Appendix L

Social impact assessment

EMM
creating opportunities

Holcim

Dubbo Quarry Continuation Project

Social Impact Assessment

Prepared for Holcim (Australia) Pty Limited
December 2020

EMM
creating opportunities

EMM
creating opportunities

Servicing projects throughout Australia and internationally

SYDNEY
Ground Floor, 20 Chandos Street
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3, 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1, 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

ADELAIDE
Level 4, 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
Ground Floor, 188 Normanby Road
Southbank VIC 3006
T 03 9993 1905

PERTH
Suite 9.02, Level 9, 109 St Georges Terrace
Perth WA 6000
T 02 9339 3184

CANBERRA
PO Box 9148
Deakin ACT 2600

Dubbo Quarry Continuation Project

Social Impact Assessment

Report Number

J180313 RP9

Client

Holcim (Australia) Pty Limited

Date

17 December 2020

Version

v1 Final

Prepared by

Amanda Micallef
Social Planner
17 December 2020

Approved by

Andrea Kanaris
Associate, SIA National Technical Leader
17 December 2020

Executive Summary

ES1 Overview

Dubbo Quarry (the quarry) is a basalt quarry owned and operated by Holcim (Australia) Pty Limited (Holcim), located approximately 1.9 kilometres (km) west of the city of Dubbo on Sheraton Road. The quarry falls within the Dubbo Regional Council local government area (LGA). The quarry has operated since 1980 under a development consent granted by Talbragar Shire Council. Accessible basalt resources within the existing quarry boundary are close to exhaustion and planning approval is required to allow the quarry to continue operations. Holcim is, therefore, seeking approval for the Dubbo Quarry Continuation Project (the Project) which involves the continued operation of the quarry through the development of two new resource areas to the south and west of the existing quarry boundary:

- the Western Extension Area (WEA) located within part Lot 22 DP 793541, west and north-west of the existing quarry boundary; and
- the Southern Extension Area (SEA) located within part Lot 100 DP 628628, to the south of the existing quarry boundary on the southern side of Eulomongo Creek.

These resource areas will provide sufficient resource for the quarry to continue operations for up to 25 years.

The Project is classified as State significant development (SSD) under Part 4, Division 4.1 of the NSW *Environmental Planning Assessment Act 1979* (EP&A Act). This report will accompany the environmental impact statement (EIS) prepared for the Project.

This Social Impact Assessment (SIA) has been prepared by EMM Consulting Pty Limited (EMM), on behalf of Holcim, to accompany the EIS for the Project. The SIA has been prepared to assess potential social impacts of the Project on the surrounding environment, and the scope of the work is based on the Secretary's Environmental Assessment Requirements (SEARs) for the EIS.

ES2 Study methodology

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), and developed in accordance with the Department of Planning and Environment (DPE) guideline *Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development, September 2017* (SIA Guideline). The assessment of the social impacts considered a range of complex factors and often competing interests. The impact assessment is reflective of this and has:

- assessed some aspects of the Project as both negative and positive as they relate to different groups of people;
- included negative impacts on local communities whilst 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.

A social impact workshop was conducted to assess impacts using a social risk framework based on a combination of consequence and likelihood. The social risk assessment is informed by the data collected from the literature review, social baseline study, review of technical studies, and conducted SIA field study.

ES3 Existing environment

The local area of social influence comprises the State Suburbs (SSCs) of Dubbo. The regional area of social influence includes the Dubbo region, within the Dubbo SA3 boundary defined by the Australian Bureau of Statistics. These communities have the potential to experience change during the establishment and operation of the Project.

ES4 Potential impacts of the proposal

The key potential social impacts identified were:

- Way of life:
  - ongoing access to adequate employment; and
  - land rehabilitation benefits.
- Culture:
  - destruction of culturally significant Indigenous artefacts.
- Health and well-being:
  - public safety issues due to truck movements through school zones.
- Surroundings:
  - surface water discharge from the quarry into Eulomogo Creek.
- Personal and property rights:
  - land rehabilitation impacts.
- Fears and aspirations:
  - contributions to continued economic growth and development in the local area and the region.

ES5 Proposed mitigation measures

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 will be developed for each management plan in consultation with stakeholders and will be monitored throughout the Project life span.

An adaptive approach is proposed allowing Holcim to manage and respond to changing circumstances and new information over time through ongoing monitoring and periodic review of mitigation strategies allowing for modification if required and appropriate. This adaptive approach will ensure that the management of social impacts identified in the SIA will result in minimising negative social impacts and maximising social benefits for the local community.

ES6 Conclusions

This SIA has provided an assessment of potential social impacts and benefits associated with the Project. It identifies the relevant social issues, social impacts and benefits, and associated mitigation and enhancement measures applicable to design, construction, and operation of the Project.

Table of Contents

Appendices

Tables

Figures

1 Introduction

This Social Impact Assessment (SIA) has been prepared for Holcim (Australia) Pty Limited (Holcim) to examine the social impacts of continued operation and extension of extractive activities at Dubbo Quarry.

