certain	5
Likely	4
Possible	3
Unlikely	2
Rare	1

Source: EMM (2020).

Table 8.2 Consequence levels – positive consequences (benefits)

Descriptor	Level
Highly Desirable	4
Desirable	3
Minor	2
Minimal	1

Source: EMM (2020).

Table 8.3 Consequence levels – negative consequence (impacts)

Descriptor	Level
Negligible	1
Marginal	2
Moderate	3
Major	4
Intolerable	5

Source: EMM (2020).

Assessment of social impacts requires balancing of a range of factors and, often competing, interests. Therefore, this SIA has:

- assessed some aspects of the Continuation Project as both negative and positive as they relate to different groups of people;
- included negative impacts on local communities while documenting the benefits to the broader region;
- considered the impacts on vulnerable groups and provided management strategies to ensure that any existing disadvantages are not exacerbated; and
- considered each community’s access to critical resources, such as housing and health care, and how this affects their resilience.

Potential environmental and social impacts have been assessed in the technical assessments prepared for Continuation Project EIS, including this SIA. Many of these assessments compare predicted impact levels to defined criteria following the implementation of the proposed management measures. For example, the *Noise Impact Assessment* (EMM 2021b), provides modelled noise levels from the Quarry at sensitive receivers for the Continuation Project, assuming that the existing and the proposed noise management measures (such as noise bunds and primary crusher station enclosures) are implemented. These assessments report the predicted ‘mitigated’ impacts of the Continuation Project.

Potential social impacts have been assessed based on the change to, or the perceived change to, the social and biophysical environment as understood through the project and SIA field study program (see Section 6). These include positive social impacts and negative social impacts.

Negative social impacts have been assessed in the absence of any social mitigation measures (referred to as ‘unmitigated’ impacts below) and then have been assessed based on the successful implementation of the proposed social mitigation measures (referred to as ‘mitigated’ impacts below).

Similarly, positive social impacts have been assessed in the absence of any additional social mitigation measures (referred to as ‘un-enhanced’ impacts below) and then have been assessed based on the successful implementation of the proposed social mitigation measures (referred to as ‘enhanced’ impacts below).

The following data and information have been used to identify the impacts and their associated risks:

- data collected as part of the social baseline study;
- findings from SIA field study and EIS engagement activities;
- academic research;
- relevant previously conducted SIAs; and
- relevant government and agency reports.

A social impact workshop was conducted on 28 July 2021 to assess impacts using a social risk framework in Appendix B.

This SIA was conducted during the COVID-19 pandemic. Although this affected the approach to the SIA field study and consultation, the COVID-19 pandemic is not anticipated to disproportionately impact the local area or the Continuation Project in terms of demographic, economic, and social trends and data which inform the assessment.



8.1 Way of life impacts

This section provides an assessment of the socially unmitigated/mitigated way of life impacts on the local and regional communities as a consequence of the Continuation Project. The matters assessed as having a potential social impact on communities are:

- traffic noise;
- noise and vibration from quarry operation; and
- dust.

8.1.1 Amenity related to traffic noise – unmitigated (no social mitigation measures)

The SIA field study indicated that local residents highly value the “country feel” of their community, with in-depth interview participants regarding the “quiet and peaceful” nature of the community. Participants raised concerns that noise from increased truck movements would detract from the current amenity of the local community and affect some residents located along the Primary Transport Route along Brayton Road (west of Ambrose/Red Hills Road) and on Ambrose/Red Hills Road. Concerns were raised related to general road noise, road noise associated with the road seal, and use of air brakes. One stakeholder raised concerns that truck movements and associated noise would impact on the value of their property into the future, thereby impairing or compromising their investment.

The road traffic noise impact assessment as part of the *Gunlake Quarry Continuation Project Noise Impact Assessment* (NIA) (EMM 2021b) considered the noise impacts of the proposed increase in daily truck movements along the Primary Transport Route. Road traffic noise predictions considered a maximum of 375 inbound and 375 outbound movements in a day. Based on current daily truck movements to and from the site, it has been assumed that 65% and 35% of Gunlake Quarry truck volumes would occur during the *Road Noise Policy* (RNP) (DECCW 2011) day (7 am–10 pm) and night (10 pm–7 am) periods, respectively. The nearest residential facades potentially affected by the proposed increase in traffic are located on Brayton Road (west of Ambrose/Red Hills Road) and on Ambrose/Red Hills Road.

The future total road traffic noise levels, inclusive of trucks associated with the Continuation Project, are predicted to satisfy the relevant road traffic noise criteria at the nearest potentially affected residences on Brayton Road, Ambrose Road and Red Hills Road (EMM 2021b). As no changes are proposed to Gunlake Quarry traffic volumes on the Secondary Transport Route (south of the Brayton Road/Ambrose Road intersection and through Marulan), noise levels along this route will not change as a result of the Continuation Project.

Without any social mitigation measures (ie ‘unmitigated’), the amenity impact related to traffic noise is assessed as Medium-8. The likelihood of impact is assessed as ‘almost certain’ as residents already experience local amenity impacts related to road noise. However, the negative consequences are anticipated to be marginal as road traffic noise levels are predicted to satisfy the relevant road traffic noise criteria at the nearest potentially affected residences on the Primary Transport Route, the current hours of operation provides a respite period from Saturday evening to Monday morning, and impacts to liveability and livelihood will be limited to the life of the Continuation Project.

8.1.2 Amenity related to traffic noise – mitigated (with social mitigation measures)

The primary social mitigation measure is Gunlake’s community engagement mechanism (ie dedicated Project phone number and Project email), which provides the opportunity for stakeholders to raise complaints, grievances, and provide feedback. This will continue to manage potential amenity impacts due to noise from road traffic on residents. Although it is predicted that road noise will remain below road traffic noise criteria (EMM 2021b), Gunlake will continue to monitor complaints to determine if there is an increase in complaints specifically related to road noise. As the identified mitigation measures will be used to manage potential amenity impacts related to road noise, the mitigated social impact is Medium-8. A summary of the assessment is provided in Table 8.4.

Table 8.4 Summary of amenity related to traffic noise

Social impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
 LIFESTYLE	Traffic noise	Local residents, particularly those along the Primary Transport Route	Operation	Local area, particularly along the Primary Transport Route	Medium-8	Medium-8

8.1.3 Amenity related to noise and vibration from quarry operation – unmitigated (no social mitigation measures)

Noise and vibration related to the operation of quarries near residential areas can cause amenity issues due to blasting activities, operation of processing plant, and other quarrying and construction equipment (Cement Concrete & Aggregates Australia n.d.). During the SIA field study, participants identified noise related to the operation of the quarry as a potential negative impact arising from the Continuation Project. Participants identified potential noise impacts arising from blasting activities as well as general quarrying activities, with one stakeholder noting that they were able to hear a ‘crushing noise’. However, SIA field study participants who identified noise impacts stated that they were not certain if the noise from blasting and quarrying activities were coming from Gunlake Quarry operations specifically, or other quarries within the surrounding local area.

As noted in the NIA (EMM 2021b), the Quarry is ideally located from a noise emission perspective given the distance and natural topographic shielding between the quarry and the nearest private residences. Gunlake also implement the following noise mitigation and management measures at the Quarry with the aim of minimising off-site noise impacts:

- construction of a noise bund east of the processing area;
- primary crusher enclosures;
- mobile fleet operations reduced during the evening and night periods;
- all mobile plant and fixed noise sources are effectively maintained to ensure that noise emissions do not increase over time;
- inclusion of noise management provisions in relevant on-site work inductions;
- quarterly operator-attended noise compliance surveys; and
- prompt response to any community issues relating to noise.

There will be no changes to blasting frequency or hours of operation as a result of the Continuation Project. The NIA operational noise modelling predicts that operational noise levels will continue to comply with noise limits at all assessment locations.

Gunlake will continue to implement mitigation measures currently in place at the Quarry to minimise the potential noise and vibration impacts on nearby neighbours. Gunlake will also continue to undertake operational noise compliance monitoring on a quarterly basis. If the Continuation Project is approved, Gunlake will review and/or update all management plans applicable to the site.

Results of the SIA field study indicated that local residents highly value their local amenity, including the “quiet” nature of their residential areas. Operational noise levels are predicted to comply with relevant noise limits at all assessment locations (EMM 2021b), and local residents are accustomed to noise related to regular blasting from quarrying and mining activities. However, when local residents do not anticipate noise from Project operation it may impact local amenity. Unanticipated noise has the potential to affect at-home work arrangements, the ability for local residents to engage in relaxation and interaction with the natural environment, and general liveability for residents located nearby the Continuation Project. To manage this, Gunlake currently maintains a blasting notification procedure whereby local residents that have registered an interest within 2 km of the Quarry Pit are notified prior to any blasting. The residents are advised of blasting by telephone or email. Details on registering for the blasting notification procedure for interested residents are available in the Gunlake website. Gunlake also currently liaise with other quarries in the area to address potential cumulative noise and vibration impacts from blasting to minimise the potential impact collectively.

Without any social mitigation measures (ie ‘unmitigated’), the amenity impact related to noise from quarry operation is assessed as Low-7. The likelihood of noise from blasting and quarry operations being heard by community members is likely as it currently occurs. The negative consequence is anticipated to be marginal as noise criteria will continue to be met during the Continuation Project due to Gunlake’s existing mitigation and management procedures, and impacts on liveability are limited to the life of the Continuation Project.

8.1.4 Amenity related to noise and vibration from quarry operation – mitigated (with social mitigation measures)

Gunlake will continue maintain their existing noise mitigation measures, as outlined above, including the social mitigation measures of blasting notifications and the complaints mechanism. It is recommended that Gunlake ensure that residents within a 2 km radius are aware of the process for registering to receive blasting notifications to manage potential noise and vibration impacts from blasting on residents who are not currently registered. By ensuring that the blasting notification register is well-communicated to residents residing within 2 km of the Quarry, social impacts related to the ‘element of surprise’ associated with noise and blasting could be minimised. Gunlake should consider communicating with residents within the 2 km radius who are not already registered to advise them of the blasting notification procedure and enable them to register if interested.

Gunlake will maintain their community engagement mechanisms to ensure negative experiences related to blasting continue to be recorded and addressed accordingly.

Mitigated, the amenity impact related to noise and vibration from quarry operation is further reduced to Negligible-4. With successful implementation of the recommended mitigation measures, the likelihood of social amenity impacts from noise remains likely as noise from blasting and general quarrying activities will still occur. However, the negative consequence is reduced to negligible. A summary of the assessment is provided in Table 8.5.

Table 8.5 Summary of amenity related to noise and vibration from quarry operation

Social impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
 LIFESTYLE	Noise and vibration from quarry operation	Local residents, particularly those residing adjacent to the Continuation Project site.	Operation	Local area, particularly surrounding the Continuation Project site	Low-7	Negligible-4

8.1.5 Amenity related to dust – unmitigated (no social mitigation measures)

During in-depth interviews, four stakeholders noted potential amenity impacts related to dust. Dust from mining and quarrying activities can result from activities such as “mechanical disturbance of rock and soil materials by dragline or shovel, bulldozing, blasting, and vehicles on dirt roads” (NSW Health 2017). The creation of dust can impact on the amenity of a local area, including dust accumulation in homes and residential area and affected visual and recreational amenity (NSW Health 2017).

The *Gunlake Quarry Continuation Project Air Quality Impact Assessment (AQIA)* (EMM 2021c) assessed the predicted concentrations and deposition rates for incremental particulate matter against the applicable impact assessment criteria at assessment locations for the currently approved operations and for the proposed Continuation Project. The AQIA found that the predicted cumulative concentrations for all pollutants and averaging periods will comply with the applicable NSW EPA assessment criteria and the air quality criteria specified in Schedule 3 Condition 14, Table 6, of the Land and Environment Court (LEC) Consent at all assessment locations (EMM 2021c).

Quarry operations will continue to be managed in accordance with the *Gunlake Quarry Air Quality Management Plan* (Gunlake 2020). This plan will be reviewed and updated as required following approval of the Continuation Project. Mitigation measures include the use of water trucks and carts, paved roads, watering conveyor transfer point, watering exposed areas where possible, and progressive rehabilitation of exposed areas.

Without any social mitigation measures (ie ‘unmitigated’), the amenity impact related to dust is assessed as Low-7. It is almost certain that dust accumulation will occur as a consequence of the Continuation Project. However, based on the findings of the AQIA and the current implementation of mitigation measures, it is anticipated that there will be negligible negative socio-economic consequences.

8.1.6 Amenity related to dust – mitigated (with social mitigation measures)

Wherever practical, Gunlake implements dust control measures in accordance with the *Gunlake Quarry Air Quality Management Plan* (Gunlake 2020). This plan will be reviewed and updated as required following approval of the Continuation Project.. To manage any community concerns related to dust, Gunlake will continue to maintain their community grievance mechanism to ensure any amenity concerns related to dust generated by the Continuation Project are captured and addressed. The mitigated social impact will remain as Low-7. A summary of the assessment is provided in Table 8.6.

Table 8.6 Summary of amenity related to dust

Social impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
 LIFESTYLE	Dust	Local residents, particularly those adjacent to the Continuation Project site and along transport routes	Operation	Local area, particularly adjacent to the Continuation Project site and along transport routes	Low-7	Low-7



8.2 Community benefits

This section provides a detailed assessment of the unenhanced and enhanced positive impacts of the Continuation Project on the community. The matters assessed are:

- community investment and involvement; and
- growth and economic development.

8.2.1 Community related to community investment and involvement – unenhanced (no social enhancement measures)

Gunlake participates in numerous local community programs and events. Gunlake’s ongoing annual commitments, recent community commitments and initiatives, and memberships are presented in Table 8.7.

Table 8.7 Gunlake community investment and involvement

Annual commitments	Recent community commitments and initiatives	Membership
Goulburn District Education Foundation (major contributor)	Marulan Public School: major Contributor to Playground upgrade	Goulburn Mulwaree Council: Marulan Village Plan Working Party member
Marulan Australia Day Committee (major sponsor)	Marulan Rural Fire Brigade: major contribution to fire station training room upgrade	Goulburn Secondary Schools Work Experience Placement Program: committee member and participant in local career expos
Tallong Apple Day Festival (major sponsor)	Goulburn Mulwaree Council, Marulan Village Working Party: co-contributor to the barbeque cover	Regional Development Australia: ongoing panel member at a local 'jobs agenda' forums
Marulan Chamber of Commerce Events: Marulan Kite Festival Art Show (major sponsor) and NSW Horologists Exhibition (major sponsor)	Bundanoon Wombat Care: loan of vehicle after bushfires	Marulan Region Chamber of Commerce: member business
Trades training scholarships	Gibraltar Road residents crown road upgrade: donated construction materials	
Goulburn District Education Foundation (major contributor)	Marulan Country Women's Association: co-contributor to the provision of a community defibrillator	
	Partnership with Boral to renew the driveway for the Marulan Uniting Church and Marulan District Historical Society	
	Partnership with Boral to support the production and printing of the 'new' Discover Marulan Magazine	
	Marulan Rural Fire Brigade: provision of 224 tonnes of 20mm roadbase for laydown area adjacent to the shed	

Gunlake's community contributions in the form of grants, sponsorships and donations were noted and commended by several stakeholders during in-depth interviews. Stakeholders explained that these contributions were particularly beneficial in small communities such as Marulan, where "everyone is vying for the same dollar", and funding opportunities for small community initiatives and organisations may not be easily accessible or available. Stakeholders noted that this contributed to local perceptions of Gunlake as a good corporate citizen, and a part of the local community.

Gunlake will maintain their annual contribution commitments to organisations within the local and regional area. Gunlake will also continue to explore funding and grant opportunities within the local and regional area where need is determined. Gunlake will continue their ongoing community and stakeholder engagement strategy to facilitate funding decisions are informed by the local community, including regular meetings with local MP's, Goulburn Mulwaree Council, State and Federal Government authorities, the CCC, local community groups, and local community members.

Gunlake also adopts a shared value approach in their identification of and commitments to community investment and involvement opportunities (see Section 7.3). Examples of continued shared value opportunities for the Continuation Project include the direct provision of training programs and apprenticeship programs, particularly targeting at-risk youth and people struggling to find employment. These are provided based on workforce and supplier needs, in consultation with local employment, apprenticeship and training service providers such as the Goulburn District Education Foundation and Mission Australia. Using this approach, Gunlake is not only addressing local vulnerabilities and social need related to both unemployment of vulnerable persons and increased potential retention of local youth but is increasing the number of local skilled workers who could contribute to the operation of the Continuation Project.

Unenhanced, community benefits related to community investment and involvement is assessed as Significant-12. Assuming the successful approval of the Continuation Project, the likelihood of community benefits community investment and involvement is almost certain. The anticipated positive consequences are desirable, as operation of the Continuation Project would realise in the medium term, with potential permanent benefits for the local and regional economy and community resilience.

8.2.2 Community related to community investment and involvement – enhanced (with social enhancement measures)

The continued shared value approach will ensure that benefits are experienced by both Gunlake and the community which address local community issues. The shared value approach will require ongoing monitoring and recording of feedback from community stakeholders to ensure ongoing identification and prioritisation of community needs and associated shared value opportunities. The enhanced social benefit remains Significant-12. A summary of the assessment is provided in Table 8.8.

Table 8.8 Summary of community related to community investment and involvement

Social impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
 COMMUNITY	Community investment and involvement	Residents of the local area and regional areas	Operation	Local area and regional area	Significant-12	Significant-12

8.2.3 Community related to growth and economic development – unenhanced (no social enhancement measures)

As identified in the *Tableland Regional Community Strategic Plan 2016–2036* (Cardno 2016), Goulburn Mulwaree Council and the Goulburn Mulwaree community recognise the potential for growth opportunities within the Goulburn Mulwaree area. During the SIA field study, in-depth interview participants identified multiple community aspirations related to the development of the local and regional area, including:

- “have additional expertise added to the diversity of Marulan”;
- “increased provision of services”;
- “promote population and job growth”;

- “increase student population to increase the potential to secure additional funding and teachers to enhance education services”; and
- “enhance the attraction [of Marulan] as a place to come to”.

During in-depth interviews, participants expressed that the flow-on economic benefits arising from the continuation of the Quarry through approval of the Continuation Project would create opportunities within the local and regional area, including continued development of industry, associated improvements to infrastructure and services, and general benefits to the local and regional economy. Stakeholders perceived that the provision of additional employment opportunities could lead to a continued increase in population within the local and regional areas, facilitating a multiplier effect for provision of additional employment, business, and service opportunities (due to additional demand) (see Section 7.2).

According to the EIA, exporting sectors are considered to be key drivers of regional economies and reflect a region’s endowments and competitive advantages. Gunlake Quarry is part of the *Non-Metallic Mineral Mining Sector*, and hence is a key driver of the regional economy (Gillespie Economics 2021). The EIA found that the value of residual economic costs of the Continuation Project is considerably less than the estimated net production benefits. Consequently, the Continuation Project is estimated to have net social benefits to both NSW and Australia, and is desirable and justified from an economic efficiency perspective (Gillespie Economics 2021).

The Continuation Project will provide direct economic activity, including jobs, to the local area economy, and indirect economic activity to the local area via both wage and non-wage expenditure (Gillespie Economics 2021). According to the EIA, incremental net income and incremental net employment to local residents as a result of the Continuation Project ramps up to \$1.7 million in net income and 22 jobs from 2026 to 2042. It increases to \$6.2 million in net income and 79 jobs in 2043 and maintains this level of incremental impact until 2051 (Gillespie Economics 2021). The total non-labour expenditure (ie the operating costs of the quarry after subtraction of wages) is \$60 million, with approximately 41% of this estimated to accrue to the Goulburn Mulwaree LGA. Expenditure by employees who reside in the region, and non-labour expenditure that is captured by the local area, will also provide flow-on economic activity to the local economy (Gillespie Economics 2021).

The unenhanced community benefit related to growth and economic development has been assessed as Moderate-7. Pending the approval of the Continuation Project, the likelihood of contributions to continued economic growth and development of the local area and the region has been rated as likely. The positive consequences are assessed to be minor as the benefits are anticipated to be a mild improvement compared to the existing economic benefits of the Quarry, would realise in the medium to long term and are not assumed to be permanent.

8.2.4 Community related to growth and economic development – enhanced (with social enhancement measures)

The operation of the Continuation Project will provide direct and indirect economic benefits to the local area. Gunlake will continue to prioritise local hiring (see Section 8.5.2) and local procurement (see Section 8.5.6) where feasible and where practical to enhance the potential direct economic benefits to employees and contractors, but to the local and regional areas through local spending. As the approval of the Continuation Project is the social enhancement measure, the enhanced community benefit related to growth and economic development remains Moderate-7. A summary of the assessment is provided in Table 8.9.

Table 8.9 Summary of community related to growth and economic development

Social impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
 COMMUNITY	Growth and economic development	Residents of the local area and regional area	Operation and post closure	Local area and regional area	Moderate-7	Moderate-7



8.3 Health and wellbeing impacts

This section provides an assessment of the socially unmitigated and mitigated health and wellbeing social impacts to local and regional communities as a consequence of the Continuation Project. The matter assessed is increased truck movements on the primary haulage route.

8.3.1 Public safety related to increased truck movements on the Primary Transport Route – unmitigated (no social mitigation measures)

The Continuation Project will result in an increase in Quarry product truck movements via the Primary Transport Route (Brayton, Ambrose and Red Hills Roads from the quarry entrance to the Hume Highway) from a maximum of 245 outbound and 245 inbound truck movements per day to a maximum of 375 outbound and 375 inbound truck movements per day. According to the Traffic Impact Assessment (TIA), the five key intersections along the Primary Transport Route currently operate with a level of service A, average delay of less than 14 seconds per vehicle, which will continue in the future with the additional and net cumulative traffic (EMM 2021d).

Public safety concerns related to increased truck movements on the Primary Transport Route was the main potential impact raised by stakeholders during in-depth interviews. Stakeholders raised concerns related to the current speed limit of 100 km/h along the Primary Transport Route, concealed driveways, and cars speeding to pass slower moving trucks as potentially increasing risks of vehicle crashes. Stakeholders also specifically raised public safety concerns related to speed and the intersections of Ambrose/Brayton Road and Ambrose/Red Hill, reporting that these intersections have reduced visibility. Public safety concerns related to increased truck movements on the Primary Transport Route was a key potential social impact raised by local emergency service providers, not only related to the potential for crashes resulting in injury or worse and associated stress considerations, but from the perspective of responding to potential crashes. Several stakeholders, including a representative from a local emergency service, supported a reduction of the current speed limit of 100 km/h to 80 km/h as a potential means of reducing the chances of traffic collisions.

The proposed increase in heavy vehicle movements to and from the Quarry were assessed for impacts on road safety performance, road design, traffic amenity, and the need for a climbing lane (AARB 2021). According to the RSAR (AARB 2021) for the Continuation Project, the impact on road safety for all road users is considered to be negligible. Furthermore, the recorded crash history along the Primary Transport Route does not indicate an existing or developing road safety problem that would be made worse by the proposed increase in heavy vehicle traffic to/from the Continuation Project (AARB 2021).

The Primary Transport Route has been substantially upgraded in accordance with the Austroads Guidelines for rural roads with 1,000 to 3,000 average vehicle movements per day (Austroads 2020) since the Land and Environment Court Approval was granted in 2017. Gunlake and Goulburn Mulwaree Council have implemented a road maintenance work plan and budget to ensure that the Transport Routes are properly maintained by Council using Gunlake Section 7.11 Contributions. Gunlake are in discussions with the road authority, Goulburn Mulwaree Council, regarding any future road upgrades and the inspection and renewal program. Gunlake will continue to fund maintenance of the Primary and Secondary Transport Routes when and where required. As part of the recent road upgrades of Brayton Road financed by Gunlake, safe school bus collection/drop off points have also been built along Brayton Road, as school buses travel to collect/drop off school children along this route each school day. These upgrades have resulted in compliance with the Austroad Guidelines, and employs concepts similar to those used on major highways such as the Newell Highway and Kings Highway. With the proposed truck numbers, along with existing traffic volumes, the road will continue to operate well within its design capacity, thereby contributing to road safety. The benefits of the upgrades to the Primary Transport Route related to public safety were raised during the SIA field study and EIS engagement activities, with stakeholders reporting the widening of the median strip provides additional opportunities to react to driving errors and general feelings of increased safety on the Primary Transport Route due to the completed upgrades.

As stated in the RSAR (AARB 2021), no speed limit signs are present along the Primary Transport Route. Therefore, the default rural speed limit of 100 km/h applies. As an additional road safety initiative, Gunlake has implemented a corporate policy that restricts its heavy vehicle fleet to travelling a maximum of 80 km/h along the access routes (and lower where signposted). This acknowledges the effect that vehicle speed has on crash likelihood and severity outcome and the consequential and material effect of speed on the level of road safety risk along the route. Adopting a reduced maximum speed limit along the transport routes is an appropriate road safety risk management measure (AARB 2021). Gunlake also implements driver inductions, including a driver code of conduct, requiring compliance with road safety procedures and prohibiting unsafe driving practices such as tailgating, convoying, and speeding. Gunlake actively monitors compliance with the above policies and encourages local residents to report any instances of unsafe driving of Gunlake vehicles using Gunlake's community engagement mechanism.

Without any social mitigation measures (ie 'unmitigated'), the public safety impact related to increased truck movements on the Primary Transport Route is assessed as Medium-8. With Gunlake's current road safety mitigation measures in place, the likelihood of public safety impacts related to increased truck movements is unlikely. The negative consequences are assessed as moderate as social impacts related to public safety, including perceptions of public safety, could survive the life of the Continuation Project.

8.3.2 Public safety related to increased truck movements on the primary haulage route – mitigated (with social mitigation measures)

Vehicle speed affects crash likelihood and severity outcomes, with speed having a consequential and material effect on the level of road safety risk (AARB 2021). Vehicle travel speeds affect both the risk of crash involvement and the severity of crashes, including severity of sustained injuries. Reductions in the average travel speed across the network is regarded as the most effective and swift way to reduce road trauma (WHO 2004; De Pauw 2014; TfNSW 2021).

Gunlake has been lobbying to reduce the current speed limit of 100 km/h along the Primary Transport Route to 80 km/h. This is a strategy that is supported by Goulburn Mulwaree Council, State and Federal MP's and members of the local community. Speed limits are set in accordance with the NSW Speed Zoning Guidelines and are the responsibility of TfNSW. Gunlake will continue to liaise with TfNSW to explore the potential to reduce the speed limit along the Primary Transport Route.

It is recommended that Gunlake also give consideration to actioning the recommendations of the RSAR (AARB 2021) to improve road safety objectives along the Primary Transport Route, including installation of T-intersection warning signage on each approach to the intersections of Ambrose/Brayton Road and the Ambrose/Red Hill Road.

The RSAR (AARB 2021) found that based on the current the speed limit (100 km/h), “the impact on road safety for all road users is considered to be negligible, with an assessment concluding no major road safety hazards were identified which may result from the proposed increase in heavy vehicle volumes”. With the implementation of an 80 km/h and the mitigation measures recommended by the RSAR (AARB 2021), the mitigated public safety impact related to truck movements is further reduced to Low-6. A summary of the assessment is provided in Table 8.10.

Table 8.10 Summary of public safety related to increased truck movements

Social impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Increased truck movements on the primary haulage route	Local residents, particularly those residing along the Primary Transport Route and users of the Primary Transport Route	Operation	Local area, particularly along the Primary Transport Route	Medium-8	Low-6



8.4 Accessibility impacts

This section provides an assessment of the socially unmitigated and mitigated social impacts related to accessibility and the matters that impact the access to and use of infrastructure, services and facilities as a consequence of the proposed Project. The matter assessed is demand on emergency services.

8.4.1 Accessibility related to demand on emergency services – unmitigated (no social mitigation measures)

The local area is largely serviced by emergency services located in the regional area. There are two emergency service units operating within the local area in Marulan, a Rural Fire Brigade and a Police Station. During in-depth interviews, local emergency service providers explained that local emergency services are generally well resourced. COVID-19 has resulted in increased demand on emergency services. One local emergency service provider identified that there are insufficient ambulance services within the local area, explaining that the closest ambulance service is in Goulburn, and that it is often busy. The next closest ambulance service is in Moss Vale.

As discussed in Section 8.3.1, increased truck movements on the Primary Transport Route were a key issue raised by local emergency service providers from the perspective of responding to potential crashes. Based on previous crash data along the Primary Transport Route from 2014–2019, most crashes along the primary and secondary transport routes resulted in serious injury. None of the crashes on the Primary and Secondary Transport Routes in the 2015–2019 period related to Gunlake heavy vehicles (ARRB 2021; EMM 2021d). As such, the recorded crash history along these Transport Routes do not indicate an existing or developing road safety problem that would be made worse by the proposed increase in heavy vehicle traffic to/from the Quarry (AARB 2021).

Gunlake will maintain their existing relationships with local emergency services to ensure that any accessibility impacts related to demand on emergency services are identified and communicated early and consistently. This includes ongoing provision of Project updates to emergency services and updating emergency response protocols and procedures in consultation with emergency services, as required, due to any flagged service capacity issues.

Gunlake will also continue to offer the Quarry as a training ground to local emergency services, creating shared value by providing the opportunity for local emergency services to not only ensure that they are equipped to respond to emergencies at the Quarry, but improve their capability and capacity to respond to emergencies throughout the local and regional areas in general. Gunlake has also contributed to improved emergency response capacity within the local area through their contribution of a community defibrillator at the Marulan IGA.

The unmitigated accessibility impact related to demand on emergency services is assessed as Low-6. It is unlikely that the Continuation Project will contribute to accessibility impacts, with negative consequences anticipated to be marginal due to the recorded crash history along the Primary and Secondary Transport Routes, as well as Gunlake’s current relationships and protocols with local emergency services.

8.4.2 Accessibility related to demand on emergency services – mitigated (with social mitigation measures)

Adherence to Gunlake’s current engagement strategies with emergency services are anticipated to manage potential accessibility impacts related to demand on emergency services to ensure that the likelihood and consequence of potential impacts are not increased as a consequence of the Continuation Project. Furthermore, mitigation of public safety impacts related to increased trucks along the Primary Transport Route (ie advocating for a reduction in the speed limit along the Primary Haulage Route) (see Section 8.3.2) could have an additional flow-on benefit of reducing potential accessibility impacts related to demand on emergency services. The mitigated impact remains Low-6. A summary of the assessment is provided in Table 8.11.

Table 8.11 Summary of accessibility related to demand on emergency services

Social impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
 ACCESS TO INFORMATION/ SERVICES	Demand on emergency services	Residents of the local area and regional area	Operation	Local area and regional area	Low-6	Low-6



8.5 Livelihood benefits

This section provides a detailed assessment, socially unenhanced and enhanced positive impacts related to livelihood as a consequence of the Continuation Project. The matters assessed are:

- ongoing and increased local employment;
- training and apprenticeship opportunities; and
- use of local goods and services.

8.5.1 Livelihood related to ongoing and increased local employment – unenhanced (no social enhancement measures)

The Quarry currently provides about 52–55 full-time positions, and about 20 contractors work on the Quarry site. The workforce is expected to increase to 70 full-time positions for the Continuation Project, with increased opportunities for the contractors. Additionally, approximately 200 truck drivers deliver Quarry products, on either a full-time or part-time basis, and there are expected to be continued, and increased, opportunities for the approximately 200 truck drivers that deliver quarry products, on either a full-time or part-time basis with many of these drivers transitioning from a part-time to a full-time basis.

As of September 2020, 32.7% of the Gunlake Quarry workforce lived in Marulan (within the local area), another 30.9% lived in Goulburn Mulwaree LGA (within the regional area), 21.7% lived in Wingecarribee LGA (within the regional area), and the remaining 14.7% lived outside of the local and regional areas. It is anticipated that workforce residence patterns will be similar during the operation of the Continuation Project.

According to the 2016 Census of Population and Housing, the local area has an unemployment rate of 5.8%, which is higher than that of the regional area (4.7%) but lower than the NSW average (6.3%) (ABS 2016), see Section 5.3. Although the unemployment rates within the local area and region area were lower compared to greater NSW at the time of the 2016 Census, there were still unemployed persons within the local and regional area, including persons who would be qualified for employment within the Continuation Project. As technicians and trades workers, labourers, and machinery operators and drivers were the top occupations within the local area (15.9%, 14.8% and 12.9% of the working population, respectively) (ABS 2016) and a certificate qualification was by far the top qualification in the local area amongst persons with a non-school qualification (49.6%) (ABS 2016) it is reasonable to assume that there are people living within the local area have the necessary qualifications to contribute to the operation of the Continuation Project. Similar trends are also apparent within the regional area.

During in-depth interviews, participants across a range of stakeholder groups consistently identified employment arising from the Continuation Project as a significant potential benefit, both related to ongoing employment and increased employment opportunities from the Continuation Project. Stakeholders noted that the local area is dependent on direct and indirect employment provided by local quarries and emphasised the importance of ensuring long-term sustainable employment opportunities within extractive industries.

Studies show that ongoing local employment creates a multitude of local benefits, including continued provision of income for local workers, recirculation of a greater share per dollar into the local economy due to local supply chains and investment in local employees (Civic Economics 2012, 2013), and improved community well-being and resilience (Adams 2018).

Unenhanced, the benefit from ongoing and increased local employment during the operation of the Continuation Project is assessed as Moderate-8. The likelihood of livelihood benefits related to ongoing and increased employment is likely, with anticipated minor positive consequences as benefits will realise in the medium to long term and are anticipated to result in benefits to the local economy.

8.5.2 Livelihood related to ongoing and increased local employment – enhanced (with social enhancement measures)

Gunlake currently contributes an annual trades training scholarship of \$10,000 to the local community. Gunlake also liaises with local employment services who offer training, apprenticeship and traineeship services, and employment support services to identify potential training and apprenticeship opportunities, including taking on at-risk and vulnerable apprentices.

Gunlake currently adopts a preferential approach to hiring which prioritises employment of workers with relevant skills residing within the local area, then the regional area, followed by hiring outside of these areas. This ensures that potential employees within the local and regional areas receive first preference for prospective jobs, increasing the potential benefits related to local and regional employment.

Gunlake will also continue to work with local employment, apprenticeship and training organisations to enhance the potential of hiring of local and regional workers (see Section 8.5.4), minimising the need to hire workers from outside of the local and regional areas. Partnership with local employment and training organisations could specifically benefit at-risk youth and people struggling to find employment by providing direct employment opportunities (see Section 8.5.3).

These commitments to local hiring would also assist to address compounding underlying social factors associated with vulnerabilities within the local area related to a lack of rental housing. SIA field study participants noted that the region has seen a great increase in demand for rental and market properties in the past year, largely as a consequence of the COVID-19 pandemic with increasing number of people choosing to relocate to less-urban locations. If local rental accommodation was inundated with the additional need to service demand from an increased Continuation Project’s workforce that was from outside of the region, this would likely increase housing scarcity and a further decrease in rental affordability. In turn, this would most likely impact residents who are already vulnerable and may not have the flexibility and resources to find alternative housing.

Enhanced, the livelihood benefit related to ongoing and increased local employment remains as Moderate-8. A summary of the assessment is provided in Table 8.12.

Table 8.12 Summary of livelihood related to ongoing and increased local employment

Social impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
 LIVELIHOOD	Ongoing and increased local employment	Residents of the local area and regional area	Operation	Local area and regional area	Moderate-8	Moderate-8

8.5.3 Livelihood related to training and apprenticeship opportunities – unenhanced (no social enhancement measures)

During in-depth interviews, stakeholders raised the potential benefit associated with providing training and upskilling opportunities to local workers and youth in the local and regional areas. Community service providers also identified potential opportunities related to collaboration between Gunlake and local/regional employment and training services in the provision of apprenticeship and training opportunities.

The provision of training opportunities can increase job satisfaction amongst employees, resulting in increased productivity and quality of work (Truitt 2011; Australian Government 2020). Additionally, training and upskilling employees leads to improved company competitiveness due to maximisation of employee knowledge and innovation (Marin-Diaz, et al 2014).

Gunlake currently allocates \$10,000 to a trades training budget for local youth. Gunlake liaises with local employment services who offer training, apprenticeship and traineeship services, and employment support services to identify potential training and apprenticeship opportunities. Gunlake will continue partnerships with local employment and training services in the local and regional area, such as TAFE, Mission Australia, and the Goulburn District Education Foundation, to find apprenticeship and employment opportunities for workers who have been upskilled, started an apprenticeship program, or who are interested in beginning an apprenticeship program. Training and upskilling programs should continue to focus on engaging and training/educating disadvantaged people, Aboriginal and/or Torres Strait Islander people, unemployed, and young people with a view to employing recent graduates.

These measures could continue to provide shared value legacy benefits (see Section 8.2.4) which not only provide skilled workers for Gunlake operations but enhance the local workforce’s overall capacity. This would provide a more skilled local workforce in general, with the potential to contribute to reductions in local and regional unemployment, particularly amongst vulnerable groups, attracting future opportunities and investments in the local area. To maximise the potential benefits, Gunlake actively transitions apprentices and trainees into long-term stable employment. Gunlake will continue their current partnerships with local employment, apprenticeship and training organisations to not only identify training and apprenticeship opportunities, but employment opportunities following completion of traineeships and apprenticeships.

The continued provision of apprenticeship and training opportunities is expected to encourage residents, predominantly youth, to stay within the local area rather than relocate for education and work opportunities (see Section 7.4). Continuing to explore opportunities for additional local training and apprenticeship opportunities could also reduce current pressures on the local housing and rental market (see Section 8.5.2), as it could increase the availability of skilled workers within the local and regional areas, thereby reducing the need to source workers from outside the local and regional areas.

Unenhanced, the livelihood benefit related to training and apprenticeship opportunities is assessed as Significant-11. The likelihood of livelihood benefit is likely, with desirable anticipated positive consequences.

8.5.4 Livelihood related to training and apprenticeship opportunities – enhanced (with social enhancement measures)

Enhanced, the livelihood benefit related to training and apprenticeship opportunities remains Significant-11. Under the assumption that Gunlake continues to successfully identify and facilitate training and apprenticeship opportunities, and transition apprentices and trainees into long-term stable employment, the likelihood of benefit remains ‘likely’. Positive consequences also remain desirable as livelihood benefits in the form of employment may or may not be permanent, with anticipated benefits to both the local and regional economy. A summary of the assessment is provided in Table 8.13.

Table 8.13 Summary of livelihood related to training and apprenticeship opportunities

Social impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
 LIVELIHOOD	Training and apprenticeship opportunities	Residents of the local area and regional area	Operation	Local area and regional area	Significant-11	Significant-11

8.5.5 Livelihood related to use of local goods and services – unenhanced (no social enhancement measures)

During the SIA field study, a representative from the Marulan Chamber of Commerce noted that several chamber members benefit from the local quarries, including Gunlake, through their procurement of local good and services, such as maintenance, electrical, and plumbing services required for project maintenance and operation. There is the potential for ongoing local procurement of goods and services required for the operation of the Continuation Project, resulting in increased opportunities for revenue for local business and therefore having a positive impact on livelihoods.

During in-depth interviews, stakeholders also identified potential indirect flow-on benefits arising from use of local goods and services by employees and contractors, such as spending in local retail shops and use of local services (public and private).

Accordingly, the positive consequence of the unenhanced Continuation Project has been assessed as being Moderate-7. The likelihood of local procurement has been assessed as likely as local procurement mechanisms and strategies are already in place and have previously occurred during operation of the Gunlake Quarry. The positive consequence of the unenhanced benefit is assessed as minor as the local economy will benefit, with benefits realised in the medium term.

8.5.6 Livelihood related to use of local goods and services – enhanced (with social enhancement measures)

To maximise local benefits derived from the Continuation Project, Gunlake will continue to support local business by utilising their established supply networks and providing sufficient opportunities and information for local businesses to secure new supply contracts. Wherever possible and practical, Gunlake works with the Marulan Chamber of Commerce, local businesses, and the local community to prioritise and use local goods and services.

As the continued operation of the Quarry is the enhancement measure, the enhanced livelihood benefit related to use of local goods and services remains Moderate-7. A summary of the assessment is provided in Table 8.14.

Table 8.14 Summary of livelihood related to use of local goods and services

Social impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
 LIVELIHOOD	Use of local goods and services	Businesses within the local area and regional area	Operation	Local area and regional area	Moderate-7	Moderate-7

8.6 Cumulative impacts

There are several concurrent development projects operating or intended to operate in and around the area of social influence. These projects may contribute cumulative impacts in addition to those anticipated as a consequence of the Continuation Project. A summary of potential cumulative impacts of nearby SSD projects as identified through the NSW DPIE (2021) Major Projects website in construction and operational phases is given in Table 8.15.

Table 8.15 Concurrent development projects

LGA	Project name	Anticipated timeframe/ project life	Development type	Status	Construction workforce	Operational workforce
Goulburn Mulwaree	Parkebourne Solar Farm	Construction to commence 2023 to be fully operational by 2025	Electricity Generation - Solar	Prepare EIS	NA	NA
Goulburn Mulwaree	Goulburn Poultry Processing Mixed Use Development	NA	Livestock	Response to Submissions	88	264
Goulburn Mulwaree	Goulburn Base Hospital Redevelopment	Construction commenced in 2018, anticipated for completion in late 2021	Hospitals, medical centres and health research facilities	Approved 3 December 2018	200	45
Goulburn Mulwaree	Marulan Quarry	18 years	Extractive industries	Prepare EIS	10	10
Goulburn Mulwaree	Marulan Solar Farm	Construction to commence 2022 to be fully operational by 2023	Electricity Generation - Solar	Prepare EIS	200	5
Goulburn Mulwaree	Woodlawn MBT Facility	25 years	Waste collection, treatment and disposal	Approved 6 November 2007	25	18
Goulburn Mulwaree Queanbeyan-Palerang Regional	Jupiter Windfarm	NA	Electricity Generation - Wind	Withdrawn	NA	NA
Goulburn Mulwaree Queanbeyan-Palerang Regional	Capital Wind Farm	NA	Electricity Generation - Wind	Approved 7 November 2006	50	5
Goulburn Mulwaree	Carrick Solar Farm	NA	Electricity Generation - Solar	Withdrawn	NA	NA
Goulburn Mulwaree	Jerrara Power Energy from Waste Facility	25 years (construction and commissioning 3-years)	Waste collection, treatment and disposal	Prepare SEARs	300	60
Goulburn Mulwaree	Peppertree Quarry	30 years	Extractive industries	Approved 28 February 2007	20	30
Goulburn Mulwaree	Marulan South Limestone Mine Continued Operations Project	30 years	Extractive industries	Approved 19 August 2021	NA	191

Table 8.15 Concurrent development projects

LGA	Project name	Anticipated timeframe/ project life	Development type	Status	Construction workforce	Operational workforce
Goulburn Mulwaree	Woodlawn Advanced Energy Recovery Centre	NA	Electricity generation - Other	Prepare EIS	300	40
Goulburn Mulwaree	Woodlawn Mine	NA	Minerals mining	Approved 4 July 2013	NA	NA
Goulburn Mulwaree	Woodlawn Bioreactor Expansion	25 years	Waste collection, treatment and disposal	Approved 16 March 2012	NA	37
Wingecarribee	New Berrima Quarry	65 years	Extractive industries	Approved 9 July 2012	NA	45
Wingecarribee	Bowral & District Hospital Redevelopment	Completed in 2020	Hospitals, medical centres and health research facilities	Approved 21 February 2019	225	No increase (existing 450+ staff)
Wingecarribee	Southern Waste Management Facility	NA	Waste collection, treatment and disposal	Prepare EIS	NA	15
Wingecarribee	Moss Vale Plastics Recycling Facility	NA	Other manufacturing	Prepare EIS		120-150
Wingecarribee	Berrima Rail Upgrade Project	15-month construction phase	Coal Mining	Recommendation	40	16
Wingecarribee	Green Valley Quarry	NA	Extractive industries	Approved 21 June 2013	NA	NA
Wingecarribee	Sutton Forest Sand Quarry	30 years	Extractive industries	Response to Submissions	20	20
Wingecarribee	New Berrima Brickworks Facility	NA	Other manufacturing	Approved 28 May 2021	NA	78
Total					1,478	1,029

Source: DPIE (2021), Major Projects

A total of 24 state significant development (SSD) projects were identified within the area of social influence, consisting of 15 in Goulburn Mulwaree LGA and 9 in Wingecarribee LGA. Of these projects, ten have been approved, six are currently preparing EIS, two are responding to submissions, two have been withdrawn, two are responding to recommendations, one is preparing SEARs, and one requires more information.

The three main development types are extractive industries, electricity generation (including solar, wind and other), and waste collection, treatment, and disposal. All six extractive industry SSDs were quarries (three have been approved), highlighting the strong existing quarrying industry within the local area. Depending on if and when each projects proceed, this could impact the availability of skilled workforce in the local area, requiring additional Project workforce to be sourced from outside the local and regional areas. Other development types within the area of social influence included manufacturing, coal mining, hospitals, minerals mining, coal mining and livestock. Local construction and general labour workforce availability may also be impacted by concurrent developments. However, there is potential for an increase in local job availability supported by a number of SSDs to drive industry growth in the local region.

The potential of a non-resident and relocating workforce from concurrent developments may contribute to cumulative impacts in the local area. This may result in impacts on the capacity and availability of local service providers, accommodation providers, local business, and traffic. However, potential cumulative benefits may also be associated with the high number of SSD projects in the local area, such as increased employment and economic opportunities for local businesses and suppliers.

The known operational workforce associated with SSD projects in the area of social influence is expected to be approximately 1,029 full time equivalent employees. The demand for skilled operational workforce in key sectors may increase the likelihood of cumulative socio-economic impacts locally and regionally. However, a high demand for long-term operational workforce within the local area has the potential to create economic benefits, as well as general growth and relocation in the local area.

8.6.1 Amenity

Potential cumulative impacts to local amenity may occur due to the number of SSD projects in the local area, as well as the proximity of projects to residential areas and towns. A key issue that was raised during the SIA field study was the impact on amenity caused by blasting at local quarries. Given the high number of quarries in the region, blasting is expected to occur frequently, creating noise and vibration experienced by local residents. Blasting is undertaken and monitored in accordance with guidelines and quarry's consent conditions to prevent damage to buildings and structures. It is suggested that local communities are kept informed of upcoming blasting events, to minimise any stress or surprise associated with noise and vibration impacts (see Section 8.1.4). Gunlake currently liaises with other quarries in the area to address potential noise and vibration impacts from a cumulative perspective to minimise the potential impact collectively. Other cumulative impacts on amenity may include dust from local quarries and mine sites, as well as noise caused by project machinery and traffic.

8.6.2 Traffic

Traffic was raised as a key issue during the SIA field study in relation to concurrent projects and developments in the local area. Additionally, the large number of quarries were perceived to contribute to cumulative impacts related to traffic throughout the local area, as these projects are expected to require frequent truck movements to transport product from the project sites. The prospect of additional quarry construction, operational and workforce vehicles was identified by stakeholders as a major potential impact on local traffic. Increased congestion and traffic may also impact local workers travelling to and from site, impacting travel time and the ability to commute to work efficiently and safely. It is noted that Gunlake is the only Quarry within the local area to use the Primary and Secondary Transport Routes. The TIA has assessed the cumulative traffic impacts of the Continuation Project considering the future traffic generation of existing and approved projects and developments. This includes five other quarries/mines and a residential subdivision in the broader locality (EMM 2021d). According to the TIA, the five key intersections currently operate with a LOS A and will continue to operate with a LOS A with the proposed traffic and the net cumulative traffic from the other quarries in the area (including if current applications for all quarries are approved) and recent residential development (EMM 2021d). Furthermore, frequent vehicles, as well as heavy and oversized loads were perceived by in-depth interview participants to have a cumulative impact on the overall quality of local roads and highways, with potential to cause road degradation over time (discussed further in Section 8.6.4).

i Public safety

The RSAR (ARRB 2021) and Traffic Impact Assessment (EMM 2021d) consider the potential cumulative traffic impacts of the Continuation Project, particularly associated with heavy vehicle movements, including a road safety assessment along the Primary Transport Route, suitability of existing road design, and heavy vehicle climbing land assessment along Ambrose Road (AARB 2021). The impact on road safety for all road users is considered to be negligible, with an assessment concluding no major road safety hazards were identified which may result from the proposed increase in heavy vehicle volumes. Additionally, the recorded crash history along the Primary Transport Route does not indicate an existing or developing road safety problem that would be made worse by the proposed increase in heavy vehicle traffic to/from the Gunlake Quarry.

8.6.3 Employment and industry

Employment and longevity of local industry associated with the Continuation Project was considered a major benefit by local residents during in-depth interviews. The significant presence of extractive industry projects, specifically quarries, creates cumulative benefits related to the longevity of industry and employment in the local area. Various stakeholders discussed the importance of maintaining employment opportunities, especially in extractive industries. Quarries were identified as a primary source of local employment during in-depth interviews, with one individual stating “Marulan relies on quarries”. As such, the community recognised significant benefits associated with a large number of ongoing projects and developments in the extractive industries sector to create ongoing long-term employment opportunities. This was also noted to have potential benefits for population growth in the town, as local residents discussed the large number of individuals and families that have historically relocated to the area to work in quarries. The presence of additional quarrying projects may help ensure workers have the prospect of ongoing long-term employment opportunities in the local and regional areas.

8.6.4 Infrastructure

A potential cumulative benefit as a consequence of concurrent SSD projects is improvements to local infrastructure. This issue was raised during in-depth interviews, relating to general socio-economic growth in local towns, recreational development, and road and general infrastructure improvements. The potential socio-economic benefits associated with significant industry and SSD projects in the local area may lead to benefits for community development, such as new shops and businesses opening, improvements to public infrastructure and recreation facilities, general population growth and increased housing developments (see Section 8.6.5ii).

During in-depth interviews, stakeholders perceived the increased number of vehicles associated with local projects to potentially contribute to cumulative impacts on the degradation of roads without regular maintenance arrangements. However, road maintenance is currently addressed through arrangements whereby quarries pay a levy, generally based on the tonnage of material transported, to fund ongoing maintenance of the roads that they are using. Road improvements, including recent upgrades of the Primary and Secondary Transport Routes by Gunlake, were perceived as a key benefit amongst local residents. Given the high number of local quarries, residents felt that road improvements were unavoidable in order to support future industry, creating flow on benefits for local commuters. Funding from local quarrying companies to maintain and develop roads was also raised as a key benefit.

8.6.5 Services

Local socio-economic growth associated with local projects and development has the potential to increase the funding and presence of local social and health services. Population and community growth may create opportunities for more schools, childcare facilities, hospitals, specialists, and recreational activities, as well as more general social, health, emergency (see Section 8.6.5i), and community services. Another potential cumulative benefit of the large number of local projects is related to significant combined community contribution, economically and otherwise. During the SIA field study, local community investment and contributions from local quarries was raised as a significant benefit, with one resident stating “quarries generally seem to assist the community” with donations and materials such as gravel for local carparks.

i Emergency services

During in-depth interviews, local emergency service providers explained that local emergency services are generally well resourced. However, COVID-19 has resulted in increased demand on emergency services. One local emergency service provider also identified that ambulance services within the local area are currently under significant demand. A representative from a local emergency service organisation highlighted that the high number of quarries and large projects in the area could create significant additional demand amongst local first responders, especially with auto alarm systems that are frequently triggered.

During in-depth interviews, a local emergency service provider identified an opportunity for emergency services to work in partnership with local quarries and industries to ensure that emergency services are prepared to respond to emergency situations. Opportunities include a review of premises and procedures by emergency services to identify any risks or gaps in current emergency service response situations, and development of response plans and consequence management guides in collaboration with Gunlake and other facilities within the area. This would allow emergency services to identify where additional resources may be required, provide opportunities to secure additional funding to address any current capacity issues, and would better equip the services to respond to emergencies throughout the local and regional areas.

ii Rental housing

In June 2020, the vacancy rate of the local area was below 3.0% (1.9%), before rising to 2.2% in October 2020, suggesting the rental market in the local area is tight, consistent with the low number of properties available to rent and low proportion of rented dwellings (ABS 2016). This is consistent with findings from the SIA field study, with participants identifying high rental costs and a lack of rental housing available within the local area.

Increased demand for skilled workforce within the quarrying industry, as well as demand on trades skills more generally, may arise with the construction and operation of concurrent SSD projects. This may cause potential impacts on the availability of skilled workforce in the local area, requiring additional Project workforce to be sourced from outside the local and regional areas, which may increase demand on rental housing within the local and regional areas.

This has significant potential consequences for persons currently at risk of financial hardship, housing instability and homelessness, particularly in the context of COVID-19, which has further contributed to increased rents and lower rental availability in regional areas of Australia, including the Goulburn Mulwaree area, due to migrations from urban centres to more regional and rural areas (Anglicare 2021, Goulburn Post 2021). Commitments to local hiring, provision of training and apprenticeship opportunities for local workers, and partnership with local employment and training services reduce the need for outsourcing of workers.

9 Mitigation and management

This section provides a summary of the identified social impacts along with the corresponding perceived stakeholder risk ratings and mitigated technical risk rankings. In addition, key potential stakeholder partners have been identified to participate in the monitoring and management of impacts, along with a range of proposed social impact mitigation and management strategies. Note that not all potential impacts will be the responsibility of the proponent to mitigate or manage, their role may be to cooperate or inform the mitigation, provide data and information, through to direct responsibility for mitigation and management of the identified potential social impacts and the opportunity for partnerships. A summary is provided in Table 9.1. This section also provides a monitoring and management framework.

Table 9.1 Summary of mitigation and management strategies

Social impact	Matter	Unmitigated	Mitigated	Responsibility	Potential partners	Proposed mitigation and management
 LIFESTYLE	Amenity impacts related to traffic noise	Medium-8	Medium-8	Gunlake	NA	Maintenance of community engagement mechanism (ie dedicated Project phone number and Project email) will continue to manage potential amenity impacts due to noise from road traffic on residents. Gunlake will continue to monitor their community engagement mechanism to assess whether there is an increase in issues related to road noise specifically.
 LIFESTYLE	Amenity impacts related to noise from quarry operation	Low-7	Negligible-4	Gunlake	NA	<p>Gunlake will continue to implement mitigation measures currently in place at the Quarry to reduce the potential noise and vibration impacts on nearby neighbours. Gunlake will also continue to undertake operational noise compliance monitoring on a quarterly basis.</p> <p>Maintenance of current blasting notification procedure. Gunlake will maintain their current blasting notification procedure. Gunlake should consider communicating with residents within the 2 km radius who are not already registered to advise them of the blasting notification procedure and enable them to register if interested. Consideration should be given to liaising with other quarries in the area in further developing their notification procedure with the intention of addressing potential cumulative noise and vibration impacts from blasting to minimise the potential impact collectively.</p>
 LIFESTYLE	Amenity related to dust	Low-7	Low-7	Gunlake	NA	Quarry operations will continue to be managed in accordance with the <i>Gunlake Quarry Air Quality Management Plan</i> (Gunlake 2020). This plan will be reviewed and updated as required following approval of the Continuation Project. To manage any community concerns related to dust, Gunlake will continue to maintain their community engagement mechanism to ensure any amenity concerns related to dust generated by the Continuation Project are captured and addressed.

Table 9.1 Summary of mitigation and management strategies

Social impact	Matter	Unmitigated	Mitigated	Responsibility	Potential partners	Proposed mitigation and management
	Community benefit related to community investment and involvement	Significant-12	Significant-12	Gunlake	Marulan Chamber of Commerce Local businesses	<p>Gunlake will continue to provide community support in the form of their annual contribution commitments to organisations within the local and regional area. Gunlake will also continue to explore funding and grant opportunities within the local and regional area where need is determined. Gunlake will continue their ongoing community and stakeholder engagement strategy to facilitate funding decisions are informed by the local community.</p> <p>Gunlake will continue their shared value approach in their identification of future community funding opportunities, employment, apprenticeship and training opportunities, and community involvement opportunities.</p>
	Community benefit related to growth and economic development	Moderate-7	Moderate-7	Gunlake	Marulan Chamber of Commerce Local businesses Local employment and training services in the local and regional area, such as TAFE, Mission Australia, and the Goulburn District Education Foundation	<p>The operation of the Continuation Project will provide direct and indirect economic benefits to the local and regional area. Gunlake will continue to prioritise local hiring and local procurement where feasible and where practical to enhance the potential direct economic benefits to employees and contractors, as well as to the local and regional areas through local spending.</p>

Table 9.1 Summary of mitigation and management strategies

Social impact	Matter	Unmitigated	Mitigated	Responsibility	Potential partners	Proposed mitigation and management
	Public safety related to increased truck movements on the Primary Transport Route	Medium-11	Low-6	Gunlake (road maintenance funding, driver inductions) TfNSW (reduction of 100 km/h speed limit)	Emergency services Goulburn Mulwaree Council	<p>The Primary Transport Route has been substantially upgraded in accordance with the Austroads Guidelines for rural roads with 1,000 to 3,000 average vehicle movements per day (Austroads 2020) since the Land and Environment Court Approval was granted in 2017. Gunlake and Goulburn Mulwaree Council have implemented a road maintenance work plan and budget to ensure that the Transport Routes are properly maintained by Council using Gunlake Section 7.11 Contributions. Gunlake will continue to fund maintenance of their primary and secondary transport routes when and where required. Driver inductions, including a driver code of conduct, requiring compliance with road safety procedures and prohibiting unsafe driving practices such as tailgating, convoying, and speeding. Gunlake has implemented a corporate policy that restricts its heavy vehicle fleet to travelling a maximum of 80 km/h along the access routes (and lower where signposted). Adopting a reduced maximum speed limit along the transport routes is an appropriate road safety risk management measure (AARB 2021). It is also recommended that T-intersection warning signage should be installed on each approach to the intersections of Ambrose/Brayton Road and the Ambrose/Red Hill Road (AARB 2021).</p> <p>It is recommended that Gunlake advocate for a reduction in the speed limit from 100km/h to 80 km/h along the Primary Transport Route.</p>
	Accessibility related to demand on emergency services	Low-6	Low-6	Gunlake (liaison with emergency services)	Emergency services	Gunlake will maintain their existing relationships with local emergency services to ensure that any accessibility impacts related to demand on emergency services are identified and communicated early and consistently. This includes ongoing provision of Project updates to emergency services and updating emergency response protocols and procedures in consultation with emergency services, as required due to any flagged service capacity issues.

Table 9.1 Summary of mitigation and management strategies

Social impact	Matter	Unmitigated	Mitigated	Responsibility	Potential partners	Proposed mitigation and management
 LIVELIHOOD	Livelihood benefit related to ongoing and increased employment	Moderate-8	Moderate-8	Gunlake	Local employment and training services in the local and regional area, such as TAFE, Mission Australia, and the Goulburn District Education Foundation	<p>Gunlake currently adopts a preferential approach to hiring which prioritises employment of workers with relevant skills residing within the local area, then the regional area, followed by hiring outside of these areas. This will ensure that potential employees within the local and regional areas receive first preference for prospective jobs.</p> <p>Gunlake will also continue to work with local employment, apprenticeship and training agencies to enhance the potential of hiring of local and regional workers thereby minimising the need to hire workers from outside of the local and regional areas. Partnership with local employment and training agencies could create specifically benefit at-risk youth and people struggling to find employment by providing direct employment opportunities.</p> <p>Provision of apprenticeship and training opportunities.</p>
 LIVELIHOOD	Livelihood benefit related to training and apprenticeship opportunities	Significant-11	Significant-11	Gunlake	Local employment and training services in the local and regional area, such as TAFE, Mission Australia, and the Goulburn District Education Foundation Local quarries and extractive industries	To maximise the potential benefits, Gunlake actively transition apprentices and trainees into long-term stable employment. It is recommended that Gunlake will continue their current partnerships with local employment, apprenticeship and training organisations to not only identify training and apprenticeship opportunities, but employment opportunities following completion of traineeships and apprenticeships.
 LIVELIHOOD	Livelihood benefit related to use of local goods and services	Moderate-7	Moderate-7	Gunlake	Marulan Chamber of Commerce Local businesses	To maximise local benefits derived from the Continuation Project, Gunlake will continue to support local business by utilising their established supply networks and providing sufficient opportunities and information for local businesses to secure new supply contracts. Wherever possible and practical, Gunlake works with the Marulan Chamber of Commerce, local businesses, and the local community to prioritise and use local goods and services.

9.1 Monitoring and management framework

It is proposed that a monitoring and management framework be developed to ensure that the identified positive and negative impacts are monitored over time to measure the effectiveness or otherwise of the proposed management measures, including the changing conditions and trends in the Goulburn Mulwaree and Wingecarribee regions over the same period.

It is proposed that the monitoring and management framework identifies the following key aspects:

- track progress of mitigation and management strategies;
- assess actual project impacts against predicted impacts;
- identify how information will be captured for reporting to impacted stakeholders including landholders, communities and government on progress and achievements;
- key performance indicators, targets and outcomes;
- responsible parties; and
- mechanisms for ongoing adaption of management measures when and if required.

To ensure the effectiveness of the management measures for the identified positive and negative impacts, it is recommended that a continuous improvement approach be adopted allowing for the review and adaption of impacts, management measure and outcomes.

An approach that ensures stakeholders from various sections of the community are regularly informed and given the opportunity to participate and collaborate is recommended.

Gunlake's current community and stakeholder engagement strategy includes provisions that provide information and encourage community feedback related to (but not limited to):

- updates on the status and life of the Continuation Project; and
- identification of ongoing shared value opportunities within the local community.

Gunlake's community and stakeholder engagement strategy incorporates a range of communication strategies and opportunities for the community to provide feedback through a variety of channels including:

- CCC meetings;
- community engagement mechanism (ie dedicated phone number, email, and complaints register);
- community information sessions;
- stakeholder briefings;
- newsletters; and
- letterbox drops.

The community engagement strategy applies the instruments that best fit the overall needs of the Continuation Project. The approach also ensures that mechanisms for both information dissemination and feedback collection are incorporated. Consideration should be given to aligning a social impact monitoring and management framework within Gunlake's existing community and stakeholder engagement strategy.

10 Acronyms

Table 10.1 Acronyms

Acronym	
ABS	Australian Bureau of Statistics
AHD	Australian Height Datum
AHMAC	Australian Health Minister's Advisory Council
AHRC	Australian Human Rights Commission
AIHW	Australian Institute of Health and Welfare
AQIA	Air Quality Impact Assessment
CCC	Community Consultative Committee
CESP	Community Engagement Strategy & Communications Plan
CPP	Community Participation Plan
CSE	community and stakeholder engagement
CSP	the <i>Tablelands Regional Community Strategic Plan 2016–2036</i>
DAWE	Department of Agriculture, Water and the Environment
DCP	<i>Goulburn Mulwaree Development Control Plan 2009</i>
DPE	Department of Planning and Environment (now DPIE)
DPIE	Department of Planning, Industry and Environment
EIA	Economic Impact Assessment
EIS	environmental impact statement
EPA	NSW Environment Protection Authority
EP&A	<i>Environmental Planning and Assessment Act 1979</i>
EMM	EMM Consulting Pty Limited
GP	general practitioner
Gunlake	Gunlake Quarries Pty Ltd
Gunlake Quarry Continuation Project	the Continuation Project
IAIA	International Association for Impact Assessment
IFC	International Finance Corporation
kilometre	km
LEC	Land and Environment Court
LEP	local environmental plan
LGA	Local Government Area
LHD	Local Health District
LSPS	Local Strategic Planning Statement
NIA	Noise Impact Assessment

Table 10.1 **Acronyms**

Acronym	
NSC	National Skills Commission
PM2.5	particulate matter less than 2.5 microns in aerodynamic diameter
PM10	particulate matter less than 10 microns in aerodynamic diameter
RNP	<i>Road Noise Policy</i>
RSAR	Road Safety Assessment Report
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SIA Guideline 2017	<i>Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development</i>
SIA Guideline 2021	<i>Social impact assessment guideline for state significant projects</i>
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSC	State Suburb Classification
SSD	state significant development
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment
the Regional Plan	<i>the South East and Tablelands Regional Plan</i>
the Quarry	The Gunlake hard rock quarry
the Quarry site	Lot 13 DP 1123374
TSP	total suspected particles
VET	vocational education and training
WHO	World Health Organisation

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Appendix A

Social Baseline Study

A.1 Purpose

A social baseline study is a requirement of the New South Wales (NSW) with *the Social impact assessment guideline: for State significant mining, petroleum production and extractive industry development* (SIA Guideline 2017) (DPE 2017). The baseline study describes the existing population and social conditions of potentially affected communities within the social impact assessment (SIA) study area which form the benchmark against which the social impacts are assessed. The Guideline states that a social baseline is crucial to understand the relevant pre-existing social pressures (DPIE 2020). Although all social indicators assessed in the social baseline study will not necessarily be impacted, it is imperative to obtain a thorough understanding of the social conditions and trends in the study area. Gaining a broad understanding of the study area allows us to differentiate between, and measure, a change that is likely to occur as a consequence of the project as opposed to what would have likely occurred without the project (IAIA 2015). Accordingly, this social baseline identifies the study area for the Gunlake Quarry Continuation Project (the Continuation Project) and its existing known and predicted social conditions for its community.

A.2 Area of social influence

The Quarry is located within the Brayton State Suburb Classification (SSC) area, and is adjacent to the townships of Marulan and Carrick. These suburbs are likely to experience the most direct impacts of the Project. While the site itself is localised, direct and indirect impacts may be farther reaching. As such, the Continuation Project is considered to have two key areas of social influence: a local area and regional area.

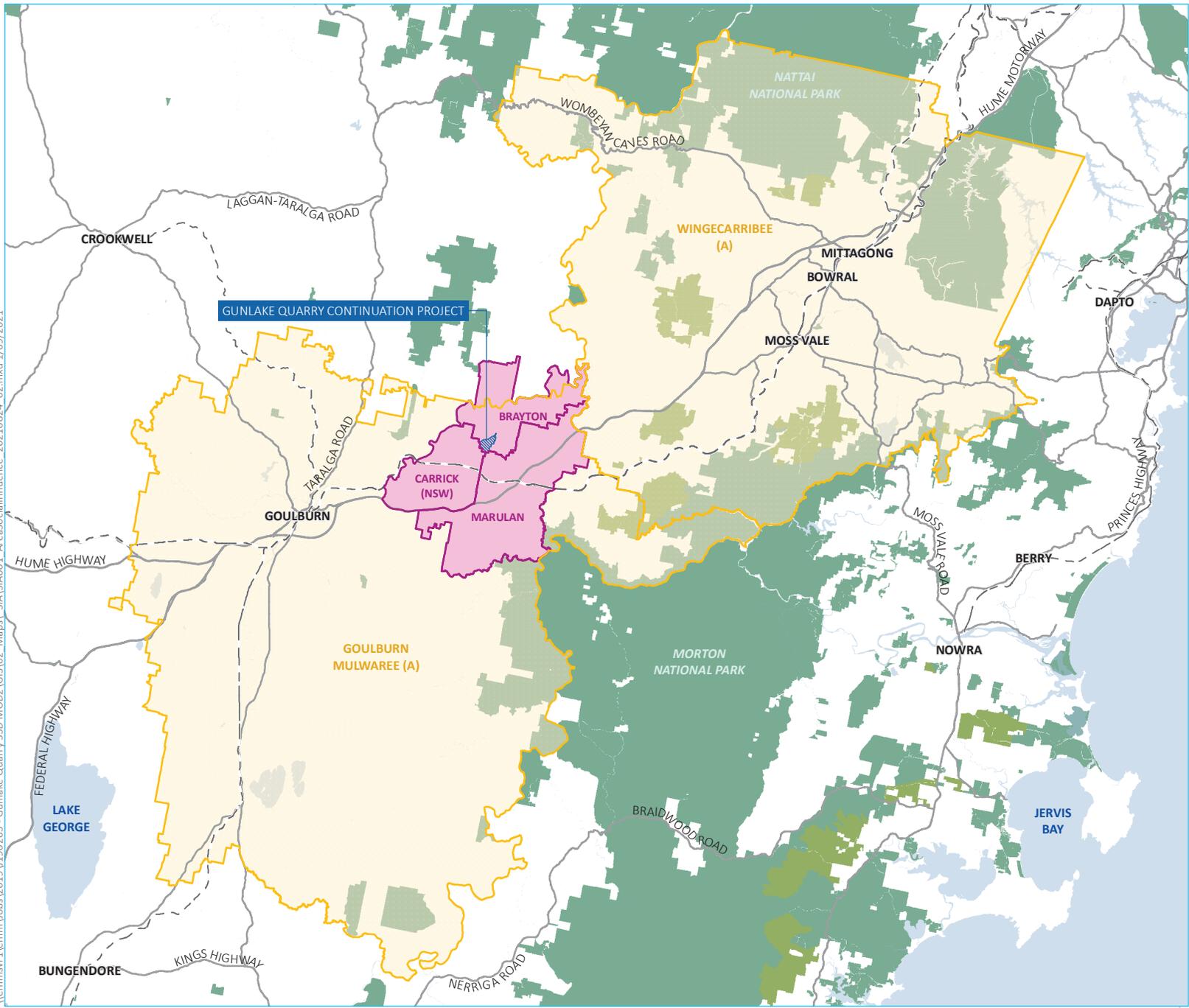
The Project may have direct and indirect impacts within Brayton, Marulan, and Carrick related to local social infrastructure and services, local workforce, local business and industry, local housing and accommodation, and community health and wellbeing. Accordingly, these suburbs comprise the local area of social influence (local area).

The Continuation Project is likely to have a broader reach due to use of infrastructure, supply chains, haulage routes, transportation of goods, materials and equipment, the movement of its workforce (some of which may have drive-in-drive-out arrangements) and cumulative impacts arising from other projects in the area (DPE 2017). These factors require the area of social influence to include regional areas likely to be impacted by the Project. Accordingly, Goulburn Mulwaree Local Government Area (LGA) and Wingecarribee LGA comprise the regional area of social influence.

These communities have been mapped to the ABS categories used for data collection (see Table A.1) and the local and regional area of social influence (hereto referred to as local area or regional area), illustrated in Figure A.1.

Table A.1 Area of social influence

Area of social influence	Geographic area	ABS data category	Referred to in report as:
Local area of social influence	Marulan	State suburb classification (SSC)	Local area
	Brayton		
	Carrick		
Regional area of social influence	Goulburn Mulwaree Council area	Goulburn Mulwaree LGA	Regional area
	Wingecarribee Shire Council area	Wingecarribee LGA	
State of New South Wales	State of New South Wales	New South Wales STE	NSW



- KEY**
- Gunlake Quarry Continuation Project
 - Local area
 - Regional area
 - Rail line
 - Major road
 - Waterbody
 - NPWS reserve
 - State forest

Area of social influence

Gunlake Quarry Continuation Project
Social Impact Assessment
Figure 5.1



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Source: EMM (2021); DFSI (2017); ABS (2016)



A.3 Demographic profile

According to the 2016 Census of Population and Housing, the local area, has a total population of 1,487 people. Most of these people reside in Marulan (1,178), with a small portion residing in Brayton (173) and Carrick (136). From 2006–2016, the population of the local area increased by 52.2%. This rise in population is contributable to an increase of 118.1% in Marulan, contrasted by a 60.4% decrease in Brayton. The population trend in the local area differs from the NSW trend where population has experienced a gradual rise in population over time.

The population of the regional area in 2016 was 77,491 with a 2019 estimated population of 82,266. The regional area experienced 5.1% population growth from 2006–2011, and 7.8% growth from 2011–2016. The total population change from 2006–2016 was 13.4%. Trends for the regional area are similar to those across NSW.

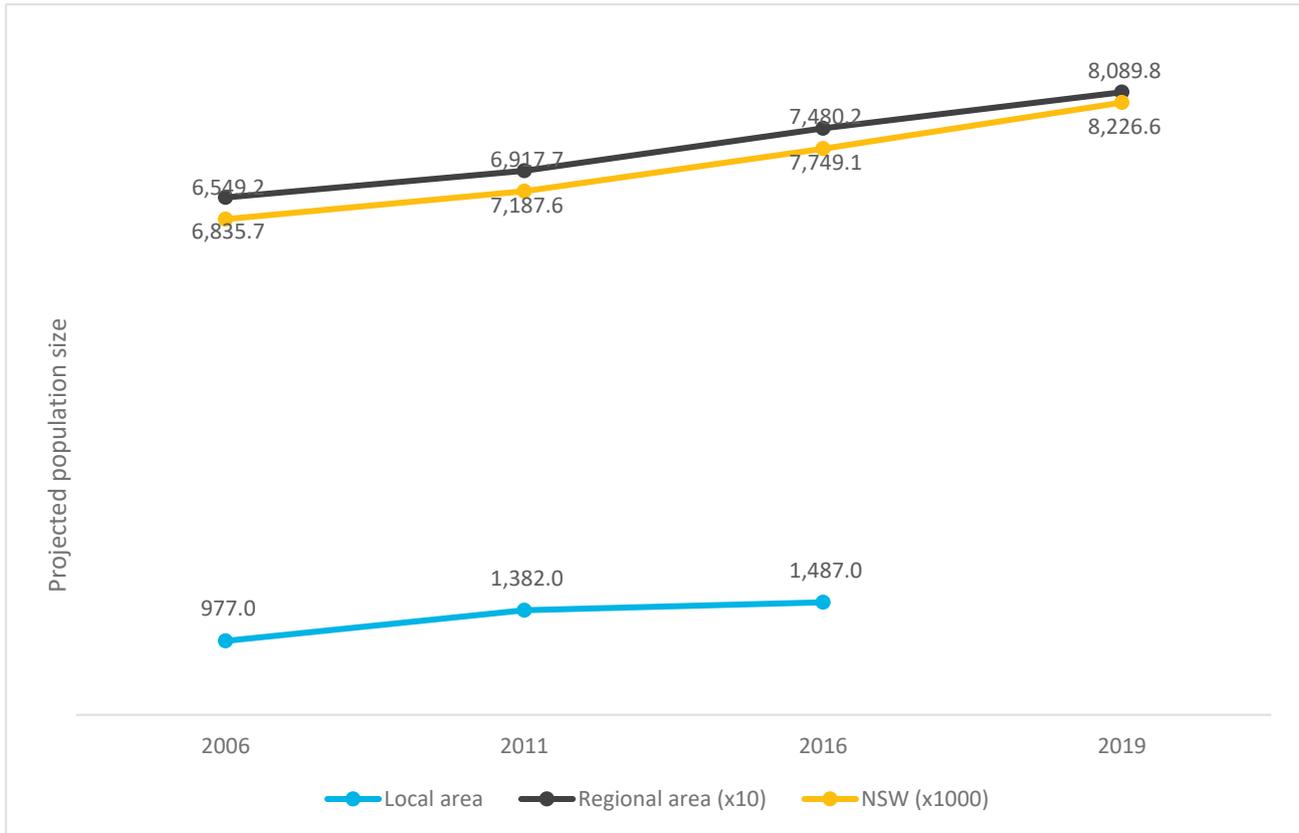
The population trends within the area of social influence are presented in Table A.2 and population trends from 2006–2019 are presented Figure A.2.

Table A.2 Population trends, 2006–2016

Location	2006	2011	2016	2019 ¹	Total % change 2006–2011	Total % change 2011–2016	Total % change 2006–2016
Marulan	540	1,382	1,178	--	155.9%	-14.8%	118.1%
Brayton	437	.. ³	173	--	NA	NA	-60.4%
Carrick	.. ²	.. ³	136	--	NA	NA	NA
Local area	977	1,382	1,487	--	41.5%	7.6%	52.2%
Goulburn Mulwaree LGA	26,085	27,481	29,609	31,132	5.4%	7.7%	13.5%
Wingecarribee LGA	42,272	44,395	47,882	51,134	5.0%	7.9%	13.3%
Regional area	68,357	71,876	77,491	82,266	5.1%	7.8%	13.4%
NSW	6,549,174	6,917,656	7,480,228	8,089,817	5.6%	8.1%	14.2%

Source: ABS 2016, Census of Population and Housing: General Community Profiles; ABS 2019, 3218.0 – Regional Population Growth, Australia 2017-18.

Notes: 1. The population indicated in 2019 is a rebased estimate of the resident population of provided by the ABS, while the population data for 2006, 2011, and 2016 is provided from the 2016 Census.
2. Population data was not available for Carrick for 2006.
3. Population data was not available for Brayton and Carrick for 2011.



Source: ABS 2016, Census of Population and Housing: General Community Profiles; ABS 2019, 3218.0 – Regional Population Growth, Australia 2017-18.

Figure A.2 Population trends, 2006–2019

Projected population data for the area is only available for the LGA level. Trends for the regional area are assumed to be similar in the local area (though may potentially be lower given past trends in Brayton (see Table A.2)).

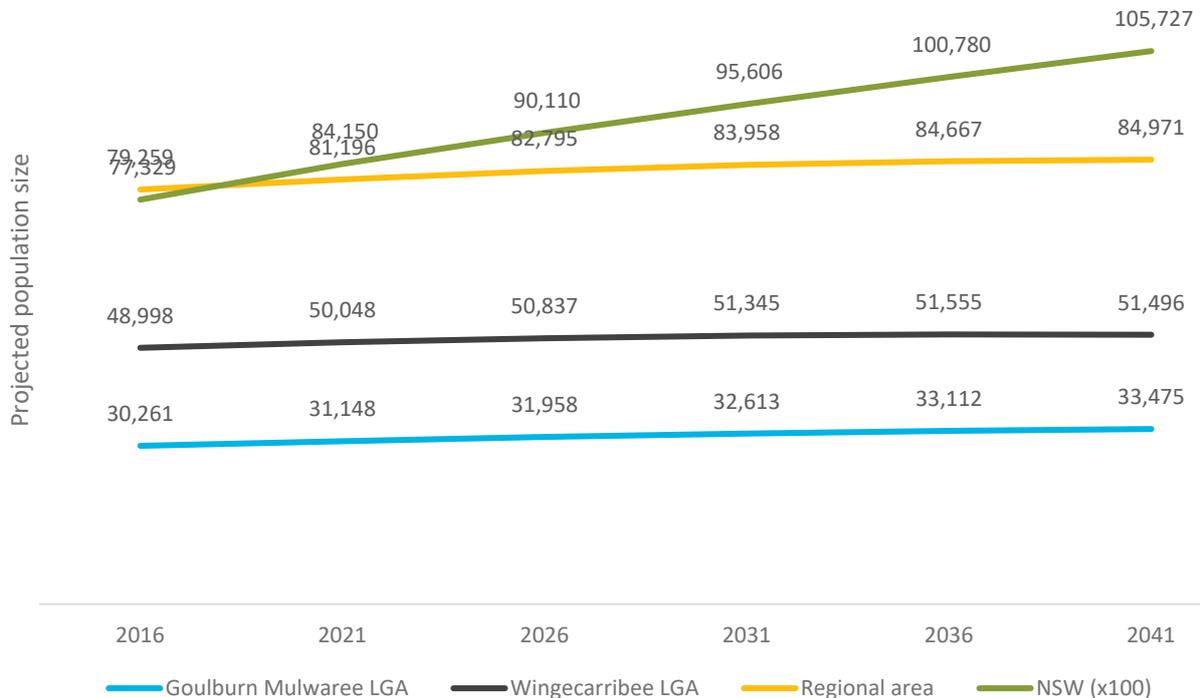
Population projections published by DPIE (2019) suggest that the projected population of the regional area is estimated to increase by 5,712 people from 79,259 in 2016 to 84,971 in 2041, representing a total increase of 7.2% and an average annual increase of 0.3%. The population of Goulburn Mulwaree LGA is estimated to increase by 3,214 people from 2016–2041, representing a total change of 10.6% and an average annual growth rate of 0.4%, while the population of Wingecarribee LGA is estimated to increase by 2,498 people from 2016–2041, representing a total change of 5.1% and an average annual growth rate of 0.2%. Projected population growth within the regional area is much lower than the trend projected for NSW, with a 36.7% total increase and average annual increase of 1.5%. These projections indicate a large proportion of rural to urban migration, particularly from more regional areas like the local area. This migration could be influenced by people seeking education or work opportunities not readily available in regional communities and enhanced access to community, social and health services (AIHW 2005; Hugo, & Harris 2011; D’Alessandro & Bassu 2015). The slower rate of population growth in the regional area may also reflect the aging population within the local and regional area (see Section A.3.1) as aging populations are associated with lower fertility rates and ultimately shrinking populations (Jarzebski et al. 2021). Population projections for the regional area are presented in Table A.3 and Figure A.3.

Table A.3 Projected population¹, 2016–2041

	2016	2021	2026	2031	2036	2041	Total change 2016–2041	Total % change 2016–2041	Average annual growth rate 2016–2041
Goulburn Mulwaree LGA	30,261	31,148	31,958	32,613	33,112	33,475	3,214	10.6%	0.4%
Wingecarribee LGA	48,998	50,048	50,837	51,345	51,555	51,496	2,498	5.1%	0.2%
Regional area	79,259	81,196	82,795	83,958	84,667	84,971	5,712	7.2%	0.3%
NSW	7,732,858	8,414,978	9,011,010	9,560,567	10,077,964	10,572,696	2,839,838	36.7%	1.5%

Source: DPIE 2019, NSW 2019 Population Projections: ASGS 2019 LGA projections

Notes: 1. Population projection data was not available at the SSC level.
 2. The projected population has been determined by using the ABS ERP population count which takes Census counts of people where they usually live (accounting for interstate visitors and removing overseas visitors), adjusts for Census undercount and overcount using the Census Post Enumeration Survey (PES), adds in Australians who are temporarily overseas, and applies further demographic adjustments.



Source: DPIE 2019, NSW 2019 Population Projections: ASGS 2019 LGA projections.

Figure A.3 Projected population, 2016–2041

A.3.1 Population by age and sex

In the local area, the largest age groups are persons aged 45–54 years (14.5%), 55–64 years (12.6%), and 35–44 years (11.8%). The local area also has a higher proportion of persons aged 65 years and older (18.7%) compared to NSW (16.3%), but lower than the regional area (23.4%). This suggests an older population in the local area and regional area compared to NSW. This is also reflected in the median ages across the local area and regional area, which includes 41 years in Marulan, 48 years in Brayton, 47 years in Carrick, 43 years in Goulburn Mulwaree LGA and 47 years in Wingecarribee LGA, all of which are older than the median age across NSW (38 years).

There is a slightly smaller proportion of youth aged 15–24 in the local area (10.6%) and regional area (10.8%) compared to NSW (12.5%). This may be indicative of the rural and remote character of the region, with fewer tertiary education and job opportunities for young people (see Section A.5.2 and Section A.8). However, there is a larger proportion of persons aged 14 years and younger in the local area (21.4%) compared to the regional area (18.0%) and NSW (15.6%). This suggests demand for primary schools and middle schools in the local area may be high.

The age group distribution and median age is presented in Table A.4.

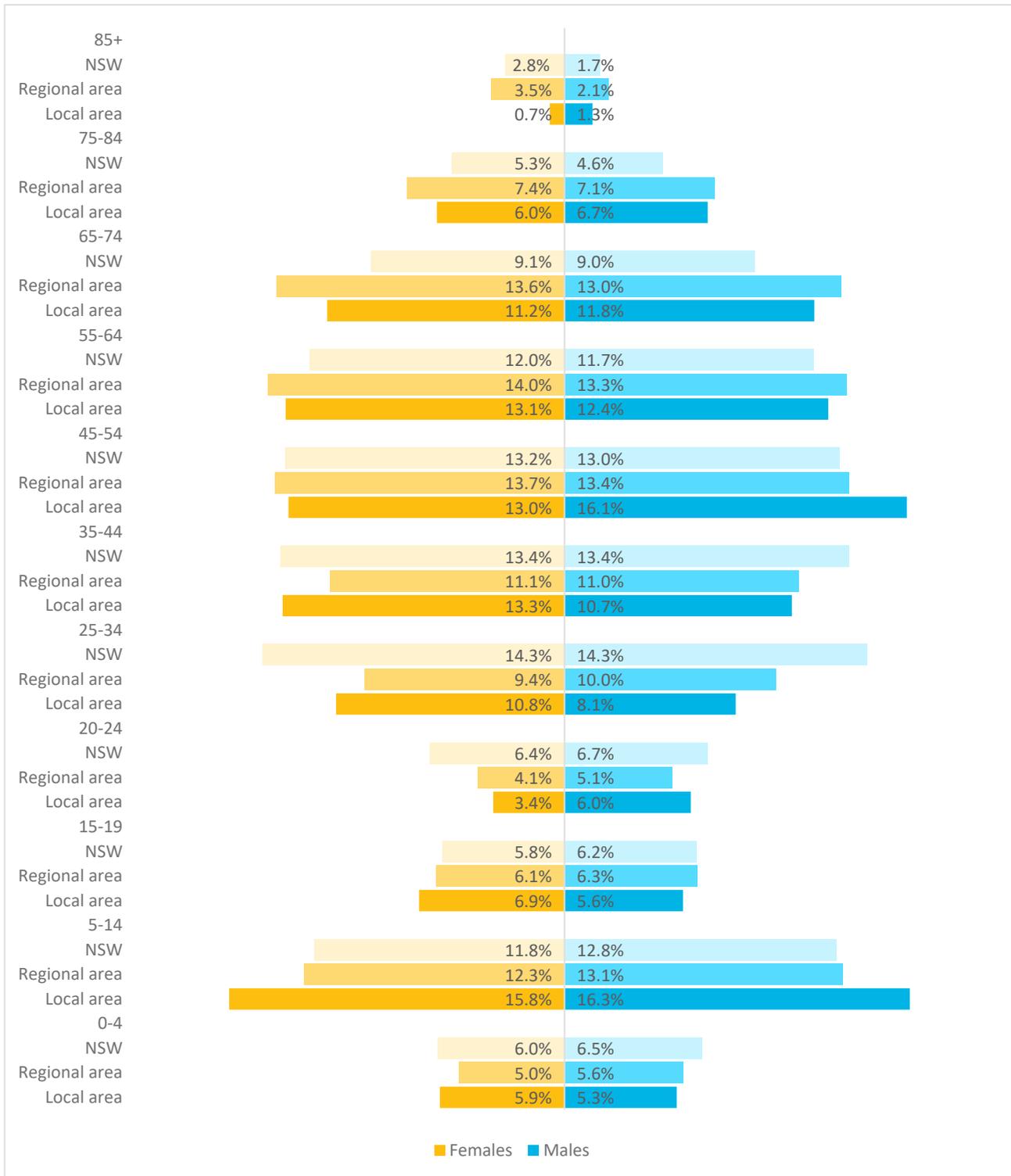
Table A.4 Aged group distribution and median age, 2016

	0–4 years	5–14 years	15–19 years	20–24 years	25–34 years	35–44 years	45–54 years	55–64 years	65–74 years	75–84 years	85 years and older	Median age of persons 2016
Marulan	5.7%	16.0%	5.9%	5.2%	9.8%	12.7%	13.8%	12.5%	11.5%	6.0%	1.3%	41
Brayton	6.9%	17.3%	7.5%	1.7%	9.2%	7.5%	15.6%	12.7%	11.6%	9.2%	0.0%	48
Carrick	2.2%	12.5%	5.1%	3.7%	4.4%	9.6%	18.4%	14.0%	10.3%	5.1%	0.0%	47
Local area	5.5%	15.9%	6.0%	4.6%	9.3%	11.8%	14.5%	12.6%	11.4%	6.3%	1.0%	NA
Goulburn Mulwaree LGA	5.9%	12.7%	5.9%	5.6%	12.0%	11.9%	13.6%	13.3%	11.0%	6.0%	2.5%	43
Wingecarribee LGA	4.9%	12.7%	6.3%	3.9%	8.3%	10.6%	13.5%	13.9%	14.8%	8.1%	3.0%	47
Regional area	5.3%	12.7%	6.2%	4.6%	9.7%	11.1%	13.6%	13.7%	13.3%	7.3%	2.8%	NA
NSW	3.3%	12.3%	6.0%	6.5%	14.3%	13.4%	13.1%	11.9%	9.1%	5.0%	2.2%	38

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

The distribution of males and females in the local area is 51.4% male and 48.6% female (ABS 2016a). In NSW, the proportion of females (50.7%) is higher than males (49.3%). This difference in sex distribution between the area of social influence and NSW may be attributable to the main industries of employment (see Section A.8), lower proportion of family households, and higher proportion of lone households (see Section A.7.1) in the local and regional areas.

When considering the distribution of males and females, the largest demographics in the local area are males 5–14 years (16.3%), males 45–54 years (16.1%) and females 5–14 years (15.8%). The age group distribution and median age for the study area is presented in Table A.4. The distribution of the population by age and sex is presented in Figure A.4.



Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Figure A.4 Population distribution, 2016

A.3.2 Aboriginal and/or Torres Strait Islander population

At the time of the 2016 Census, 3.1% of the total population within the local area and 2.8% of the regional area population identified as Aboriginal and/or Torres Strait Islander. This proportion in the local area is slightly higher than the proportion of the population who identify as Aboriginal and/or Torres Strait Islander in NSW (3.0%). However, the proportion of people who identify as Aboriginal and/or Torres Strait Islander in the regional area is slightly lower. The proportion of Aboriginal and/or Torres Strait Islander persons in the study area is presented in Table A.5.

Table A.5 Aboriginal and/or Torres Strait Islander persons as percentage of population, 2016

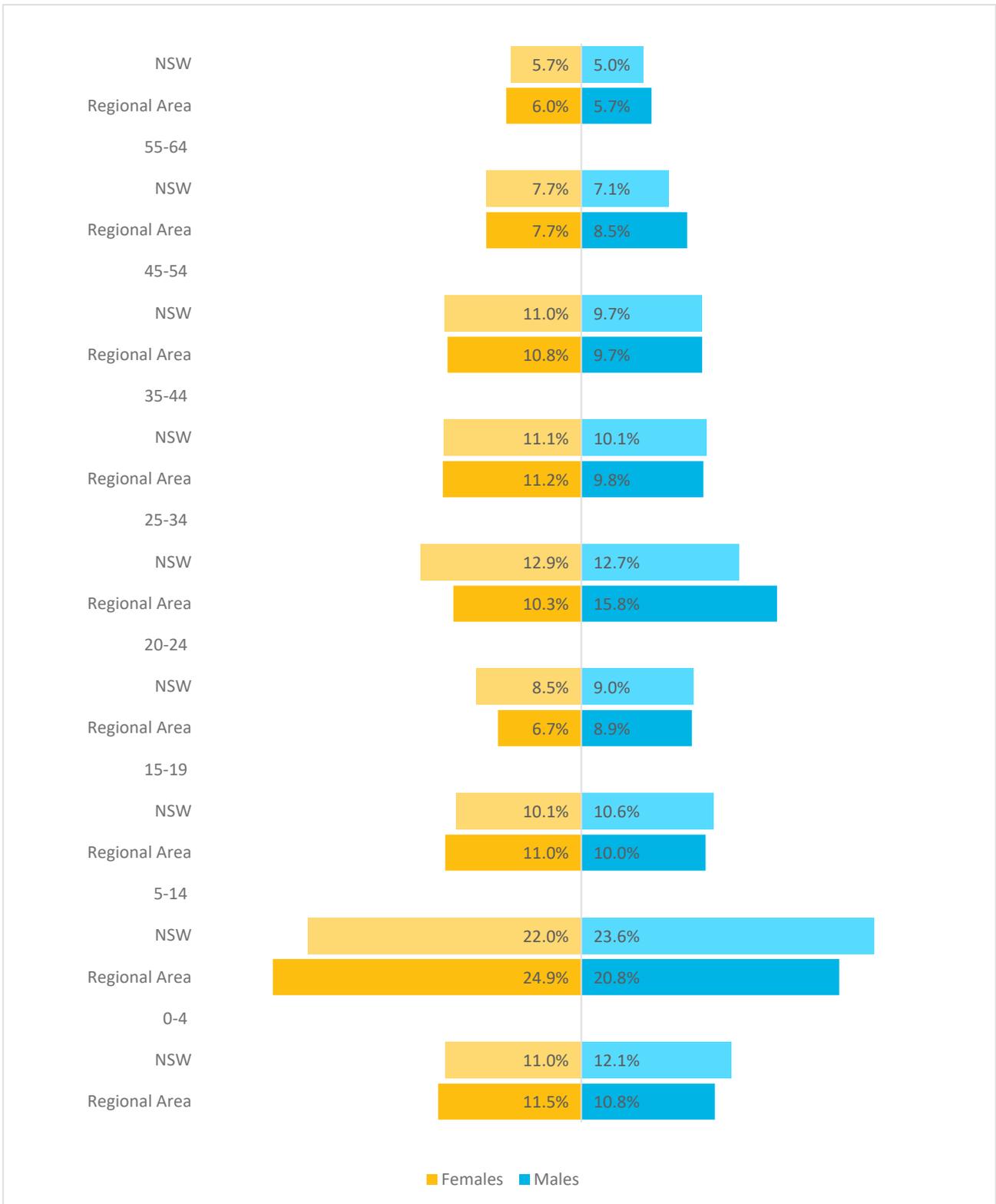
Location	Aboriginal and/or Torres Strait Islander population
Marulan	3.9%
Brayton	0.0%
Carrick	0.0%
Local area	3.1%
Goulburn Mulwaree LGA	4.0%
Wingecarribee LGA	2.0%
Regional area	2.8%
NSW	2.9%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Data relating to the age distribution and sex of persons who identify as Aboriginal and/or Torres Strait Islander is not available for the local area³.

Within the regional area, there is a higher proportion of Aboriginal and/or Torres Strait Islander females (50.3%) compared to males (49.8%). The largest demographic in the Aboriginal and/or Torres Strait Islander community in the regional area is children (aged 5–14 years). Compared to the total population of the regional area and NSW, there is a much smaller proportion of persons aged 65 years and older who identify as Aboriginal and/or Torres Strait Islander. The Aboriginal population's smaller proportion of the population (both males and females) living beyond 65 years aligns with the lower life expectancy among Aboriginal Australians nationally that is particularly acute in Aboriginal males (AIHW 2019), with much of this gap is explained by the relationships between increased socio-economic disadvantage, worsened mental health outcomes, and related health risk behaviours, including greater proportions of smoking and alcohol use (AHMAC 2017). The distribution of persons who identify as Aboriginal and/or Torres Strait Islander within the study area is presented in Figure A.5.

³ There are small random adjustments made to all cell values to protect the confidentiality of data. These adjustments may cause age group distributions to differ by small amounts from actual totals which may result in more extreme population distributions in areas with small populations, such as those amongst the Aboriginal and/or Torres Strait Islander populations within the suburbs that comprise the local area.



Source: ABS 2016, Census of Population and Housing: General Community Profiles

Figure A.5 Population distribution of Aboriginal and/or Torres Strait Islander persons, 2016

A.3.3 Socio-economic advantage and disadvantage

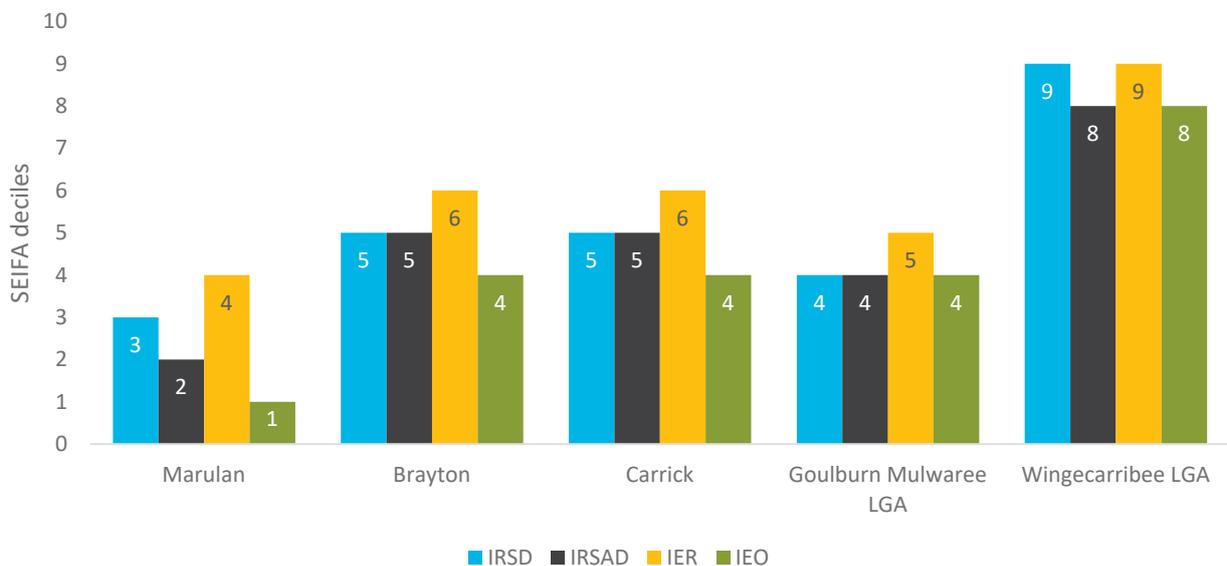
The level of disadvantage or advantage in the population is indicated in the Socio-Economic Indexes for Areas (SEIFA) which focuses on low-income earners, relatively lower education attainment, high unemployment and dwellings without motor vehicles. SEIFA is a suite of four summary measures that were created from Census data, including:

- the Index of Relative Socio-Economic Disadvantage (IRSD);
- the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD);
- the Index of Education and Occupation (IEO); and
- the Index of Economic Resources (IER).

Each index is a summary of a different subset of Census variables and focuses on a different aspect of socio-economic advantage and disadvantage. Low rankings are deemed most disadvantaged and high rankings least disadvantaged within a decile ranking system where the lowest 10% of areas within Australia are given a decile number of 1 and the highest 10% of areas are given a decile number of 10.

According to the 2016 SEIFA, there is some variation in terms of socio-economic advantage and disadvantage between communities within the local area. Marulan in local area falls within decile 1 for IEO, 2 for IRSAD, 3 for IRSD and 4 for IER. This means that compared to other suburbs across NSW, there is likely a higher proportion of households with low income, residents without qualifications (see Section A.5), and residents in low skill occupations (A.6). Additionally, there is likely a smaller proportion of households with high incomes and in skilled occupations. A low IEO could also be indicative of a higher number of unemployed persons compared to other areas of NSW, however the unemployment rate in the Marulan is lower than that of NSW as a whole so this is likely not the case (see Section A.6). Brayton and Carrick within the local area experience similar levels of advantage and disadvantage, with a decile ranking of 5 for IRSD, 5 for IRSAD, 6 for IER and 4 for IEO. This suggests a medium level of disadvantage and advantage within these suburbs compared to other suburbs across NSW.

Within the Goulburn Mulwaree LGA, the SEIFA scores indicate that these areas experience a medium amount of overall socio-economic disadvantage and advantage compared to other LGAs across NSW, with rankings of 4–5 across each of the SEIFA indexes. This could indicate that these areas likely have a medium amount of people with higher education qualifications and working in skilled occupations, a more equal amount of people with high and low incomes, and a more balanced amount of more households earning higher incomes and owning their own homes compared to other LGAs within NSW. The higher levels of disadvantage and lower levels of advantage in Goulburn Mulwaree LGA may also reflect the slightly higher proportion of Aboriginal and/or Torres Strait Islander population compared to NSW (see Section A.3.2). However, compared to other LGAs across NSW there are higher levels of advantage and lower levels of disadvantage within Wingecarribee LGA, with rankings of 8–9 across each of the SEIFA indexes. The rankings of the communities within the area of social influence for each of the four summary measures are demonstrated in Figure A.6.



Source: ABS 2016, 2033.0.55.001 – Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA).

Figure A.6 SEIFA deciles in the study area, 2016

A.3.4 Vulnerable groups

i Cultural diversity

Compared to NSW averages, the local area and regional area have a lower level of cultural diversity compared to greater NSW. In 2016, 79.4% of the local area population was Australian born. Australian-born persons also constitute a much higher proportion of the population in the regional area (79.2%) compared to NSW (65.5%). The local area and regional area also have a much higher proportion of intergenerational Australians, with 65.0% of people in the local area and 70.0% of people in the regional area with both parents born in Australia, compared to 45.4% across NSW (ABS 2016a). A significantly smaller proportion of households in the local area (5.0%) and regional area (4.8%) speak a non-English language at home compared to 26.5% in NSW. The lower proportion of migrants in the local area and regional area is representative of the trend of migrants within Australia to settle in major cities over smaller regional areas, which can be driven by a greater availability of support services for newly arrived migrants, job opportunities, education opportunities, well-established transportation and service infrastructure, and long-term multicultural histories of major cities with existing migrant communities (Australian Chamber of Commerce and Industry 2019). Cultural diversity in the area of social influence is presented in Table A.6.

Table A.6 Country of birth, 2016

	Born in Australia	Both parents born in Australia	English only spoken at home	Households where a non-English language is spoken
Marulan	81.2%	66.3%	89.5%	5.5%
Brayton	70.5%	55.5%	83.2%	2.9%
Carrick	70.5%	55.5%	83.2%	2.9%
Local area	79.4%	65.0%	88.3%	5.0%

Table A.6 Country of birth, 2016

	Born in Australia	Both parents born in Australia	English only spoken at home	Households where a non-English language is spoken
Goulburn Mulwaree LGA	82.7%	70.0%	87.0%	5.0%
Wingecarribee LGA	82.7%	70.0%	87.0%	5.0%
Regional area	79.2%	63.6%	87.8%	4.8%
NSW	65.5%	45.4%	68.5%	26.5%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

ii Disability

In the local area, 5.2% of the of people have a need for assistance in one or more of the three core activities of self-care, mobility and communication due to a long-term health condition (lasting 6 months or longer), a disability (lasting 6 months or longer), or old age. This is slightly lower than that in the rest of NSW (5.4%), while the population within the regional area has a slightly greater need for assistance (6.0%). The relatively similar need for assistance in the local area, regional area, and across NSW may be attributable to access to and availability of social services, in particular disability services, in Goulburn within the regional area. Baxter, Hayes and Gray (2011) of the Australian Institute of Family Studies reveal that people living in major cities and regional centres are less likely to have problems accessing services such as doctors and disability services, while those in outer regional or remote areas have the most trouble accessing these services. This likely prompts people to migrate to regional centres, such as Goulburn within the regional area, and larger cities where those services are more readily available. Core activity need for assistance in the area of social influence is demonstrated in Table A.7.

Table A.7 Core activity need for assistance, 2016

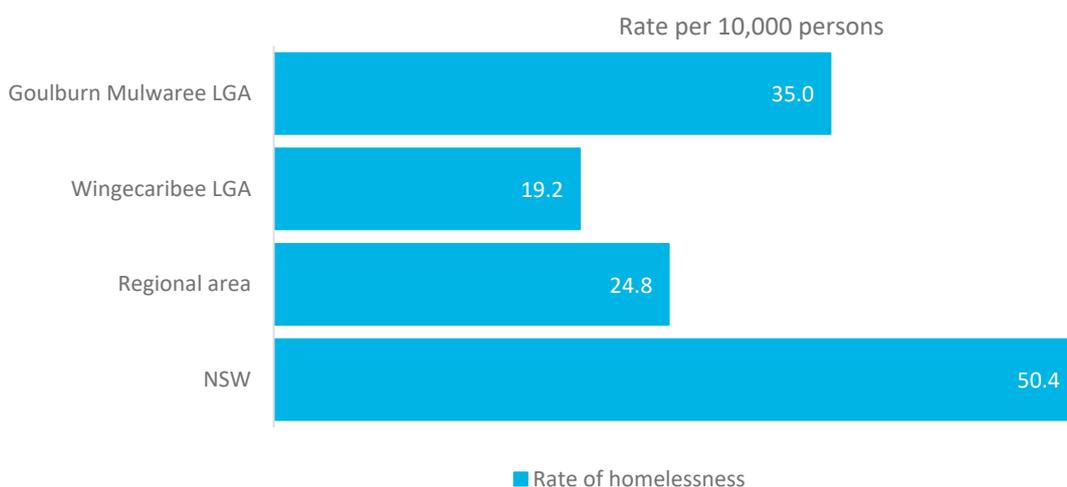
	Has need for assistance	Does not have need for assistance
Marulan	4.6%	88.8%
Brayton	6.9%	78.6%
Carrick	8.1%	78.7%
Local area	5.2%	86.7%
Goulburn Mulwaree LGA	6.4%	84.6%
Wingecarribee LGA	5.6%	87.4%
Regional area	6.0%	86.3%
NSW	5.4%	87.7%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

iii Homelessness

As explained by the Australian Human Rights Commission (AHRC) (n.d.), “the causes of homelessness are numerous and complex. Homelessness can be caused by poverty, unemployment or by a shortage of affordable housing, or it can be triggered by family breakdown, mental illness, sexual assault, addiction, financial difficulty, gambling or social isolation. Domestic violence is the single biggest cause of homelessness in Australia”. Homelessness can also lead to health problems including poor nutrition, depression, substance abuse, poor dental health, and mental health conditions (AHRC 2021). For homeless persons, hardships with finances, transport, identification, Medicare, and difficulty with appointment maintenance/treatment plans make accessing health care services more difficult than the average person (AHRC 2021). As such, homeless persons are at greater risk of being negatively affected by potential impacts on livelihoods and health and wellbeing.

Rates of homeless are not available at the SSC level, but are available at the LGA level. According to the 2016 Census estimations on homelessness, rates of homelessness in the regional area are lower than NSW rates, with a rate of 35.0 homeless persons per 10,000 persons in Goulburn Mulwaree LGA and 19.2 homeless persons per 10,000 persons in Wingecarribee LGA compared to a rate of 50.4 homeless persons in NSW. Rates of homelessness in the area of social influence are presented in Figure A.7.



Source: ABS 2016, 2049.0 – Census of Population and Housing: Estimating Homelessness.

Figure A.7 Rates of homelessness per 10,000 persons, 2016

A.4 Community culture, values, and aspirations

The Goulburn Mulwaree LGA community values its natural environment, bushland, parks, and rural landscapes, as well as its heritage character with many buildings dating to the late 1800s still standing and in use today, including the Post Office, the Gaol, Hospital and Kenmore Mental Hospital, among others (Goulburn Mulwaree Council 2020a; Goulburn Mulwaree Council 2020b). As identified in the *Tableland Regional Community Strategic Plan 2016–2036*, Goulburn Mulwaree Council and the Goulburn Mulwaree community also recognise the potential for growth opportunities within the Goulburn Mulwaree LGA.

The vision of the Wingecarribee LGA community is “a healthy and productive community, learning and living in harmony, proud of [their] heritage and nurturing [their] environment” (WSC 2021a). The Wingecarribee Shire Council and Wingecarribee community value the country lifestyle available within the Wingecarribee LGA, while recognising economic development as a key driver of community wellbeing (WSC 2021a).

A.4.1 Aboriginal history

Information about the socio-cultural structure of Aboriginal society prior to European contact largely comes from ethno-historic accounts made by Europeans. These accounts and observations were made after massive social disruption due to disease and displacement. As a result, this information is often contentious, particularly in relation to language area boundaries.

The traditional custodians of the land around Goulburn Mulwaree LGA are reported as two major language groups, to the north of Goulburn were the Gandangara (also known as Gundungurra, Gundungari, Gurra-gunga, and Burratorang) and to the south were the Ngun(n)awal (also known as Ngunuwal, Ngoonawal, Wonnawal, Nungawal, Yarr, Yass tribe, Lake George, Five Islands, tribe or Molonglo tribe) (AMBS 2012). Key places of significance for Aboriginal cultural heritage in the regional area are Rocky Hill, the old railway quarry on the Wollondilly River, Mulwaree Flats near Lansdowne Bridge at the brewery, and the site of the current Goulburn rail station, all of which are identified as places where large gatherings of Aboriginal people, such as corroborees, took place (Goulburn Mulwaree Council 2020b). European settlement in the region had a disastrous effect on the local Aboriginal population, with diseases introduced by the colonisers killing many, reducing the once numerous populations to around 20–100 individuals (Goulburn Mulwaree 2020b).

Wingecarribee LGA area falls within the Aboriginal language group boundary of the Gundungarra people whose territory extended between Camden and Goulburn and the greater Blue Mountain area to the north-west (AIATSIS 2018). However, several neighbouring groups may have used the greater Southern Highlands region for travelling routes and other purposes such as ceremonies and gatherings (Tindale 1974). This includes the Ngunawal people to the south-west, the Dharawal-speaking Wodi Wodi people to the east (Tindale 1974), the Tharawal/Dharawal people to the north-east, and the Dharung people to the north (AIATSIS 2018).

Aboriginal and/or Torres Strait Islander persons throughout Australia have experienced trauma due to the violence and loss of culture associated with colonisation, and subsequent settler policies including the forced removal of children, known as the Stolen Generations (Australians Together 2020). This trauma can be passed down from the first generation of survivors to future generations in the process of intergenerational trauma. According to Healing Foundation (n.d.), those experiencing intergenerational trauma “may experience difficulties with attachment, disconnection from their extended families and culture and high levels of stress from family and community members who are dealing with the impacts of trauma. This can create developmental issues for children, who are particularly susceptible to distress at a young age. This creates a cycle of trauma, where the impact is passed from one generation to the next”. Within Australia, intergenerational trauma mainly affects the children, grandchildren and future generations of the Stolen Generations. Intergeneration trauma is often associated with violence, harmful substance use, and mental health issues amongst Aboriginal and/or Torres Strait Islander populations (Healing Foundation n.d.).

A.4.2 Non-Aboriginal history

Non-Aboriginal history of the Goulburn Mulwaree area dates back to 1798, when the first exploratory party of John Wilson and John Price reached Towrang in the regional area (Goulburn Mulwaree Council 2020b). In 1818 a settlement, originally named Goulburn Plains for the undersecretary of state for the colonies Henry Goulburn, was established by explorer Hamilton Hume on exploration with Charles Crosby, James Meehan, and John Oxley (Britannica 2014; Goulburn Mulwaree Council 2020b). In 1833 the town of Goulburn was founded as a garrison and convict town, 1859 saw it declared a municipality, and it became a city in 1864 (Britannica 2014). The population of Goulburn in the mid to late-1800s saw extreme growth, from 655 people to 1,200 in the four years between 1841–1845, from five stores and five inns in 1844 to more than 20 hotels in 1867 (Goulburn Mulwaree Council 2020b). The railway was constructed in 1869, connecting the city to Sydney in the north, and later extending south in 1875; the city was the regional centre of the Southern Tablelands (Goulburn Mulwaree Council 2020b). Expansion continued during the late 1800s, aided by the construction of branch railway lines. Gradual growth took place from the 1960s to the 1990s, with the population increasing from about 21,000 in 1966 to 25,000 in 1991. The population increased slightly from the 1990s, rising to nearly 28,000 in 2011 (profile.id 2021a). Today, the Goulburn Mulwaree Council area is predominantly rural, with a city in Goulburn and small villages at Bungonia, Lake Bathurst, Marulan, Tallong and Tarago. Land is used largely for agriculture, particularly sheep grazing, with some cattle grazing and boutique industries (profile.id 2021a). Goulburn is recognised as a regional centre within the area.

European settlers first explored the Wingecarribee LGA area in 1798 (WSC 2021b). In 1821, a government settlement was established at Bong Bong, between Moss Vale and Burradoo (profile.id 2021b). In the 1830s, Berrima became the second settlement in the region. The area’s cool climate, reliable rainfall and undulating terrain led to the establishment of a strong agricultural industry mainly based on sheep and cattle grazing, which attracted people to the area (WSC 2021b). However, population growth remained subdued until the 1860s when the Main Southern Railway Line was opened, after which the region experienced rapid population growth, particularly in the townships of Bowral, Mittagong and Moss Vale and with some growth in the smaller settlements of Bundanoon, Exeter and Burrawang (profile.id 2021b). The region continues to support a viable agricultural industry, including sheep and cattle grazing, fruit and vegetable growing and viticulture. Other important primary industries are mining and quarrying (WSC 2021b). In more recent years, the region has experienced strong growth in the services sector, and it is now a major employer.

A.5 Social Infrastructure

A.5.1 Childcare and early learning

Within the local area there are three childcare services with capacity for 63 children, though there are 82 persons aged 0–4 years in the local area. However, persons in the local area can access a wider range of childcare and early learning options in the regional area. Services available in the local and regional area provide long day care, preschool/kindergarten, outside of school hours care (OSHC). Within the local area these services are provided through centre-based care, with both centre-based and family day care available in the regional area. The childcare services available in the local and regional areas are presented in Table A.8.

Table A.8 Childcare services in the local and regional area, 2021

	Preschool	Long day care	OSHC
Marulan	✓	✓	✓
Brayton	✗	✗	✗
Carrick	✗	✗	✗

Table A.8 Childcare services in the local and regional area, 2021

	Preschool	Long day care	OSHC
Goulburn Mulwaree LGA	✓	✓	✓
Wingecarribee LGA	✓	✓	✓

Source: ACECQA 2021

A.5.2 Education

In 2016, the largest proportion of persons attending an education institution in the local area attended primary schools (32.0%), which is representative of the high proportion of primary school aged children in the local area (see Section A.3). The next largest proportion of persons attended other types of education institutions, similarly in the regional area. This could be indicative of the NSW Police Academy, the Australian Institute of Personal Trainers, or a College of Transformation, Education, and Training, all of which are located in Goulburn, central to the local and regional areas. A very small proportion of persons attended university or other tertiary institutions in the local area (3.8%), regional area (7.4%) compared to NSW (16.2%). This may be indicative of the only tertiary education options in the region being a TAFE campus and Charles Sturt University campus in Goulburn (see Section A.5.2ii).

In Brayton in the local area, preschools (not representative of the high proportion of persons aged 0–4 years (see Section A.3)), technical or further educational institutions, and university or other tertiary institutions all reported 0.0% attendance. The absence of persons attending technical or tertiary institutions is representative of the low proportion of persons in Brayton aged 20–34 years, typically the largest demographic for attendance of those types of institutions (see Section A.3). The high proportion of attendees in tertiary or other types of educational institutions in NSW reflects the tendency for young people to migrate to larger cities or metropolitan areas to pursue educational opportunities. Educational institution attendance in the area of social influence, as a percentage of total education institution attendees, is demonstrated in Table A.9.

Table A.9 Educational institution attendance, 2016

	Preschool	Infants/primary	Secondary	Technical or further educational institution	University or other tertiary institution	Other type of educational institution
Marulan	8.1%	35.7%	17.3%	6.3%	3.7%	27.1%
Brayton	0.0%	12.5%	25.0%	0.0%	0.0%	42.9%
Carrick	10.6%	27.7%	14.9%	19.1%	8.5%	27.7%
Local area	7.3%	32.0%	18.0%	6.9%	3.8%	29.1%
Goulburn Mulwaree LGA	6.0%	26.7%	19.3%	6.9%	6.8%	32.3%
Wingecarribee LGA	6.0%	28.2%	24.4%	5.6%	7.8%	26.0%
Regional area	6.0%	27.6%	22.4%	6.1%	7.4%	28.4%
NSW	5.7%	26.1%	20.1%	6.2%	16.2%	23.0%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

i Primary and secondary

There is one school in the immediate local area. Marulan Public School is a primary school with 99 students, 6.2 full-time equivalent teaching staff, and has a year range of K–6. In the local area in 2016 there were 236 children aged 5–14 (primary/secondary age), suggesting that many would have to travel outside of the local area to attend school (see Section A.3). Persons in the local area can access schooling in the regional area with minimal travel required. A summary of schools in the area of social influence is presented in Table A.10.

Table A.10 Schools in the local and regional areas, 2021

	Primary	Secondary	Combined	Government	Non-government
Marulan	✓	✗	✗	✓	✗
Brayton	✗	✗	✗	✗	✗
Carrick	✗	✗	✗	✗	✗
Goulburn Mulwaree LGA	✓	✓	✓	✓	✓
Wingecarribee LGA	✓	✓	✓	✓	✓

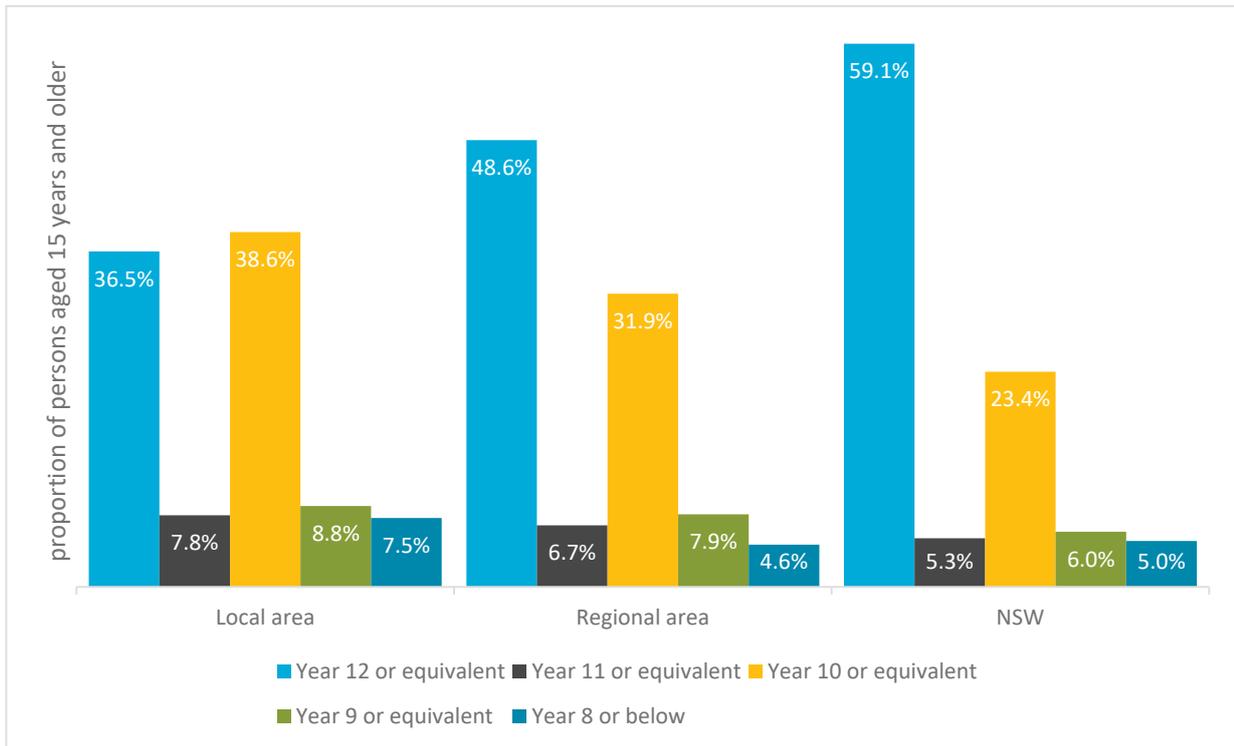
Source: ACARA 2021

The local area has a higher proportion of the population who have only completed Year 10 or equivalent (38.6%) when compared to NSW (23.4%), and a lower proportion of persons who have completed Year 12 or equivalent (36.5%) compared to the regional area (48.6%) and NSW (59.1%). The lower educational achievement in the local area is reflective of the relative disadvantage indicated in the IEO SEIFA index rankings (see Section A.3.3). The highest level of schooling completed within the area of social influence is presented in Table A.11 and Figure A.8.

Table A.11 Highest level of schooling completed for persons 15 years and over, 2016

	Year 12 or equivalent	Year 11 or equivalent	Year 10 or equivalent	Year 9 or equivalent	Year 8 or equivalent
Marulan	34.9%	7.5%	39.9%	8.8%	8.3%
Brayton	42.0%	7.6%	37.0%	8.4%	5.0%
Carrick	44.0%	10.7%	28.6%	9.5%	3.6%
Local area	36.5%	7.8%	38.6%	8.8%	7.5%
Goulburn Mulwaree LGA	41.5%	6.8%	35.1%	9.5%	6.4%
Wingecarribee LGA	52.7%	6.6%	30.0%	6.9%	3.5%
Regional area	48.6%	6.7%	31.9%	7.9%	4.6%
NSW	59.1%	5.3%	23.4%	6.0%	5.0%

Source: ABS 2016, Census of Population and Housing: General Community Profiles



Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Figure A.8 Highest level of schooling completed for persons 15 years and older, 2016

ii Tertiary

In the regional area there are five tertiary institutions. There are three tertiary institutions in Goulburn Mulwaree LGA, including TAFE NSW – Goulburn, Charles Sturt University, Goulburn Campus, and a College of Transformation, Education, and Training (CTET). In Wingecarribee LGA, there are two tertiary institutions, including TAFE NSW – Moss Vale and the Southern Highlands Campus of the University of Wollongong. A summary of the tertiary institutions within the local area is provided in Table A.12

Table A.12 Tertiary institutions in the local area, 2021

Location	Institute	Education and training courses
Goulburn	TAFE NSW, Goulburn Campus	TAFE NSW Goulburn is the largest TAFE location in the Highlands district. A diverse range of courses at the certificate and diploma levels are offered, including (but not limited to) tertiary preparation, veterinary nursing and animal studies, agriculture and horticulture related study, carpentry, education, plumbing, digital media and technology, and hairdressing. This campus also offers short workshops and statements of attainment courses (TAFE NSW 2021a).

Table A.12 Tertiary institutions in the local area, 2021

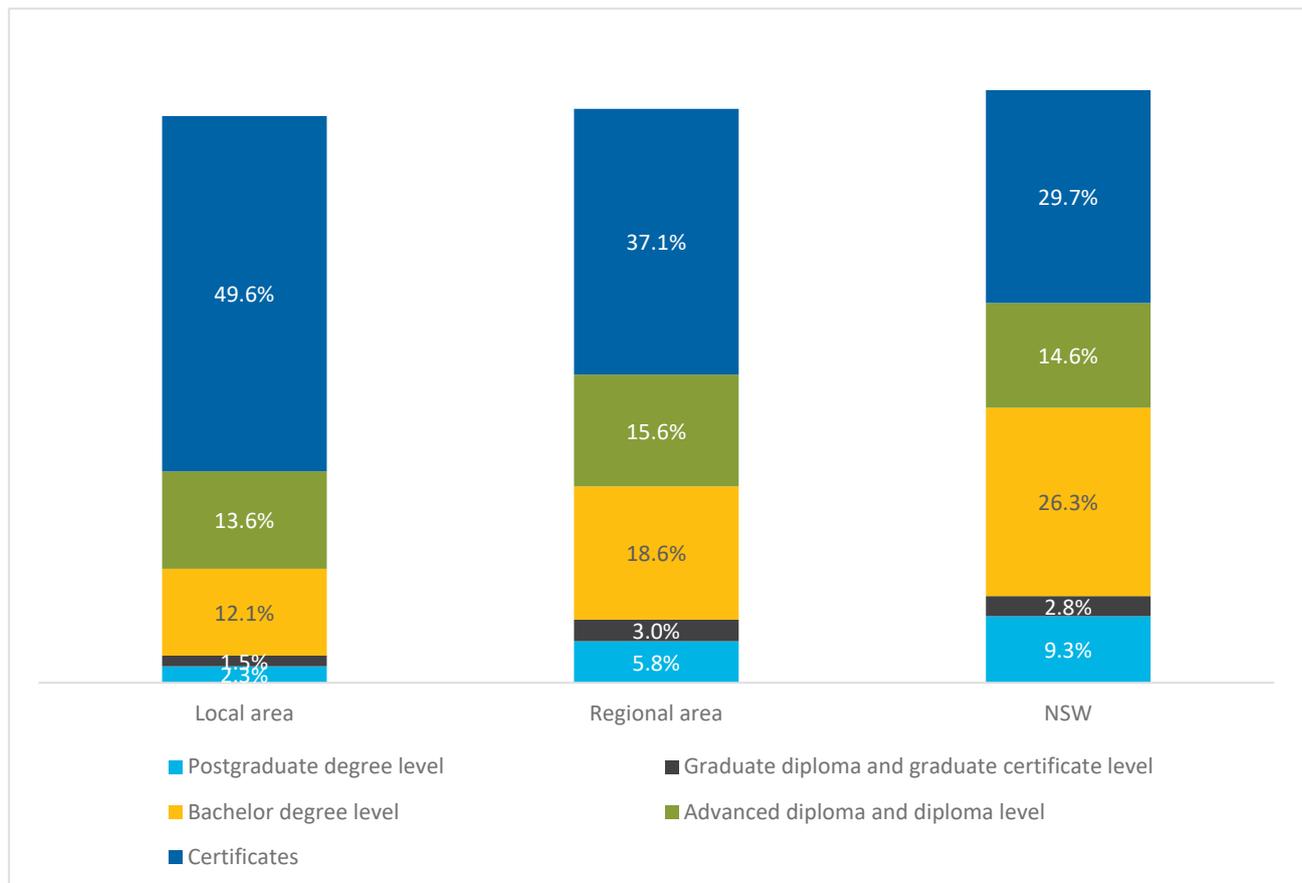
Location	Institute	Education and training courses
Goulburn	Charles Sturt University, Goulburn Campus	Charles Sturt University Goulburn Campus offers an Associate degree in Policing Practice from the NSW Police Force Academy. This degree focuses on the foundational studies and applied skills and knowledge necessary for the modern police professional. The knowledge and skills developed through the course are designed to meet the education needs of individuals seeking future employment with the NSW Police Force (Charles Sturt University 2021).
Goulburn	College of Transformation, Education and Training (CTET)	CTET provides certificate and diploma level courses in the areas of leadership and management, hairdressing, hospitality, community services, and work health and safety, including apprenticeship opportunities (CTET 2021).
Moss Vale	TAFE NSW, Moss Vale Campus	TAFE NSW Moss Vale services the towns and villages of the Southern Highlands region, including Bowral and Mittagong. TAFE NSW Moss Vale offers a host of courses including arts & media, business and administration, communication and media, electro-technology and engineering, general education, aged care and children's studies, information technology, rural and animal studies and tourism and hospitality. The University of Wollongong Access Centre is also located at this location (TAFE NSW 2021b).
Moss Vale	University of Wollongong, Southern Highlands Campus	The University of Wollongong Southern Highlands Campus is part of the University of Wollongong multi-campus regional network. Undergraduate and graduate programs are available. Program fields include teaching, economics, arts, business, and commerce (UOW 2021).

Non-school qualifications in the local area are significantly lower than NSW for all types of qualifications, except diplomas and certificates. Certificate level qualifications in the local area (49.6%), and regional area (37.1%), are much higher than in NSW (29.7%). This is reflective of the main occupations in the local and regional areas being technicians, trades workers, and labourers which typically do not require tertiary level education (see Section A.6.1). This is also consistent with the higher proportion of persons attending alternative educational institutions (see Table A.9). Non-school qualifications in the local and regional areas is provided in Table A.13 and Figure A.9.

Table A.13 Proportion of persons over 15 with a non-school qualification, 2016

	Postgraduate degree level	Graduate diploma and graduate certificate level	Bachelor degree level	Advanced diploma and diploma level	Certificates
Marulan	1.4%	0.8%	13.0%	12.4%	52.4%
Brayton	3.9%	2.9%	12.6%	19.4%	37.9%
Carrick	5.2%	3.9%	5.2%	13.0%	48.1%
Local area	2.3%	1.5%	12.1%	13.6%	49.6%
Goulburn Mulwaree LGA	3.6%	2.4%	13.7%	14.6%	41.0%
Wingecarribee LGA	7.0%	3.4%	21.4%	16.1%	34.9%
Regional area	5.8%	3.0%	18.6%	15.6%	37.1%
NSW	9.3%	2.8%	26.3%	14.6%	29.7%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.



Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Figure A.9 Proportion of persons over 15 with a non-school qualification, 2016

A.5.3 Health services

The local area is located within the Southern NSW LHD.

i Hospital service

The Southern NSW LHD looks after all public hospitals and healthcare facilities provisions in the local area.



Source: NSW Health 2021

The closest hospital to the local area, providing the most comprehensive services, is Goulburn Base Hospital in the regional area. Goulburn Base Hospital is an 80-bed hospital providing 24-hour emergency and a wide range of medical services. There are two other public hospitals within the regional area, both located in Goulburn. Bourke Street Health Service is a smaller multipurpose service, while Kenmore Hospital specialises in mental health. The details of the closest hospitals in the area of social influence are presented in Table A.14.

Table A.14 Hospitals in the area of social influence, 2020

Location	Hospital	Type	Number of beds
Goulburn	Goulburn Base Hospital	Public	80
Goulburn	Bourke Street Health Service	Public	25
Goulburn	Kenmore Hospital	Public mental health hospital	NA
Bowral	Bowral and District Hospital	Public	94
Bowral	Southern Highlands Private Hospital	Private	73

Source: AIHW 2020, MyHospitals

The total number of patients admitted to Goulburn Base Hospital decreased from 2013–2014 to 2015–2016 and increased in 2016–2017. However, almost all of the hospital stays in Goulburn Base Hospital are attributable to surgical emergencies and surgical non-emergencies. The high incidences of surgical emergencies in the hospital may be indicative of the proportion of manual labour occupations, such as technicians, trades workers and labourers, machinery operators and drivers, and also community and personal workers (see Section A.6). In 2017–2018 these occupations experienced the highest rates of work-related injury or illness, with technicians and trades workers having 72 per 1,000 employed persons injured or ill, community and personal workers 69 per 1,000 persons employed, and machinery operators and drivers 57 per 1,000 persons employed (ABS 2018). The local and regional areas also have a high proportion of employment in the construction industry (see Section A.8), the industry with the highest work-related injury or illness (59 per 1,000 employed persons), followed by manufacturing (58 per 1,000) and health care and social assistance (55 per 1,000), also large industries in the area of social influence (ABS 2018). There have consistently been low hospital admissions for other acute non-emergencies and mental health, the latter of which indicates that patients are accessing mental health facilities and services outside of Goulburn Base Hospital for mental health related treatment. This may be due to the Kenmore Hospital (a mental health hospital) being located nearby, or the provision of mental health services through GPs (see section below) and other community services (see Section A.5.6). From 2011–2017 there have been relatively low numbers of admissions for childbirth, which may be reflective of the small population of women aged 20–34 years in the local and regional areas compared to NSW (see Section A.3).

The number of admissions to Goulburn Base Hospital from 2011–2017 is presented in Table A.15.

Table A.15 Number of admissions to Goulburn Base Hospital, 2011–2017

Admission category	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Childbirth	332	302	287	282	301	276
Surgical (emergency)	3,399	3,367	3,474	3,165	3,173	3,159
Surgical (non-emergency)	2,931	2,774	3,064	2,888	3,170	3,475
Medical (emergency)	752	697	635	788	799	890
Medical (non-emergency)	103	119	115	130	137	172
Other acute (emergency)	927	855	885	866	876	925
Other acute (non-emergency)	48	73	68	126	172	130
Mental health	59	100	64	71	77	50
Rehabilitation	51	136	300	288	268	343
Palliative	276	300	299	305	287	416
Other subacute and non-acute	1,300	1,367	1,423	1,364	1,363	1,526
Total	10,178	10,090	10,614	10,273	10,623	11,362

Source: AIHW 2021, MyHospitals

- Notes:
1. Medical is defined as stays to hospital that do not require surgery.
 2. Surgical is defined as stays to hospital that require surgery (ie physical medical intervention).
 3. Other acute care is defined as stays that have neither a surgical nor a medical Australian Refined Diagnosis Related Group.

4. Surgical, medical and other acute care stays are further divided into 'emergency' and 'other', based on the recorded urgency of admission, ie whether admission was considered necessary within 24 hours or not.

ii Primary health services

a General practitioner services

Within the local area there are two general practitioner (GP) services which primarily offer standard GP services. However, GP services in the regional area also service the local area. GP services in the regional area include standard GP services, as well as services relating to community health, Aboriginal health, mental health, maternal, child and family health, aged care and special services. GP practices in the area of social influence are summarised in Table A.16.

Table A.16 GP services by location, 2021

Location	GP services	Community health services	Aboriginal health services	Mental health services	Maternal, child, and family health services	Aged care services	Other specialist services
Marulan	✓	✗	✗	✗	✗	✗	✓
Brayton	✗	✗	✗	✗	✗	✗	✗
Carrick	✗	✗	✗	✗	✗	✗	✗
Goulburn LGA	✓	✓	✓	✓	✓	✓	✓
Wingecarribee LGA	✓	✓	✓	✓	✓	✓	✓

Source: Healthdirect Australia 2021

A.5.4 Emergency services

The only emergency services in the local area are one Rural Fire Brigade and one police station, both located in Marulan. However, the local area is largely serviced by emergency services located in Goulburn Mulwaree LGA in the regional area, with services primarily located in Goulburn. Additional services are also available throughout Wingecarribee LGA within the regional area.

Table A.17 Emergency services in the local area, 2021

	Police station	Ambulance station	Fire and rescue station	Rural fire service brigades	State Emergency Service
Local area	1	0	0	1	0
Regional area					
Goulburn Mulwaree LGA	4	2	1	14	2
Wingecarribee LGA	4	3	4	21	1

Source: police.nsw.gov.au; ambulance.nsw.gov.au; fire.nsw.gov.au; rfs.nsw.gov.au; ses.nsw.gov.au

A.5.5 Transport infrastructure

i Modes of travel

Based on the 2016 Census the predominant mode of travel to work in the local area is by car, either as the driver or as a passenger (70.0%) which is slightly higher than the NSW average (64.6%) but lower than the regional area average (72.3%). Travel using public transport varies throughout the local area. A substantially lower proportion of people travel to work by public transport in the regional area (2.2%) compared to NSW (16.0%). Within the local area, the slightly higher proportion of people travelling to work by car but substantially lower proportion of people using public transport suggests that a significant proportion of the population does not have to travel to work. This may reflect the large proportion of registered agricultural businesses and the prevalence of employment in the agriculture industry in the local area (see Section A.8). Modes of travel to work in the area of social influence are summarised in Table A.18.

Table A.18 Modes of travel, 2016

	By car (as driver, as passenger)	By public transport (train, bus, ferry, tram)
Marulan	65.4%	0.0%
Brayton	59.5%	0.0%
Carrick	65.7%	0.0%
Local area	70.0%	0.0%
Goulburn Mulwaree LGA	76.1%	1.0%
Wingecarribee LGA	70.0%	2.9%
Regional area	72.3%	2.2%
NSW	64.6%	16.0%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Notes: 1. There are small random adjustments made to all cell values to protect the confidentiality of data. These adjustments may cause changes to actual totals which may distort data with small populations, such as those relating to users of public transport within the suburbs that comprise the local area.

ii Public transport

Intercity public transport is available in the local area by a train line running through Marulan township and a limited number of bus services. There are three routes that run outbound through Marulan Station to Goulburn, Canberra, and Albury, and three that run inbound to Campbelltown Station, Moss Vale Station, and Sydney Central Station. The bus services running through the town include a Murrays Coaches bus from Canberra to Wollongong and train replacement buses when required.

iii Air

The local and regional service can access air transport from Goulburn Airport. The airport consists of one sealed runway and provides corporate air services, flight training (Goulburn Flight Training Centre and Goulburn Aviation), recreational flight services (skydiving).

The nearest airports offering domestic and international flights are Shellharbour Airport or Canberra Airport, both roughly one and a half hours' drive from Marulan in the local area.

The Project is located roughly halfway between Brayton and Marulan in the local area, along Brayton Road. The main access road to the local area is the Hume Highway, which runs parallel with the main street (George Street) in Marulan. The Hume Highway provides access from the local area to Goulburn to the west, also connecting to the Federal Highway towards Canberra, and Sydney and Wollongong north-east.

A.5.6 Community services

Community services located in the regional area service the local area. It is anticipated that persons living in the local area would primarily access services located in Goulburn Mulwaree LGA in the regional area. Services in the regional area include aged care and senior services, children’s services, youth services, disability and accessibility services, housing and homelessness services, women’s services and family services, Aboriginal services, employment services, and domestic violence services (Healthdirect 2021; Ask Izzy 2021). A summary of community services that service the local area is presented in Table A.19.

Table A.19 Community services in the local and regional areas, 2021

	Aboriginal services	Child and family services	Youth services	Housing and homelessness services	Employment services	Disability services	Aged care services	Women’s services	Arts and cultural facilities	Recreation services
Local area	✗	✗	✓	✗	✗	✗	✗	✓	✓	✓
Regional area	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: My Community Directory 2021; Healthdirect 2021; Ask Izzy 2021.

i Aboriginal community services

Aboriginal community services are available through eight service providers in the Goulburn Mulwaree area. Aboriginal health services are available from Grand Pacific Health in Goulburn, specifically assistance with chronic health conditions, free health check and case management services, and a diabetes clinic. Aboriginal health services are also available from the Goulburn Community Health Centre. The Pejar Local Aboriginal Land Council (LALC) provides information, referrals, and support to the Aboriginal community in Goulburn Mulwaree LGA (NSW Aboriginal Land Council 2021). LALCs acquire and administer land through the NSW Aboriginal Land Rights Act legislation and protect the interests and furthers the aspirations of their members and the broader Aboriginal community. Additional Aboriginal services are available in Goulburn, including Aboriginal Housing Services provided by DCJ Housing Services; hearing services provided through Hearing Australia (part of the National Disability Insurance Scheme (NDIS)); and permanency program support through the South Coast Medical Service Aboriginal Corporation. There are also social support groups which provide information, social and recreational activities for the elderly, including Aboriginal elders, operating in Goulburn (Warrigal Social) and Marulan (Seniors’ Day Activity Centre).

ii Child and family services

There are a range of child and family services available in the Goulburn Mulwaree area. Child and family services are available through both multi-service providers and individual service providers, and are mostly located in the suburb of Goulburn. Child and family health support is available through the Goulburn Base Hospital. Child and adolescent mental health support is also available through the Goulburn Community Health Service. The most comprehensive child and family services are offered through DCJ Community Services in Goulburn, which includes adoption and permanent care services, early intervention programs, protection and intervention, case management, out of home care, and a child protection helpline and satellite sites. Mission Australia Brighter Futures operates in Goulburn, offering services aimed at prevention of child abuse and neglect, including early intervention, case management, and support for families experiencing difficulties. Child and family support services are offered through an additional seven service providers in Goulburn, including permanency programs, foster care, out of home care, parents support and education programs, a school breakfast program, and supported playgroups. Additional childcare services across the local area are offered by the Family and Child Services department of Goulburn Mulwaree Council. These services include childcare, kindergarten, parenting education and support, and health services.

iii Youth community services

There is one youth club operating out of the Lions Club in the local area in Marulan. There are five identified youth services operating in Goulburn within Goulburn LGA. Anglicare NSW South West & ACT in Goulburn provides a variety of youth programs, including case managed support programs to assist with improving family functioning and confidence for parents, and youth aged 12–17 years, as well as holiday camps for youth aged 12–18 years. In Goulburn, headspace provides youth mental health services, including access to psychologists, psychiatrists and counsellors; information referrals and opportunities for youth aged 12–25 years; general medical services for youth aged 12–25 years; and programs to help parents communicate with their teenagers. There is also a Police and Community Youth Club (PCYC) operating in Goulburn which provides recreational and sporting activities, including mentorship programs. Goulburn Mulwaree Council also provide youth services, including information, assistance, and referral services.

iv Housing and homelessness services

Within the Goulburn Mulwaree LGA there are six housing and homelessness services operating within Goulburn. Services offered include tenancy management, Aboriginal housing services, family accommodation, crisis accommodation, transitional accommodation, community housing, and specialist homelessness services. Two of these services offer housing and homelessness services specifically for youth, including crisis and short-term accommodation, as well as intensive support, early intervention and referral services.

v Employment services

There are five identified employment service providers in Goulburn Mulwaree LGA, all located in Goulburn. Two of these services provide Jobactive – a service which provides employment placement and training for unemployed young people and adults, individually tailored job plans, assistance looking for work, resume writing, interview preparation, case management and wage subsidies. Other available services skills checkpoint programs, financial counselling, and apprenticeship services. Mission Australia provides an opportunity pathways service for persons aged 17 years and older who live in social housing, receive a rent choice subsidy, or are on the NSW housing register to access education, training and work opportunities.

vi Disability services

There are a wide range of disability services and disability service providers within the Goulburn Mulwaree LGA. However, all 16 providers are located in Goulburn. The services range from disability employment services, social support groups and recreational activities, disability case management and coordination support, day programs for adults with disabilities, coordination and support of the National Disability Insurance Scheme (NDIS), accommodation and home support services, and transition assistance programs.

vii Aged care services

Within the Goulburn Mulwaree LGA there are 11 identified aged care service providers operating in Goulburn. The available services include home care (which is also available for persons with disabilities), domestic assistance, low- and high-level care accommodation (which includes dementia specific care), residential respite care, and independent living units for people aged 55 years and older. Other services include older persons mental health services offered through the Goulburn Community Health Service, and aged care assessment to make informed decision about housing and a persons' required level of care. The University of the Third age provides adult and community education, particularly for persons who are retired and elderly. There is also a Goulburn Senior Activities Club which offers social activities for persons aged over 55 years.

viii Women's services

There are three branches of the Country Women's Association (CWA) within the Goulburn Mulwaree LGA, located in Marulan in the local area, as well as Goulburn and Tarago. These services provide support for personal growth and the opportunity to pursue and address key social issues for women within these areas. There is also a multicultural women's group offered through the Goulburn Multicultural Centre.

A.5.7 Arts and cultural community facilities

There are a range of arts and cultural community facilities in the regional area. The regional area offers the following arts and cultural community facilities: art galleries and installations, museums and heritage sites, library, hall, and conference/meeting rooms. Most of these facilities are available in Goulburn in the regional area. This is a theatre and cinema in Goulburn.

A.5.8 Recreation services

There are many recreational and outdoor activities throughout the regional area, including parks and reserves, as well as a variety of sporting facilities which include ovals, aquatic centres/swimming pools, netball courts, soccer fields, indoor courts, golf courses, bowling greens, skate parks, motocross, and racing facilities. Most of the sporting facilities available are located in Goulburn. There is also a variety of national parks and outdoor activities available throughout the regional area, including rivers and creeks where people can go fishing, bird watching, kayaking, caving, canoeing, hiking, and cycling.

A.6 Workforce and income

The following workforce and income statistics were sourced from 2016 ABS Census data. Given the profound impacts of COVID-19 on normal business operations and non-essential employment, it must be noted that drastic changes from these most recent statistics have likely occurred. According to the ABS (2020) there has been a significant decrease in employment from January 2020 to May 2020 when figures have slowly begun to rise again. The impacts of COVID-19 on the labour market are ongoing and as such, there is difficulty in measuring the full extent of those impacts currently in and into the future.

A.6.1 Employment

In 2016 the unemployment rate in the local area was 5.8%, which is higher than the regional area (4.7%) but lower compared to NSW (6.3%). Youth unemployment was significantly lower in the local area (6.8%) compared to the regional area (9.6%) and NSW (13.6%). Labour force participation in the local area was also lower (57.1%) compared to NSW, but higher than regional area (55.0%). Unemployment and labour force participation rates are presented in Table A.20.

Table A.20 Unemployment and labour force participation rates, 2016

	Unemployment rate	Youth unemployment rate	Labour force participation rate (15 years and older)
Marulan	5.7%	7.7%	56.7%
Brayton	6.7%	0.0%	52.4%
Carrick	5.6%	0.0%	67.3%
Local area	5.8%	6.8%	57.1%
Goulburn Mulwaree LGA	6.3%	11.5%	56.0%
Wingecarribee LGA	3.8%	8.3%	54.3%
Regional area	4.7%	9.6%	55.0%
NSW	6.3%	13.6%	59.2%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

In the local area the top three occupations are technicians and trades workers (15.9%), labourers (14.8%), and machinery operators and drivers (12.9%). These jobs generally require TAFE education or certificate level qualifications, which comprise the largest proportion of qualifications in the local and regional areas (see Section A.5.2ii), with almost half of technicians and trades workers holding a Certificate III or higher vocational qualification (NSC 2020). The higher proportion of manual labour type occupations in the local area is reflective of the main industry of employment being construction (see Section A.8). A higher proportion of trades-related occupations could also be reflective of educational outcomes, which are low in the local area (see Section A.5.2). A much lower proportion of persons in the local area are professionals (8.7%) than in NSW (23.6%) which is indicative of the low levels of bachelor degree or higher qualifications (see Section A.5.2) and low proportion of professional, scientific, and technical services (see Section A.8). The occupations within the area of social influence are presented in Table A.21.

Table A.21 Occupations, 2016

Location	Managers	Professionals	Technicians and trades workers	Community and personal service workers	Clerical and administrative workers	Sales workers	Machinery operators and drivers	Labourers
Marulan	11.4%	6.7%	16.9%	11.6%	11.0%	8.9%	14.0%	16.7%
Brayton	10.8%	10.8%	13.5%	9.5%	9.5%	6.8%	13.5%	12.2%
Carrick	19.1%	20.6%	11.8%	16.2%	22.1%	4.4%	4.4%	4.4%
Local area	12.1%	8.7%	15.9%	11.8%	12.0%	8.2%	12.9%	14.8%

Table A.21 Occupations, 2016

Location	Managers	Professionals	Technicians and trades workers	Community and personal service workers	Clerical and administrative workers	Sales workers	Machinery operators and drivers	Labourers
Goulburn Mulwaree LGA	11.5%	14.5%	14.5%	15.3%	12.2%	10.0%	8.6%	11.8%
Wingecarribee LGA	14.5%	20.2%	16.0%	10.8%	11.3%	9.7%	5.8%	10.2%
Regional area	13.4%	18.0%	15.4%	12.5%	11.6%	9.8%	6.8%	10.8%
NSW	13.5%	23.6%	12.7%	10.4%	13.8%	9.2%	6.1%	8.8%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

A.6.2 Income

There is significant variation across the individual and household median weekly incomes in the SSCs and LGAs which comprise the local area and regional area. Within the local area, median weekly individual income and median weekly household income was the highest in Carrick (\$735 and \$1542 respectively). These are higher compared to the NSW medians. This reflects the SEIFA scores within Carrick, particularly the IER, which suggests slightly higher levels of advantage and low levels of disadvantage related to income compared to other suburbs across NSW (see Section A.3). Median weekly individual income in Marulan (\$562) and Brayton (\$556) was lower compared to Goulburn Mulwaree LGA (\$625), Wingecarribee LGA (\$645) and the NSW median (\$664). Median weekly household income was similar in Marulan (\$1,125) and Brayton (\$1,542), both of which are higher than NSW (\$1,486). Throughout the regional area, median weekly individual income and median weekly household income was lower throughout Goulburn Mulwaree LGA and Wingecarribee LGA compared to NSW. Median incomes in the area of social influence are presented in Table A.22.

Table A.22 Median income, 2016

	Individual (median income \$ weekly)	Household (median income \$ weekly)
Marulan	562	1,143
Brayton	556	1,125
Carrick	735	1,542
Local area¹	--	--
Goulburn Mulwaree LGA	625	1,196
Wingecarribee LGA	645	1,335
Regional area²	--	--
NSW	664	1,486

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

A.7 Housing and accommodation

A.7.1 Housing type and structure

In the local area, almost all private dwellings are separate houses (97.2%), with 100.0% in Brayton. Although the majority of dwellings are also separate houses in the regional area (89.4%) and NSW (66.4%), there is a higher proportion of semi-detached, townhouses, and apartments in the regional area and NSW in comparison to the local area where there are no semi-detached, row or terrace houses, or townhouses. This is likely indicative of the rural and remote nature of the local and regional areas, with the small portion of homes in the regional area which are not separate houses likely concentrated near the centre of Goulburn, and in the local area, concentrated near Marulan township. Of the 719 private dwellings in the local area, only 74.7% were occupied, compared to 85.9% in the regional area and 90.1% in NSW. Housing type and structure is presented in Table A.23.

Table A.23 Housing type and structure, 2016

	Separate house	Semi-detached, row or terrace house, townhouse	Flat or apartment	Other dwelling	Total occupied dwellings	Total private dwellings
Marulan	97.9%	0.0%	0.7%	0.7%	77.8%	554
Brayton	100.0%	0.0%	0.0%	0.0%	62.8%	94
Carrick	87.2%	0.0%	0.0%	0.0%	66.2%	71
Local area	97.2%	0.0%	0.6%	0.6%	74.7%	719
Goulburn Mulwaree LGA	87.3%	7.9%	3.3%	1.1%	85.0%	12,876
Wingecarribee LGA	90.8%	5.9%	1.8%	0.8%	86.4%	20,546
Regional area	89.4%	6.7%	2.4%	0.9%	85.9%	33,422
NSW	66.4%	12.2%	19.9%	0.9%	90.1%	2,889,057

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Families comprise most household in the local area (70.8%) and regional area (70.5%), though less than in NSW (72.1%). There is a significantly smaller proportion of group households in the local area (1.5%) and regional area (2.3%) compared to NSW (4.2%). There was a higher proportion of persons living in lone person households in the local area (28.8%) (particularly in Brayton with 32.2%) and regional area (27.3%) compared to NSW (23.7%). Household composition is presented in Table A.24.

Table A.24 Household composition, 2016

Household type	Family households	Group households	Lone person households
Marulan	71.0%	1.2%	28.5%
Brayton	69.5%	0.0%	32.2%
Carrick	70.2%	6.4%	27.7%
Local area	70.8%	1.5%	28.8%
Goulburn Mulwaree LGA	68.2%	2.5%	29.3%
Wingecarribee LGA	71.9%	2.1%	26.0%

Table A.24 Household composition, 2016

Household type	Family households	Group households	Lone person households
Regional area	70.5%	2.3%	27.3%
NSW	72.1%	4.2%	23.7%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

A.7.2 Tenure

In the local area, a similar proportion of dwellings are owned outright (28.5%) or with a mortgage (28.1%). This is very similar to the mortgage rate in the regional area (28.1%), though lower than NSW (32.3%). The proportion of dwellings owned outright is higher in the regional area (34.7%) compared to NSW (32.2%). However, the proportion of rented dwellings in the local area (15.9%) is significantly lower than that of the regional area (19.9%) and NSW (31.8%). Tenure within the study area is presented in Table A.25.

Table A.25 Tenure (based on total private dwellings), 2016

	Owned outright	Owned with a mortgage	Rented	Other tenure
Marulan	29.2%	30.3%	15.7%	0.0%
Brayton	29.8%	22.3%	9.6%	0.0%
Carrick	21.1%	18.3%	25.4%	0.0%
Local area	28.5%	28.1%	15.9%	0.0%
Goulburn Mulwaree LGA	30.0%	27.5%	24.3%	0.8%
Wingecarribee LGA	37.6%	28.5%	17.1%	0.9%
Regional area	34.7%	28.1%	19.9%	0.9%
NSW	32.2%	32.3%	31.8%	0.9%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

A.7.3 Mortgage repayment and rent

Rent and mortgage repayments constitute a significant proportion of household costs. In the local area, monthly mortgage repayments in Marulan are equal to those in the regional area and area of reference (\$1,517), which is significantly lower than NSW (\$1,986). Mortgage repayments in Brayton (\$2,123 per month) and Carrick (\$2,051 per month) are higher compared to Marulan, the regional area, and NSW. The higher monthly mortgage cost in the Brayton and Carrick could be attributed to larger dwellings and property size given the rural nature of the area. The median weekly rent cost in Marulan (\$280) is slightly higher than Goulburn Mulwaree LGA (\$260), but lower compared to Wingecarribee LGA (\$350) and NSW (\$380). In Brayton, median weekly rent is only \$70, which may be indicative of the very low proportion of rented dwellings in the area (see Section A.7.2). Mortgage and rent repayments are presented in Table A.26.

Table A.26 Mortgage repayment and rent, 2016

	Mortgage repayments (median mortgage repayments \$ monthly)	Rent payments (median rent \$ weekly)
Marulan	1,517	280
Brayton	2,123	70
Carrick	2,051	200
Local area¹	--	--
Goulburn Mulwaree LGA	1,517	260
Wingecarribee LGA	1,517	350
Regional area²	--	--
NSW	1,986	380

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

Notes: 1. Data for the total local area median mortgage repayments and rent payments was not available.
2. Data for the total regional area median mortgage repayments and rent payments was not available

Housing stress is considered to occur when households in the lower 40% of income distribution spend more than 30% of their income in housing costs (rents or mortgage repayments) (AHURI 2019). This can mean that local people who are not employed in high-paying jobs may be unable to afford local rents which can be pushed up by higher salaries.

In the local area in 2016, a significantly smaller proportion of households had rent payments greater than or equal to 30% of household income compared to NSW (12.9%). This is likely reflective of the lower proportion of rental tenures in the local area (see Section A.7.2) and lower rent costs (see Section A.7.3). Although there is less rental affordability in the regional area compared to the local area, rentals are more affordable in the regional area compared to NSW. However, there were a greater proportion of households with mortgage payments greater than or equal to 30% of household income in Marulan (8.9%) and Carrick (7.5%) compared to the regional area and NSW. Housing affordability in the area of social influence is demonstrated in Table A.27.

Table A.27 Housing affordability, 2016

	Households where rent payments are greater than or equal to 30% of household income (%)	Households where mortgage payments are greater than or equal to 30% of household income (%)
Marulan	7.8%	8.9%
Brayton	5.3%	5.9%
Carrick	6.7%	7.5%
Local area¹	--	--
Goulburn Mulwaree LGA	10.4%	5.9%
Wingecarribee LGA	8.2%	7.1%
Regional area²	--	--
NSW	12.9%	7.4%

Source: ABS 2016, Quickstats

Notes: 1. Data for the total local area median mortgage repayments and rent payments was not available.

2. Data for the total regional area median mortgage repayments and rent payments was not available

A.7.4 Housing and rental market trends

i Mortgage repayment and rent trends

Median mortgage repayments in the local area and regional area increased by a similar percentage from 2006–2016, ranging from a 20.6% increase in Carrick to a 27.8% increase within Goulburn Mulwaree LGA. Median mortgage growth rates in the local area and regional area from 2006–2016 were lower compared to NSW (30.9% increase). However, there was variation in rent growth rates throughout the local area and regional area from 2006–2016. Within the local area from 2006–2016, rent payments increased by the highest proportion in Carrick (98.0%). This increase is also higher compared to the regional area and greater NSW. However, during the same period, rent payments in Brayton decreased by 30.0%. Mortgage and rent repayment growth rates in the area of social influence are presented in Table A.28.

Table A.28 Mortgage repayment and rent growth rates, 2006–2016

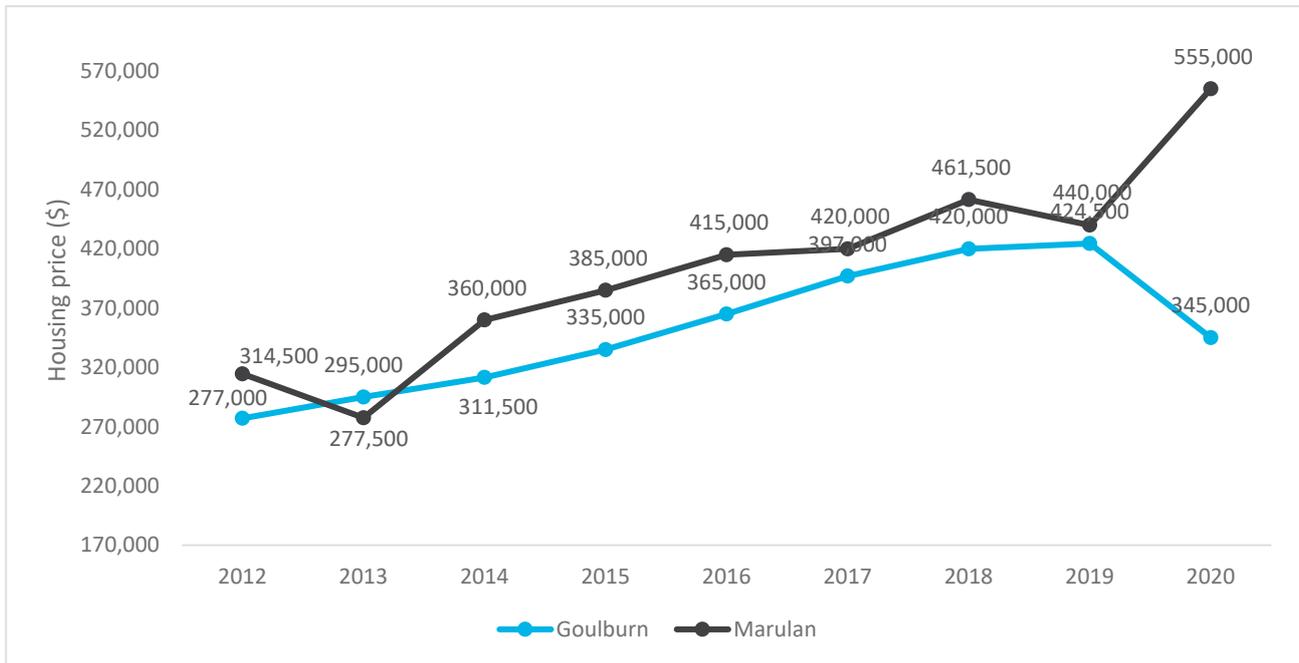
	Mortgage repayments			Rent repayments		
	2006–2011	2011–2016	2006–2016	2006–2011	2011–2016	2006–2016
Marulan	57.2%	-20.5%	25.1%	21.2%	40.0%	69.7%
Brayton	NA	NA	24.9%	NA	NA	-30.0%
Carrick	NA	NA	20.6%	NA	NA	98.0%
Local area¹	NA					
Goulburn Mulwaree LGA	27.8%	0.0%	27.8%	23.3%	40.5%	73.3%
Wingecarribee LGA	23.5%	-1.7%	21.4%	33.3%	34.6%	79.5%
Regional area²	NA					
NSW	31.4%	-0.4%	30.9%	42.9%	26.7%	81.0%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

- Notes:
1. Data for the total local area median mortgage repayments and rent payments was not available.
 2. Data for the total regional area median mortgage repayments and rent payments was not available.
 3. Mortgage and rent repayment data was not available for Brayton and Carrick for 2006.
 4. Mortgage and rent repayment data was not available for Brayton and Carrick for 2011.

ii Median property price trends

Annual property price data in the local area was only available for Marulan. As such, Goulburn from the regional area has also been analysed. The prices in the housing market in Goulburn have generally been increasing from 2011–2020. House prices in Marulan have gradually increased from \$269,000 in 2011 to \$440,000 in 2019. Housing prices in Goulburn have generally remained below those of Marulan. Housing price trends for selected suburbs in the local area and regional area are presented in Figure A.10.



Source: realestate.com.au/neighbourhoods.

Notes: No housing price data was available for Brayton or Carrick.

Figure A.10 Median property price trends for houses, 2011–2019

On 21 June 2021, there were 16 properties for sale and one property for rent in the local area, all located in Marulan (REA Group 2021). However, in the regional area there were an additional 341 properties for sale and 92 properties for rent, with most of these properties located within the suburb of Goulburn in Goulburn Mulwaree (126 properties for sale and 41 properties for rent), as well as Moss Vale (43 properties for sale and 8 properties for rent) and Bowral (36 properties for sale and 21 properties for rent) in Wingecarribee LGA. Properties for sale in selected suburbs within the local area are presented in are presented in Table A.29.

Table A.29 Properties for sale and rent in the local area, 21 June 2021

Suburb	Number of properties for sale	Number of properties for rent
Local area		
Marulan	16	4
Brayton	0	0
Carrick	0	0
Total	16	4
Regional area		
Goulburn Mulwaree LGA	154	42
Wingecarribee LGA	187	50
Total	341	92

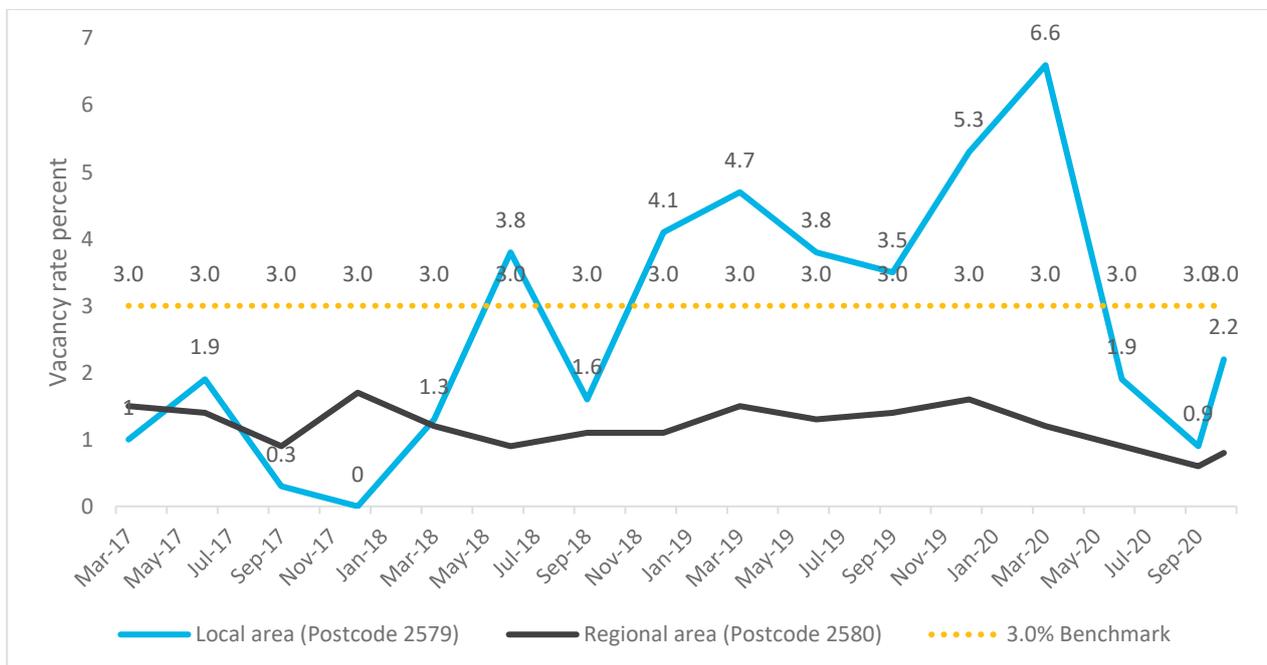
Source: realestate.com.au/neighbourhoods

iii Residential vacancy rates

Rental vacancy rates are traditional market indicators that “measure the proportion of residential properties vacant and available for rent at any point in time” (REINSW 2019). A higher vacancy rate indicates that there are a higher proportion of vacant (unoccupied) units, based on the total number of units in an area. Vacancy rates under 3.0% are low and indicate a tight rental market with an undersupply rental options while vacancy rates above 3.0% indicate an oversupply of rental options. A rental market with a vacancy rate of 3.0% is considered at equilibrium (Brewsters Property Group n.d.).

The search engine on SQM Research (2020) only provides the option to search by postcode and as such results for the postcode of the two suburbs within the local area (2579) may be skewed by suburbs outside of the local area that share the same postcode.

The vacancy rate in the local area from March 2017–March 2018 was consistently below the 3.0% benchmark, indicating a tight rental market with an undersupply of rental housing during that time. From June 2018–March 2020 the rental vacancy rate was mostly above 3.0% (besides September 2018), with a significant oversupply of rental options in March 2020 (6.6%), coinciding with the beginning of restrictions related to COVID-19 and potentially attributable to many people losing employment and not being able to afford the same amount of rent as previously. In June 2020, the vacancy rate returned to below 3.0% (1.9%), before rising to 2.2% in October 2020, suggesting the rental market in the local area is tight, consistent with the low number of properties available to rent (see Table A.29) and low proportion of rented dwellings (see Section A.7.2). In comparison, the vacancy rate in the regional area (postcode 2580) has been consistently well below the 3.0% benchmark from March 2017–October 2020 suggesting an undersupply of rental housing in the regional area. This is consistent with the limited number of properties for rent in most suburbs in the regional area (besides Goulburn) in June 2021 (see Table A.29). The residential vacancy rate trends for the local area (2579) and regional area (2580) are available in Figure A.11.



Source: SQM Research 2020, Residential Vacancy Rates.

Figure A.11 Residential vacancy rate trends, 2019

A.7.5 New housing and rental supply

Housing forecasts for the regional area predict a total increase of 5,845 dwellings between 2016–2041 in response to population growth and shifting patterns in household structure and number (DPIE 2019). Household requirement and population growth forecasts in the regional area are provided in Table A.30.

Table A.30 Household requirement and population growth forecasts, 2016–2041

	2016	2021	2026	2031	2036	2041
Goulburn Mulwaree LGA						
Total households	12,234	12,880	13,421	13,905	14,307	14,591
Average household size	2.36	2.31	2.27	2.23	2.20	2.17
Required dwellings	14,262	15,015	15,645	16,210	16,679	17,010
Total dwelling change (required new dwellings)	--	753	630	565	469	331
Wingecarribee LGA						
Total households	19,674	20,577	21,327	21,898	22,235	22,372
Average household size	2.42	2.36	2.31	2.26	2.23	2.20
Required dwellings	22,589	23,625	24,486	25,142	25,529	25,686
Total dwelling change (required new dwellings)	--	1,036	861	656	387	157
Regional area						
Total households	31,908	33,457	34,748	35,803	36,542	36,963
Average household size				NA		
Required dwellings	36,851	38,640	40,131	41,352	42,208	42,696
Total dwelling change (required new dwellings)	--	1789	1491	1221	856	488

Source: DPIE 2019.

Notes: Average household size is taken from NSW DPIE 2019 but there is a mathematical discrepancy – average household size is not equal to the total population divided by the total number of households.

Recent growth in housing supply can be estimated from residential building approval figures for the regional area. In the year ending June 2020, there were 352 approvals for new houses and 115 approvals for other residential buildings (equalling a total of 467 new residential building approvals for the year). This represents a decrease of 357 total approvals from the previous year. There have also been 639 residential buildings approved to be built in the regional area in the financial year 2020–2021 as of May 2021 fiscal year-to-date (FYTD). Residential building approvals in the regional area are presented in Table A.31.

Table A.31 Total residential building approvals in the regional area, 2012–2021

	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	2019–2020	2020–2021 April FYTD
Goulburn Mulwaree LGA									
New Houses	128	115	165	107	86	183	151	136	223
New Other Residential	15	4	12	22	12	43	109	93	67
Total	143	119	177	129	98	226	260	229	290
Wingecarribee LGA									
New Houses	131	182	432	296	251	286	470	216	195
New Other Residential	11	45	87	144	79	108	94	22	154
Total	142	227	519	440	330	394	564	238	349
Regional area									
New Houses	259	297	597	403	337	469	621	352	418
New Other Residential	26	49	99	166	91	151	203	115	221
Total	285	346	696	569	428	620	824	467	639

Source: profile.id 2021.

To determine if residential building approvals in the regional area will adequately support expected demand for new dwellings, the median of the total residential building approvals from 2012–2021, equalling 569 approvals per year, is used as a reasonable estimation of residential building approvals into the future. The median of the total number of residential approvals from 2012–2021 provides a conservative estimate of the expected trends for building approvals in the regional area into the future, as it takes into account the fluctuations present in the previous approval rates. Although it is possible that actual residential approval totals could be higher or lower, without complete certainty in the factors that are driving approval decisions year on year, the median provides a reasonable degree of confidence in these estimations. The projected residential building approvals in the regional area from 2016–2041 are demonstrated in Table A.32.

Table A.32 Estimates of future building approvals in the regional area, 2016–2041

	2016–2021 ¹	2021–2026 ²	2026–2031	2031–2036	2036–2041
Estimated residential building approvals	2,978	2,845	2,845	2,845	2,845
Total dwelling change (required new dwellings)	1789	1491	1221	856	488

Notes: 1. 2016–2021 includes number of actual approvals from 2016–2021.
2. Projections from 2021–2041 are based on an estimate of 569 residential approvals per year.

Based on the above calculations, estimated future residential building approvals in the regional area are largely anticipated to accommodate estimated required new dwellings within the regional area.

A.8 Local business and industry

Construction is the top industry of employment in the local area providing 12.9% of employment, followed by health care and social assistance (10.3%), and accommodation and food services (8.5%). This differs from the regional area where the top three industries of employment are health care and social assistance (15.0%), public administration and safety (10.9%), and retail trade (10.7%), due to employment being concentrated in the regional centre of Goulburn where these services are most available. The high proportion of construction workers in the local area is consistent with the top occupations being technicians and trades workers, labourers, and machinery operators and drivers (see Section A.6). The high rate of employment in the health care and social assistance sector could be attributed to workers who travel to the regional area for work.

Industries of employment in Brayton differs from Marulan, with the second two top industries of employment being agriculture, forestry, and fishing (10.8%) and manufacturing (9.5%). The industries are also consistent with the high proportion of technicians and trades workers, labourers, and machinery operators and drivers in the suburb (see Section A.6).

The top industries of employment within the area of social influence are available in Table A.33, with the top three industries in each area highlighted.

Table A.33 Major industries of employment, 2016

Industry	Marulan	Brayton	Carrick	Local area	Goulburn Mulwaree LGA	Wingecarribee LGA	Regional area	NSW
Agriculture, Forestry and Fishing	4.7%	10.8%	10.3%	6.0%	3.8%	3.3%	3.5%	2.1%
Mining	7.1%	4.1%	0.0%	6.0%	1.6%	1.1%	1.3%	0.9%
Manufacturing	5.7%	9.5%	4.4%	6.0%	5.5%	7.0%	6.4%	5.8%
Electricity, Gas, Water and Waste Services	0.8%	0.0%	0.0%	0.6%	1.2%	0.9%	1.0%	0.9%
Construction	13.4%	8.1%	14.7%	12.9%	9.2%	10.0%	9.7%	8.4%
Wholesale Trade	1.8%	4.1%	0.0%	1.9%	1.8%	2.5%	2.2%	3.1%
Retail Trade	7.3%	8.1%	13.2%	8.0%	10.7%	9.7%	10.1%	9.7%
Accommodation and Food Services	10.4%	4.1%	0.0%	8.5%	7.8%	9.0%	8.5%	7.1%
Transport, Postal and Warehousing	8.7%	4.1%	0.0%	7.3%	5.0%	4.3%	4.6%	4.7%
Information Media and Telecommunications	0.6%	0.0%	0.0%	0.5%	0.9%	1.1%	1.0%	2.2%
Financial and Insurance Services	1.8%	4.1%	0.0%	1.9%	1.4%	2.3%	1.9%	4.9%
Rental, Hiring and Real Estate Services	1.6%	8.1%	0.0%	2.2%	1.4%	2.1%	1.8%	1.8%

Table A.33 Major industries of employment, 2016

Industry	Marulan	Brayton	Carrick	Local area	Goulburn Mulwaree LGA	Wingecarribee LGA	Regional area	NSW
Professional, Scientific and Technical Services	4.1%	0.0%	5.9%	3.8%	3.9%	6.7%	5.6%	8.1%
Administrative and Support Services	3.5%	0.0%	4.4%	3.2%	3.1%	3.9%	3.6%	3.5%
Public Administration and Safety	3.9%	6.8%	16.2%	5.5%	10.9%	4.3%	6.8%	6.0%
Education and Training	4.9%	6.8%	10.3%	5.7%	7.4%	9.3%	8.6%	8.4%
Health Care and Social Assistance	9.3%	18.9%	7.4%	10.3%	15.0%	12.5%	13.4%	12.5%
Arts and Recreation Services	0.6%	0.0%	0.0%	0.5%	1.2%	1.5%	1.4%	1.5%
Other Services	4.7%	5.4%	4.4%	4.7%	4.2%	4.1%	4.1%	3.7%

Source: ABS 2016, Census of Population and Housing: General Community Profiles.

In 2020, there were 8,249 registered businesses in the regional area. Of these registered businesses, 38.0% were classed as small businesses employing 1–19 employees, with a further 60.5% of businesses as non-employing (ABS 2020). Additionally, only 5.1% of businesses turned over \$2 million or more, with the largest proportion of businesses operating within the \$200,000 to less than \$2 million range. Registered businesses in the regional area are presented by employment size in Table A.34 and by turnover range in Table A.35.

Table A.34 Registered businesses by employment size, 2019

Area	Non-employing	1-19 employees	20-199 employees	200+ employees	Total
Goulburn Mulwaree LGA	58.4%	39.7%	2.0%	0.0%	2,391
Wingecarribee LGA	61.4%	37.3%	1.4%	0.0%	5,858
Regional area	60.5%	38.0%	1.6%	0.0%	8,249

Source: ABS 2020, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2016 to June 2020.

Table A.35 Registered businesses by turnover range, 2019

Area	\$0 to less than \$50k	\$50k to less than 200k	\$200k to less than \$2m	\$2m or more	Total
Goulburn Mulwaree LGA	28.6%	31.1%	35.2%	5.3%	2,391
Wingecarribee LGA	26.4%	33.8%	34.8%	5.0%	5,858
Regional area	27.0%	33.0%	34.9%	5.1%	8,249

Source: ABS, 2018, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2016 to June 2020.

Of the 8,249 registered businesses in the regional area, 17.8% were in the construction industry. The industry with the next highest percentage of registered businesses was the agriculture, forestry and fishing industry (12.6%). However, this proportion is higher in Goulburn Mulwaree LGA (20.4%) compared to Wingecarribee LGA (9.5%). Registered businesses by industry are presented in Table A.36.

Table A.36 Registered businesses by industry, 2018

Industry	Goulburn Mulwaree LGA	Wingecarribee LGA	Regional area
Agriculture, forestry and fishing	20.4%	9.5%	12.6%
Mining	0.5%	0.3%	0.4%
Manufacturing	4.0%	4.2%	4.1%
Electricity, gas, water and waste services	0.5%	0.3%	0.4%
Construction	18.3%	17.6%	17.8%
Wholesale trade	2.1%	3.4%	3.0%
Retail trade	6.4%	6.6%	6.5%
Accommodation and food services	3.9%	3.9%	3.9%
Transport, postal and warehousing	6.2%	4.3%	4.9%
Information media and telecommunications	0.5%	1.0%	0.9%
Financial and insurance services	5.5%	8.1%	7.4%
Rental, hiring and real estate services	7.2%	9.4%	8.7%
Professional, scientific and technical services	7.9%	14.1%	12.3%
Administrative and support services	3.1%	4.4%	4.0%
Public administration and safety	0.3%	0.2%	0.3%
Education and training	1.4%	1.3%	1.3%
Health Care and Social Assistance	4.6%	5.7%	5.3%
Arts and recreation services	1.8%	1.7%	1.8%
Other services	5.3%	4.0%	4.4%
Currently unknown	0.0%	0.2%	0.1%
Total	2,391	5,858	8,249

Source: ABS, 2018, 8165.0—Counts of Australian Businesses, including Entries and Exits, June 2016 to June 2020.

A.9 Health and community well-being

A.9.1 Community health

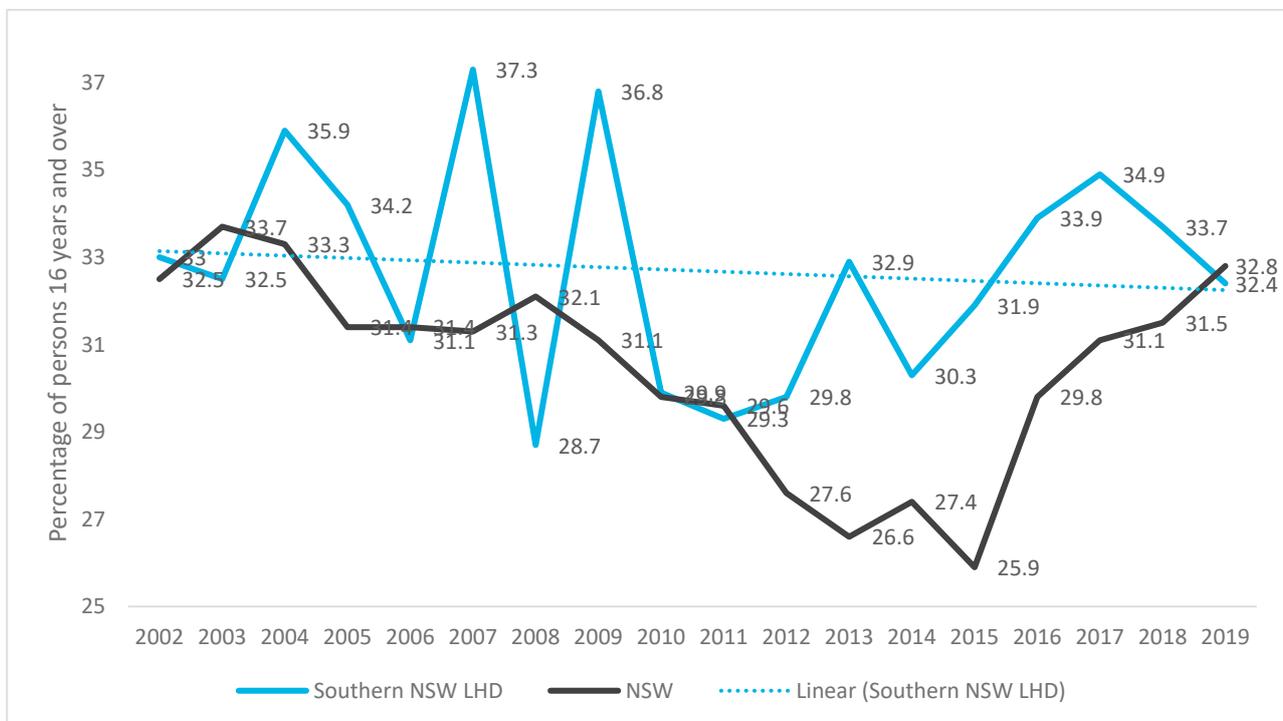
Social determinants of health, described as “the circumstances in which people grow, live, work, age, and the systems put in place to deal with illness...which are shaped by political, social, and economic forces” (AIHW 2020), indicate the health of a population. These include factors such as conditions of employment, provision of social services and support, and socioeconomic position. Although the local area and regional area have a substantially lower level of unemployment compared to greater NSW, there are relatively more households with low income and fewer people in high-skill occupations compared to the rest of NSW, suggesting higher rates of socio-economic disadvantage. Furthermore, the provision of social infrastructure and social services is anticipated to be less comprehensive compared to more urban regions of NSW, which may require travel outside of the local area to access specialist health and community services.

i Physical health

Health trends throughout Southern NSW LHD are assumed to reflect trends within the local and regional areas.

There are three major health risk factors that can be used as an indicator of population health: alcohol consumption, smoking, and obesity.

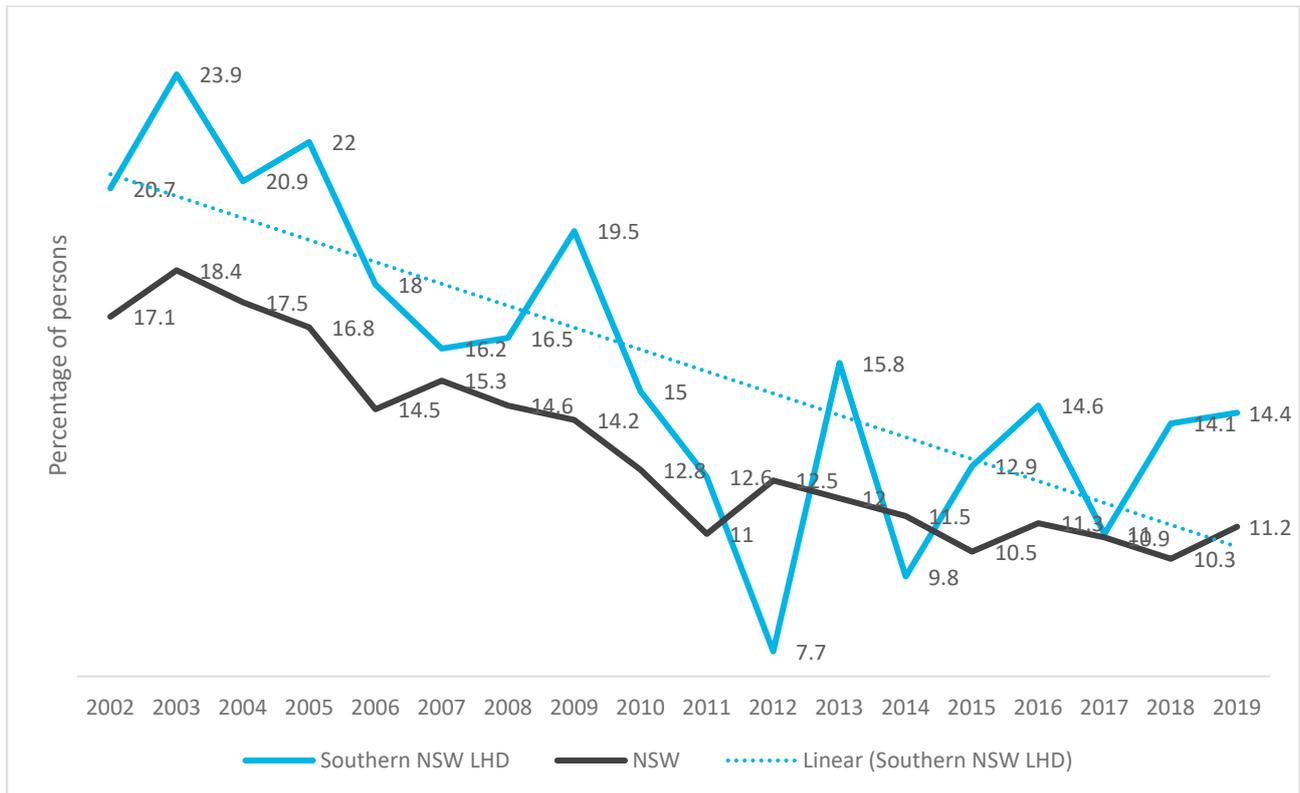
Trends were not available at the LGA level. However, trends in relation to the number of people who consume alcohol at levels posing a long-term health risk in the Southern NSW LHD show greater fluctuation and a consistently higher percentage of the population than in NSW, until 2019 when rates of consumption in the LHD were very similar, at 32.4 % compared to 32.8% in NSW following a decline in the LHD and gradual increase in NSW. Trends for alcohol consumption for adults in Southern NSW LHD are presented in Figure A.12.



Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.12 Alcohol consumption at levels posing a long-term health risk (proportion of persons aged 16 years and older), 2002–2019

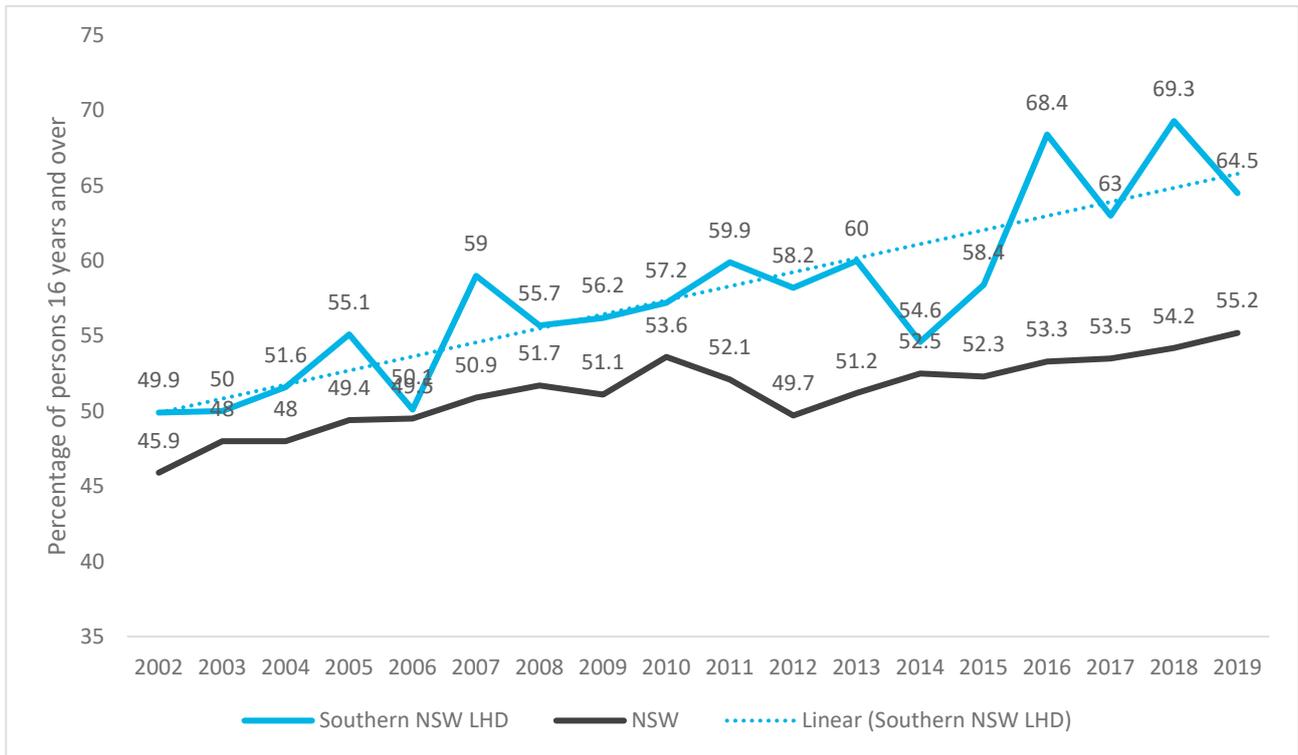
The proportion of daily smokers in Southern NSW LHD has been relatively consistent with NSW from 2002–2019, with a gradually decreasing trend, though with more variability throughout the years including peaks in 2003–2004 and 2008–2009. Most recent data from 2019 show that the LHD is below NSW with 9.1% of person smoking daily compared to 11.2%, respectively. Trends for adult daily smoking in Southern NSW LHD are presented in Figure A.13.



Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.13 Daily smoking in adults (proportion of persons), 2002–2019

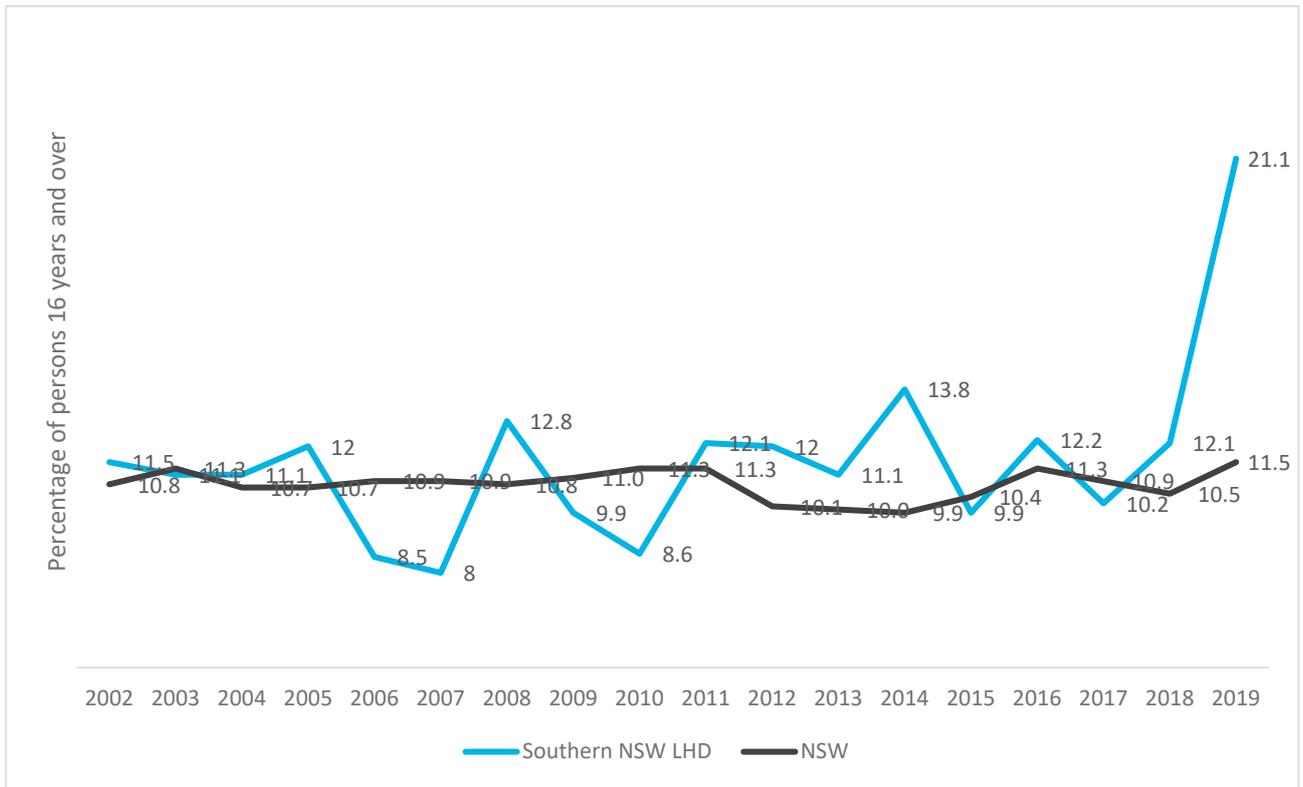
The proportion of persons aged 16 and over in Southern NSW LHD that reported being overweight or obese has been consistently lower than NSW from 2002–2019, with most recent data showing that 44.8% of the LHD population were overweight or obese compared to 55.2% in NSW. The data for Southern NSW LHD is typically more fluctuating than NSW, though following a similar gradually increasing trend. Overweight and obesity trends for adults in Southern NSW LHD are presented in Figure A.14.



Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.14 Overweight or obese adults (proportion of persons aged 16 years and older), 2002–2019

Prevalence of asthma has varied significantly year on year in Southern NSW LHD from 2002–2019. In Southern NSW LHD there was a significant increase in prevalence of asthma from 2018–2019, resulting in a significantly greater prevalence of asthma in Southern NSW LHD in 2019 (21.1%) compared to NSW (11.5%). Data for asthma in persons aged 16 years and over is presented in Figure A.15.



Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.15 Prevalence of asthma in persons aged 16 years and older, 2002–2019

ii Mental health

Data relating to the number of people that have been hospitalised as a result of self-harm is indicative of very poor and/or poorly managed mental health. Intentional self-harm hospitalisations trends in Southern NSW LHD have generally been increasing from 2001–2019, with a significant increase from 2011–2017. Trends in Southern NSW LHD have consistently remained above the NSW average. Data for intentional self-harm hospitalisations is presented in Figure A.16.

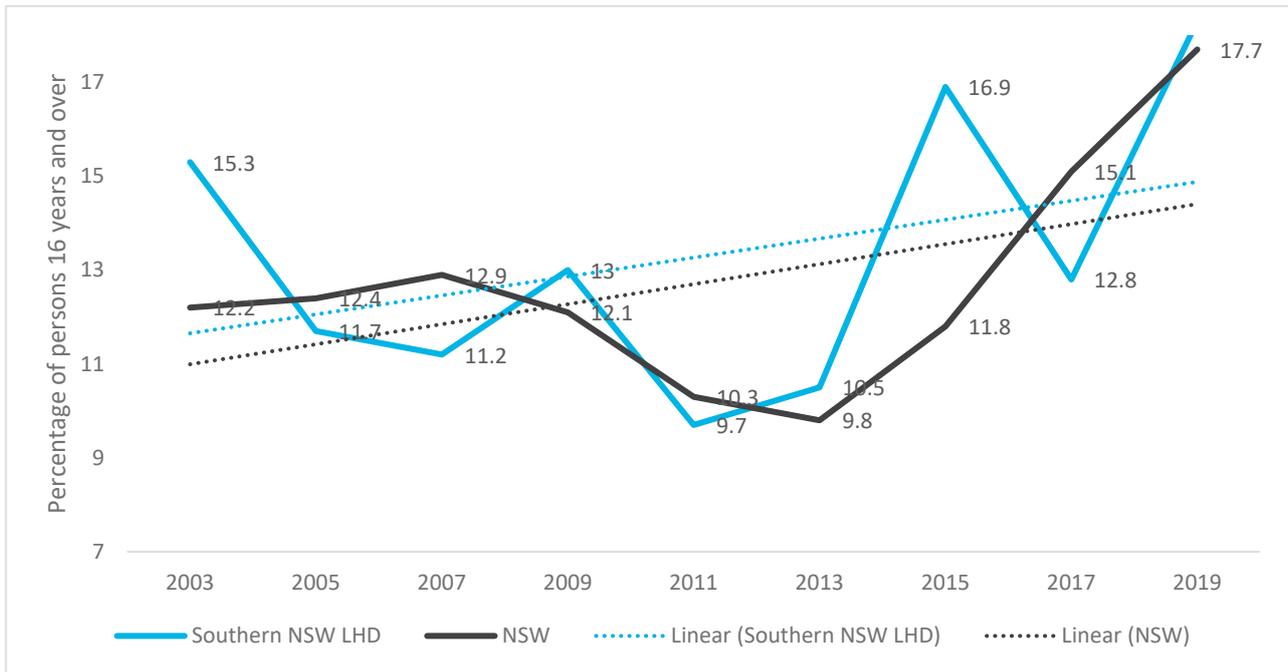


Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.16 Intentional self-harm hospitalisations (rate per 100,000 persons of all ages), 2001–2003 to 2016–2018

Data is also collected by NSW Health regarding the level of psychological distress using the Kessler 10 (K10) approach. This approach uses a 10-item questionnaire that measures anxiety, depression, agitation, and psychological fatigue in the most recent 4-week period and has been adopted by NSW Health as an indicator of mental health.

Trend data is only available at the LHD level and indicates that levels of psychological distress rated between high and very high in the Southern NSW LHD have been consistent with those seen across NSW, though with greater levels of variability across the years including a peak of 16.9% in 2015, and drop to 12.8% in 2017. Levels of psychological distress in Southern NSW LHD are presented in Figure A.17.



Source: NSW Health 2020, *Health Statistics NSW*.

Figure A.17 High and very high levels of psychological distress based on Kessler 10 scale (proportion of persons aged 16 years and older), 2003–2005 to 2015–2017

A.9.2 Voluntary work

Volunteering rates can give an indication of social cohesion in a community, and the willingness of people to help each other. Rates of volunteering in the local area (16.2%) are below the regional area (18.4%), area of reference (20.3%), and NSW (18.1%), suggesting marginally less social cohesion or willingness to help others. The proportion of persons who volunteered in the area of social influence is presented in Table A.37.

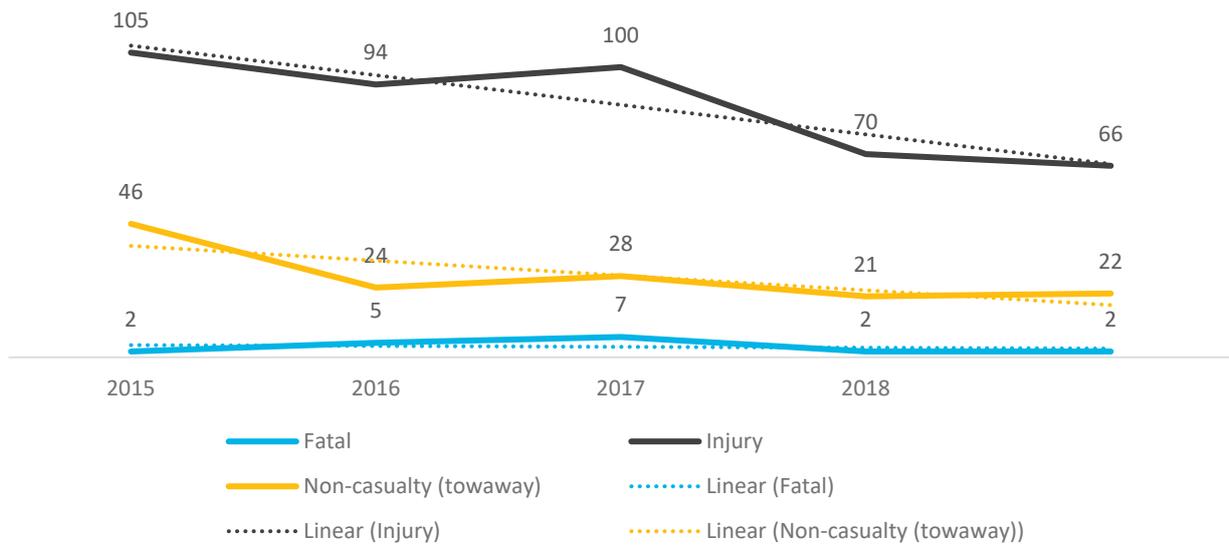
Table A.37 Volunteering rates, 2016

	Did voluntary work through an organisation or group (last 12 months)
Marulan	16.2%
Brayton	16.1%
Carrick	16.8%
Local area	16.2%
Goulburn Mulwaree LGA	18.4%
Wingecarribee LGA	23.5%
Regional area	16.2%
NSW	18.1%

Source: ABS 2016, *Census of Population and Housing: General Community Profiles*

A.9.3 Road incidents

Crash trends data is only available at the LGA level. This data is for Goulburn Mulwaree LGA as the local area is encompassed within this LGA. Incidents resulting in injury have generally been decreasing across Goulburn Mulwaree LGA from 2015–2019. Non-casualty incidents have generally been decreasing as well, with a significant decrease from 2015–2016. Fatal incidents have remained relatively stable, however there was an increase in fatal incidents in 2017 compared to other years. Crash trends for Goulburn Mulwaree LGA are presented in Figure A.18.

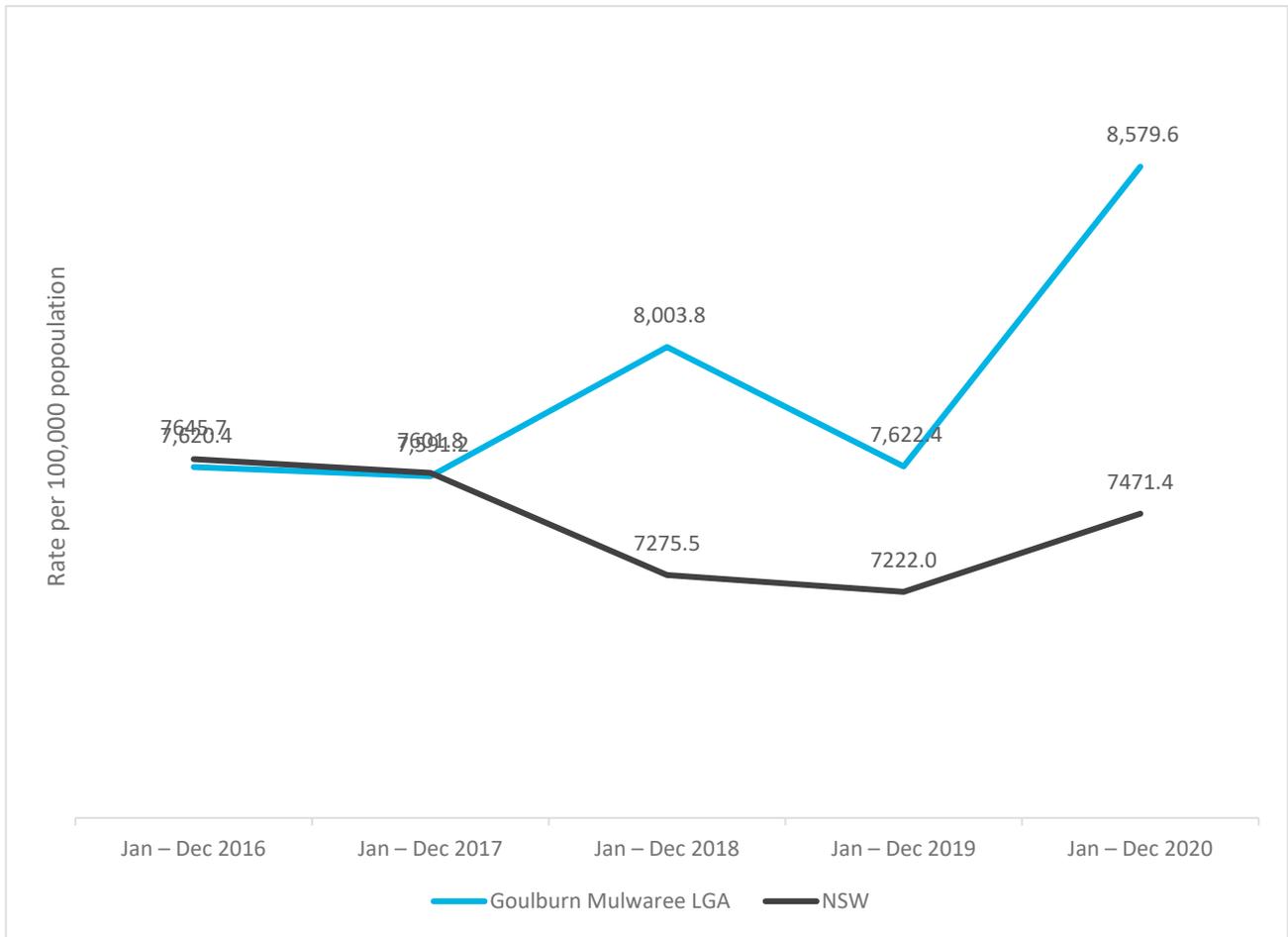


Source: Transport for NSW 2020.

Figure A.18 Regional area crash trends, 2015–2019

A.9.4 Community safety and crime

The following data has been sourced from the NSW Bureau of Crime Statistics and Research (BOCSAR). Data is only available at the LGA level. The following data is for Goulburn Mulwaree LGA, wherein the local area is located. Since 2017, rates of total offences (per 100,000 people) in Goulburn Mulwaree LGA has been increasing above the NSW average. In 2020, the rate of total offences in Goulburn Mulwaree LGA was 8,579.6 per 100,000 population compared to a rate of 7,471.4 per 100,000 population in NSW. The rate of total offences per 100,000 persons in Goulburn Mulwaree LGA is presented in Figure A.19.



Source: BOCSAR 2021 — NSW Local Government Area excel crime tables

Notes: Total excludes transport regulatory offences.

Figure A.19 Total offences rates per 100,000 population, 2016–2020

Recorded offences categories that have consistently had the highest rates throughout Goulburn Mulwaree are theft, other offences, drug offences and assault (see Table A.38 and Figure A.20). In 2020, the offence category with the highest rate in Goulburn Mulwaree LGA was theft (2,200.3 per 100,000 persons).

Table A.38 Crime trends, 2016–2020

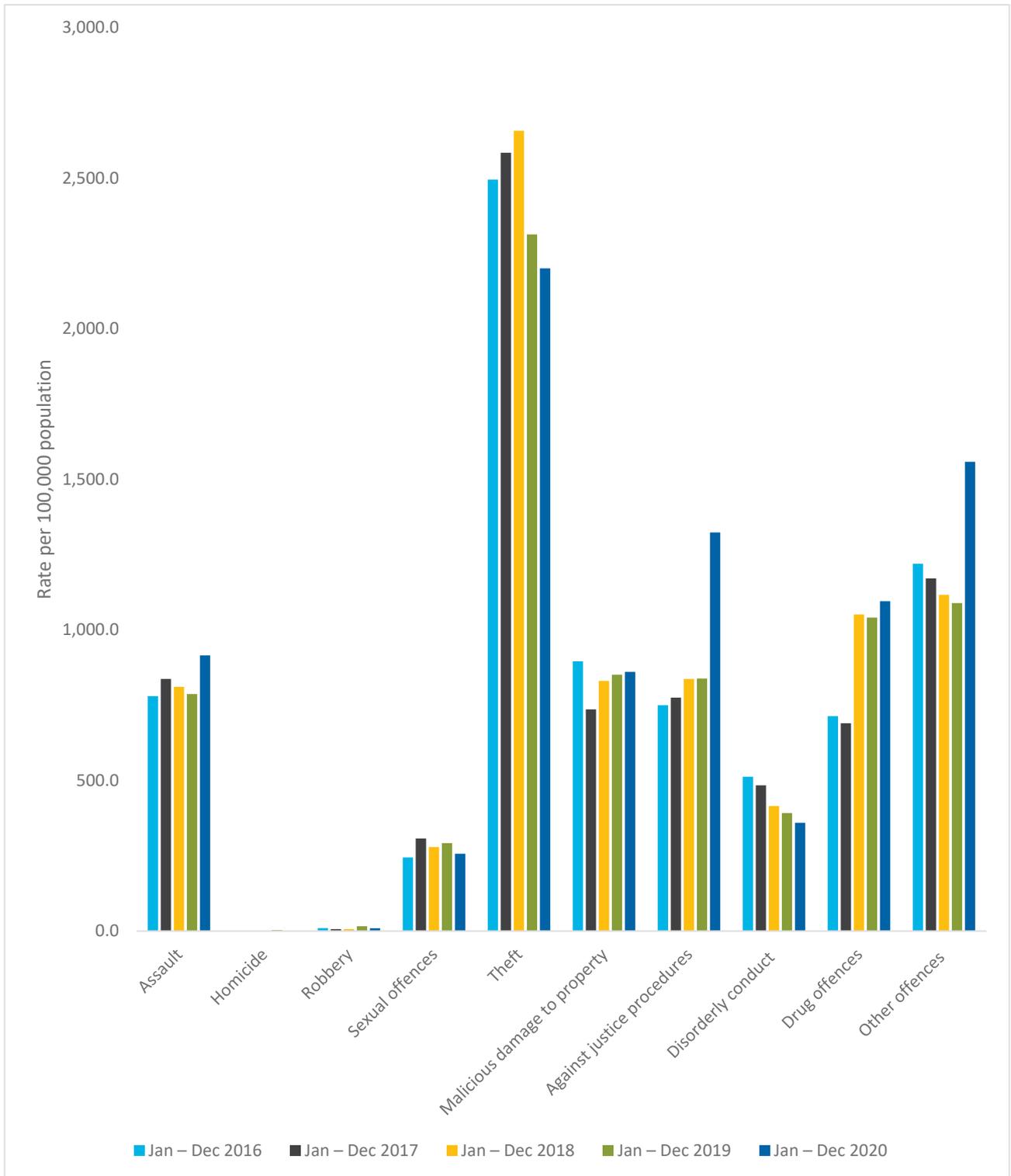
Offence category	Rate per 100,000 population				
	Jan–Dec 2016	Jan–Dec 2017	Jan–Dec 2018	Jan–Dec 2019	Jan–Dec 2020
Goulburn Mulwaree LGA					
Assault	779.9	837.3	811.1	787.0	915.5
Homicide	0.0	0.0	0.0	3.2	0.0
Robbery	9.9	6.5	6.5	16.1	9.6
Sexual offences	244.5	307.4	279.0	292.3	257.0
Theft	2,495.0	2,583.8	2,657.1	2,312.7	2,200.3

Table A.38 Crime trends, 2016–2020

Offence category	Rate per 100,000 population				
	Jan–Dec 2016	Jan–Dec 2017	Jan–Dec 2018	Jan–Dec 2019	Jan–Dec 2020
Malicious damage to property	895.5	735.9	830.5	851.2	860.9
Against justice procedures	750.1	775.1	837.0	838.4	1,323.4
Disorderly conduct	512.2	484.1	415.3	391.9	359.8
Drug offences	713.8	690.1	1,051.2	1,040.7	1,095.3
Other offences	1,219.4	1,170.9	1,116.0	1,088.9	1,557.9
TOTAL	7,620.4	7,591.2	8,003.8	7,622.4	8,579.6
NSW					
Assault	817.7	801.2	803.1	818.2	791.5
Homicide	1.4	1.0	1.3	1.4	1.2
Robbery	30.4	30.9	31.2	31.6	26.2
Sexual offences	158.8	174.9	174.6	182.4	185.6
Theft	3,030.9	2,855.2	2,803.8	2,796.6	2,204.9
Malicious damage to property	812.3	777.7	734.2	706.7	658.3
Against justice procedures	851.3	814.3	828.2	921.4	981.7
Disorderly conduct	282.2	260.3	247.9	251.0	228.5
Drug offences	609.9	580.3	600.3	652.0	641.1
Other offences	1,003.6	980.1	1,006.2	1,059.6	1,183.8
TOTAL	7,598.5	7,275.9	7,230.8	7,420.9	6,902.8

Source: BOCSAR 2021 — NSW Local Government Area excel crime tables

Notes: Total excludes transport regulatory offences.



Source: NSW Department of Justice 2020, Bureau of Crime Statistics and Research— NSW Local Government Area excel crime tables

Figure A.20 Offences rates per 100,000 population in Goulburn Mulwaree LGA, 2016–2020

A.10 Acronyms

Table A.39 Acronyms

Acronym	
ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum, Assessment and Reporting Authority
ACECQA	Australian Children's Education and Care Quality Authority
AHMAC	Australian Health Ministers' Advisory Council
AHRC	Australian Human Rights Commission
AIHW	Australian Institute of Health and Welfare
BOCSAR	Bureau of Crime Statistics and Research
DPE	Department of Planning and Environment (now DPIE)
DPIE	Department of Planning, Industry and Environment
FYTD	Fiscal year-to-date
GP	General practitioner
IAIA	International Association for Impact Assessment
IEO	Index of Education and Occupation
IER	Index of Economic Resources
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRSD	Index of Relative Socio-Economic Disadvantage
K10	Kessler 10
LGA	Local Government Area
LHD	Local Health District
NSW	New South Wales
OSHC	Outside of school hours care
PES	Post Enumeration Survey
REINSW	Real Estate Institute of New South Wales
SEIFA	Socio-Economic Indexes for Areas
SES	State Emergency Service
SIA	Social impact assessment
SIA Guideline 2017	<i>Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development</i>
SSC	State Suburb Classification
TfNSW	Transport for New South Wales
The Continuation Project	the Gunlake Quarry Continuation Project

A.11 References

ABS 2006, Census of Population and Housing: General Community Profiles, Australian Bureau of Statistics.

ABS 2011, Census of Population and Housing: General Community Profiles, Australian Bureau of Statistics.

ABS 2016a, Census of Population and Housing: General Community Profiles, Australian Bureau of Statistics.

ABS 2016b, Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016, Australian Bureau of Statistics.

ABS 2016c, Census of Population and Housing: Estimating homelessness, 2016, Australian Bureau of Statistics.

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Appendix B

Risk framework



Risk rating methodology for SIA *

SIA definitions

Positive Consequences (Benefits)

Extent of the benefit (people & geography)	The local, regional and potentially the national economy will benefit significantly. Improvements on social services and/or social cohesion.	The local and regional economy will benefit. Improvements on social services.	The local economy will benefit. Improvements on social services.	Marginal improvements/contribution to local economy. Marginal improvements/contribution to social services and/or social cohesion.	Level of impact
Cumulative duration the benefit is experienced	Benefits will realise in the short term and will be permanent	Benefits will realise in the short to medium term and may <u>or</u> may not be permanent	Benefits will realise in the medium to long term and are not permanent	Benefits will realise in the short term and are not permanent	Cumulative duration the impact is experienced

* Sections shaded in grey need to be customised for each discipline, currently these are for SIA.

		4	3	2	1
		Highly Desirable	Desirable	Minor	Minimal
Likelihood	5 Almost certain Has occurred in the past in this project (or operation) or in similar project OR circumstances could cause it to happen during the project (or operation).	Significant (15)	Significant (12)	Moderate (8)	Limited (5)
	4 Likely Has occurred in the life of this project (or similar project*) or in the last few years of operations or circumstances could cause it to occur again in the short term.	Significant (14)	Significant (11)	Moderate (7)	Limited (4)
	3 Possible Has occurred at least once in this project or a similar project (or in the history of this operation).	Significant (13)	Significant (10)	Moderate (6)	Limited (3)
	2 Unlikely Has never occurred in this project (or operation) but has occurred at other similar projects (operations) with similar risk/benefit profile.	Significant (12)	Moderate (9)	Limited (5)	Limited (2)
	1 Rare Is possible, but has not occurred to date in this project or similar projects.	Significant (11)	Moderate (8)	Limited (4)	Limited (1)

← Aim to maximise benefits

Benefit assessment and enhancement plan

Promote actions and/or design that realises the benefit with limited inputs. Investigate whether changes in the implementation/design can make the benefit 'moderate' or 'significant'	Limited (1-5)
Actively promote actions and/or design that realises the benefit. Investigate whether changes in the implementation/design can make the benefit 'significant'	Moderate (6-9)
Actively promote and prioritise actions and or design that realises the residual benefit.	Significant (10-15)

Short term __ months/years
 Medium term __ months/years
 Long term __ month/years



Risk rating methodology for SIA *

SIA definitions

Extent of the benefit (people & geography)

	No or negligible socioeconomic impact.	Socioeconomic impact that will take small effort to restore and does not threaten livelihood. No exogenous resources are required for recovery.	Socioeconomic impact will require minimal additional external resources to recover.	Socioeconomic impact will depend on reasonable amount of external resources to recover.	Socioeconomic impact will depend on significant external resources to recover and may not be back to how it was before the impact.
Cumulative duration the benefit is experienced	Short timeframe impact on livelihood or liveability.	Impacts on the livelihood or liveability are limited to the life of the project.	Impacts on livelihood and/or liveability will survive the life of the project.	Impacts on livelihood and liveability could survive long after the life of the project or can be permanent.	Impacts on livelihood and liveability survive long after the life of the project and are permanent.

Level of impact

Cumulative duration the impact is experienced

* Sections shaded in grey need to be customised for each discipline, currently these are for SIA.

		1	2	3	4	5
		Negligible	Marginal	Moderate	Major	Intolerable
Likelihood	5 Almost certain Has occurred in the past in this project (or operation) or in similar project OR circumstances could cause it to happen during the project (or operation).	Low (6)	Medium (8)	High (12)	Unacceptable (16)	Unacceptable (16)
	4 Likely Has occurred in the life of this project (or similar project*) or in the last few years of operations or circumstances could cause it to occur again in the short term.	Negligible (4)	Low (7)	Medium (10)	High (14)	Unacceptable (16)
	3 Possible Has occurred at least once in this project or a similar project (or in the history of this operation).	Negligible (3)	Low (6)	Medium (9)	High (13)	Unacceptable (16)
	2 Unlikely Has never occurred in this project (or operation) but has occurred at other similar projects (operations) with similar risk/benefit profile.	Negligible (2)	Low (6)	Medium (8)	Medium (11)	Unacceptable (16)
	1 Rare Is possible, but has not occurred to date in this project or similar projects.	Negligible (1)	Negligible (5)	Low (7)	Medium (10)	High (15)

← Aim to minimise impacts

Residual risk assessment and mitigations plan

No major concern - systems and processes managing risks are adequate	Negligible (1-5)	Low (6-7)
Periodic monitoring - improve controls or monitor risk to ensure residual rating does not increase	Medium (8-11)	
Continuous review - confirm adequacy of controls and continued monitoring to maintain or reduce risk	High (12-15)	
Active management - urgent treatment required to allow project to proceed	Unacceptable (16)	

Short term __ months/years
 Medium term __ months/years
 Long term __ month/years

Appendix C

Curricula Vitae

Amanda Micallef

Social Planner

Curriculum vitae

Since joining EMM, Amanda has conducted a range of social planning and impact assessment projects, including baseline studies, risk assessments, social data collection, data analysis, and community and stakeholder engagement. Her community engagement experience includes online community engagement, indigenous engagement, and the co-creation of youth indigenous development programs in Guatemala.

Amanda has worked with clients across a range of sectors, including mining and extractives, renewable energies, critical infrastructure, and social infrastructure, in New South Wales, Queensland, and Victoria.

Qualifications

- Master of Development Practice, University of Queensland, 2019
- Bachelor of Arts in International Development, University of Guelph, 2017
- Member Planning Institute of Australia

Career

- EMM Consulting, May 2019 – present
- Developmental Economics Tutor, University of Guelph, 2015 – 2017

Representative experience

Social planning and impact assessment

- Hunter Valley Operations (HVO) Continuation Project, technical assistance for social impact assessment and community engagement, Hunter Valley NSW (Glencore)
- Cowal Gold Operation Open Pit Expansion, technical input for social impact assessment, Lake Cowal NSW (Evolution Mining)
- Wongawilli Mod 2, technical assistance for social impact assessment and community engagement, Wongawilli, NSW (Wollongong Coal)
- West Muswellbrook Exploration Project, social assessment and community engagement program, Muswellbrook NSW (Idemitsu Australia Resources)
- Baralaba South Project, technical input social impact assessment, Baralaba Qld (Mount Ramsay Coal)
- Moorebank Avenue Realignment Works, social baseline study, data analysis, social risk assessment Moorebank NSW (Qube Holdings Limited)
- Snowy 2.0 Polo Flat Segment Factory, community engagement, data analysis, social risk assessment, Polo Flat NSW (Snowy Hydro Limited)
- Snowy Hydro 2.0 Pacific Hills Workers Accommodation, community information sheet, Cooma NSW (Snowy Hydro Limited)

Servicing projects throughout Australia and internationally

- Gunlake Quarry Continuation Project, project manager for social impact assessment, assistance for community engagement program, Marulan NSW (Gunlake Quarries)
- New Cobar Complex Project, social baseline study, community engagement, data analysis, social risk assessment Cobar NSW (Aurelia Metals Ltd)
- Dubbo Quarry Continuation, social baseline study, community engagement, data analysis, social risk assessment, Dubbo NSW (Holcim Australia Pty Ltd)
- Hume Coal Project, social impact assessment revisions in response to the Independent Planning Commission Assessment Report, Southern Coalfield of NSW (Hume Coal Pty Limited)
- Berrima Rail Project, social impact assessment revisions in response to the Independent Planning Commission Assessment Report, Southern Coalfield of NSW (Hume Coal Pty Limited)
- Burrawang to Avon Tunnel Project, social baseline study including social infrastructure and housing information, Illawarra region of NSW (WaterNSW)
- Dungowan Dam, social impact assessment and engagement, development of community information sheets, community survey development, Tamworth region of NSW (WaterNSW)
- Mole River Dam, social impact assessment, development of community information sheets, community survey development, Tenterfield region of NSW (WaterNSW)
- MacIntyre Windfarm Precinct, technical assistance for social impact assessment and community engagement, 50 km South-West of Warwick, QLD (ACCIONA)
- Sundown Solar Farm Project, project manager for social impact assessment, Spring Mountain NSW (Canadian Solar)

Publications

Micallef, A et al. 2016, ICT and Agriculture in the Global South, paper prepared for World Accord, presented at the University of Guelph.

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Andrea Kanaris

Associate, Social Impact Assessment National Technical Leader

Curriculum vitae

Andrea is a Social Scientist / Social Planner with over 20 years' experience across corporate and government sectors.

She is an innovative, result-driven leader and facilitator of positive change and strategic direction. She has gained a broad range of expertise in providing government and corporate stakeholders advice on policy, program management, quality assurance, planning, sustainability, and stakeholder engagement.

She has also provided contemporary strategic advice on social impact assessment, led, and delivered policies and achieved quality stakeholder engagement outcomes.

Qualifications

- Masters Social Planning and Development (Post Graduate Diploma), University of Queensland (UQ),
- Bachelor of Social Science – Community and International Development, UQ
- Former Chair and Full Member Social Planning Chapter Queensland – Planning Institute Australia
- Member International Association of Impact Assessment

Career

- Associate, SIA National Technical Leader, April 2019-Present
- Principal Social Consultant, Umwelt Australia Pty Limited, March 2018–March 2019
- Social Consultant, Office of the Coordinator General, Department of State Development Strong and Sustainable Resources Communities Act & Social Impact Assessment, July 2017–March 2018
- Social Consultant, Queensland Health – Aboriginal and Torres Strait Islander Health Branch, March-July 2017
- Independent Consultant – Social Strategist / Social Planner, 2015–2017
- Director, Service Integration, Department of Housing and Public Works, March-July 2015
- Principal Consultant, ImpaxSIA Consulting, 2014–2015
- Director / Social Planner, Social Planning Services Australia, 2011–2015
- Project Manager, Metro South Hospital and Health Service, January-November 2014
- Chair Social Planning Chapter Queensland (Voluntary), The Planning Institute Australia, March-December 2013
- Social Planner, Sinclair Knight Merz, March-December 2011

Representative experience

Social impact assessments - NSW

- Wongawilli Mod 2, Project Director for the social assessment and engagement program (Wollongong Coal)

Macintyre Windfarm – Project Director for the SIA for the McIntyre Wind Farm, south-west of Warwick QLD (ACCIONA)

- New Cobar Mine – Project Manager for the SIA for the expansion of Aurelia Metals zinc / lead Mine in Cobar NSW (Aurelia Metals)
- Hunter Valley Operations (HVO) Continuation Project – Lead for the SIA and community and stakeholder engagement for the HVO Continuation Project in the Hunter Valley, NSW (Glencore)
- Burrawang to Avon Tunnel project Part 5 REF/ State Significant Infrastructure EIS (WaterNSW)
- Nyngan and Cobar Drought Water Security Project, Communications and Stakeholder Engagement (WaterNSW)
- Dungowan Dam, Society and Engagement (WaterNSW)
- Mole River Dam, Society and Engagement (WaterNSW)
- Social Baseline for the Dendrobium and Bulli Seam operations, conducted a social baseline and social impact and opportunities assessment for Illawarra Metallurgical Coal operations, Illawarra and Wollondilly region, New South Wales (South32)
- Dubbo Quarry Continuation Project, Social Impact Assessment, including community engagement and scoping workshop (Holcim (Australia) Pty Ltd)
- West Muswellbrook Exploration Project, social assessment and engagement program (Idemitsu Australia Resources)
- Hume Coal Project, social assessment and engagement program (Hume Coal)
- Snowy 2.0 Polo Flat Segment Factory, conducted a social impact assessment of the proposed segment factory at Polo Flat to identify the impacts on the communities in Cooma and Adaminaby in the Snowy Monaro Regional Council. Snowy Monaro region, NSW (Snowy Hydro Ltd.)
- Moorebank Avenue Realignment, social assessment and engagement program (Qube Holdings Pty Ltd)

Social impact assessments - QLD

- Macintyre Windfarm Precinct – Project Director for the SIA for the Macintyre Windfarm located 50 km South-West of Warwick, QLD (ACCIONA)
- Baralaba South Project – Project Director for the SIA for the Baralaba South Project in the Bowen Basin, Queensland (Baralaba Coal)
- Ensham Residual Void project, conducted a social impact assessment on three options for the rehabilitation of the residual voids for the Ensham Mine, as well as undertaking the stakeholder engagement manager role which recently gained approval for using their residual voids for water storage, Central Queensland (Idemitsu)
- Strong and Sustainable Resource Communities Act (SSRC Act) implementation, assisted with the implementation of the SSRC Act, and helped draft the Social Impact Assessment (SIA) Guideline for consultation, Queensland (Office of Coordinator-General)
- LNG Plant and Pipeline project, conducted and the social impact assessment technical report and EIS chapter, and undertook the stakeholder engagement, Gladstone, Queensland (Arrow Energy)
- LNG Plant and Pipeline project, prepared the social baseline study, and undertook stakeholder engagement interviews and assessment of social impacts for social impact assessment, Gladstone, Queensland (Arrow Energy)
- AQUIS Resort, expert peer review and advice for social impact assessment component of EIS, Cairns, Queensland (AQUIS Resort at the Great Barrier Reef Pty Ltd)
- Boral Gold Coast Quarry, prepared a social baseline study and community profile for social impact assessment and undertook community consultation activities, Gold Coast, Queensland (Boral).

Social impact assessments - VIC

- Wimmera Project – Project Director for the SIA for the Wimmera Project (Iluka Resources Limited)

Other projects

- Conducted an audit / review of Rio Tinto Coal's community development funds (CDF) and Aboriginal community development funds (ACDF), Clermont, Mackay and Emerald in Queensland and Singleton and Muswellbrook in New South Wales (Rio Tinto)



Servicing projects
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Appendix D

Review questions

D.1 SIA Guideline 2017 – Appendix D review questions

Table D.1 SIA Guideline 2017– Appendix D review questions

Reference number	SIA Guideline review question	Response
General		
1	Has the applicant applied the principles in Section 1.3? How?	Yes – see Section 3, 4, 5, 6, 7, 8 and 9
2	Does the lead author of the Scoping Report meet the qualification and skill requirements in Box 2?	Yes – see Appendix C
3	Does the lead author of the SIA component of the EIS meet the qualification and skill requirements in Box 4?	Yes – see Section 1.2.1 and Appendix C
4	Has the lead author of the SIA Report provided a signed declaration certifying that the assessment does not contain false or misleading information?	Yes – see Section 1.2.1i
Community engagement for social impact assessment		
5	Does the SIA include adequate explanations of how the engagement objectives have been applied? How?	Yes – see Section 3 and 6
6	Does the SIA demonstrate that there has been a genuine attempt to identify and engage with a wide range of people, to inform them about the project, its implications and to invite their input? How?	Yes – see Section 6
7	Does the SIA demonstrate that an appropriate range of engagement techniques have been used to ensure inclusivity and to ensure the participation of vulnerable or marginalised groups? How?	Yes – see Section 6
Scoping – area of social influence		
8	Does the Scoping Report identify and describe all the different social groups that may be affected by the project?	Yes – see Section 5.5.1i and 5.5.1ii of the Gunlake Quarry Continuation Project Scoping Report
9	Does the Scoping Report identify and describe all the built or natural features located on or near the project site or in the surrounding region that have been identified as having social value or importance?	Yes – see Section
10	Does the Scoping Report identify and describe current and expected social trends or social change processes being experienced by communities near the project site and within the surrounding region?	Yes – see Section 5.5.3 of the Gunlake Quarry Continuation Project Scoping Report
11	Does the Scoping Report impartially describe the history of the proposed project, and how communities near the project site and within the surrounding region have experienced the project to date and others like it?	Yes – see Section 1 and 2 of the Gunlake Quarry Continuation Project Scoping Report

Table D.1 SIA Guideline 2017– Appendix D review questions

Reference number	SIA Guideline review question	Response
Scoping – identifying social impacts		
12	Does the Scoping Report adequately describe and categorise the social impacts (negative and positive), and explain the supporting rationale, assumptions and evidence for those categories?	Yes – see Section 5.5.4 and Appendix A of the Gunlake Quarry Continuation Project Scoping Report
13	How has feedback from potentially affected people and other interested parties been considered in determining those categories? Does the Scoping Report outline how they will be engaged to inform the preparation of the SIA component of the EIS?	Yes – see Section 4 and 5 of the Gunlake Quarry Continuation Project Scoping Report
14	Does the Scoping Report identify potential cumulative social impacts?	Yes – see Section 5 of the Gunlake Quarry Continuation Project Scoping Report
Social baseline study		
15	Does the SIA component of the EIS discuss the local and regional context in sufficient detail to demonstrate a reasonable understanding of current social trends, concerns and aspirations?	Yes – see Section 5, 6.2.2 and Appendix A
16	Does the SIA component of the EIS include appropriate justification for each element in the social baseline study, and provide evidence that the elements reflect the full diversity of views and potential experiences in the affected community?	Yes – see Section 5, 6 and Appendix A
17	Does the social baseline study include an appropriate mix of quantitative and qualitative analysis, and explain data gaps and limitations?	Yes – see Section 5 and Appendix A
Prediction and analysis of impacts		
18	Does the SIA component of the EIS include an appropriate description of the potential impacts in terms of the nature and severity of the change and the location, number, sensitivity and vulnerability of the affected stakeholders?	Yes – see Section 8
19	Does the SIA component of the EIS identify potential impacts at all stages of the project life cycle?	Yes – see Section 8
20	Does the SIA component of the EIS appropriately identify and justify any assumptions that have been made in relation to its predictions?	Yes – see Section 8
21	Does the SIA component of the EIS include appropriate sensitivity analysis and multiple scenarios to allow for uncertainty and unforeseen consequences? If relevant, does it include comparisons with studies of similar projects elsewhere?	Yes – see Section 7 and 8

Table D.1 SIA Guideline 2017– Appendix D review questions

Reference number	SIA Guideline review question	Response
Evaluation of significance		
22	Does the SIA component of the EIS explain how impacts were evaluated and prioritised in terms of significance?	Yes – see Section 8
23	Does the evaluation of significance consider cumulative aspects where relevant?	Yes – see Section 8
24	Does the evaluation of significance consider the potentially uneven experience of impacts by different people and groups, especially vulnerable groups?	Yes – see Section 8
Responses and monitoring and management framework		
25	Does the SIA identify appropriate measures to avoid, reduce, or otherwise mitigate any significant negative impacts of the project, and justify these measures?	Yes – see Section 8 and 9
26	Does the SIA explain and justify measures to secure and/or enhance positive social impacts?	Yes – see Section 8 and 9
27	Does the SIA component of the EIS impartially assess the acceptability, likelihood and significance of residual social impacts?	Yes – see Section 8 and 9
28	Does the SIA component of the EIS propose an effective monitoring and management framework?	Yes – see Section 9