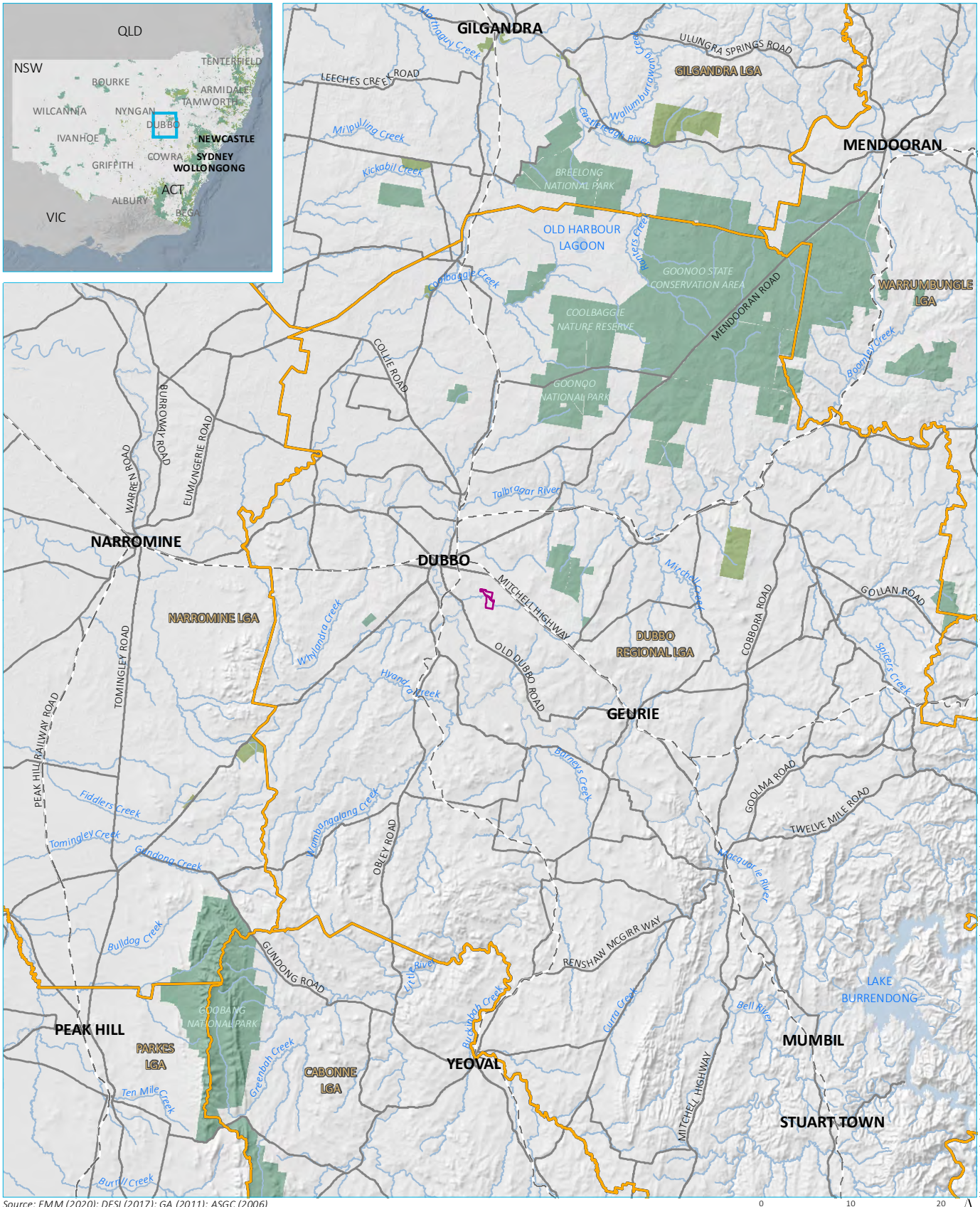
1.1 Project background

Dubbo Quarry (the quarry) is a basalt quarry owned and operated by Holcim (Australia) Pty Limited (Holcim), located approximately 1.9 kilometres (km) west of the city of Dubbo on Sheraton Road. The quarry falls within the Dubbo Regional Council local government area (Dubbo LGA). The regional and the local context of the quarry are shown in Figure 1.1 and Figure 1.2, respectively. The quarry is located on the former Lot 1 DP 623367 which was subject of a boundary adjustment in 2018 that formed part Lot 221 and Lot 222 DP 1247780. The Project area is shown in Figure 1.3, with features of the existing site in

The quarry produces high quality basalt aggregates for use in the construction industry in concrete, asphalt, road base and other applications. The quarry produces many types of road base, including premium road base frequently used by local councils and Transport for NSW (TfNSW). Precoated sealing aggregates from crushed basalt are also produced. The quarry sells products to civil construction projects, engineering projects, subdivision developments, industrial projects, commercial and domestic customers.

The quarry operates under Development Consent SPR79/22 (the existing consent) granted by the former Talbragar Shire Council on 18 March 1980. The existing consent for the quarry operations does not specify a production rate limit; however, production is restricted by the capacity of its existing processing infrastructure which can handle up to 500,000 tonnes per annum (tpa). The quarry currently operates at an average production rate of about 350,000 tpa.

Accessible basalt resources within the land to which the existing consent applies (the existing site) are close to being exhausted. Holcim is, therefore, seeking planning approval to extract material outside of the existing site to allow the quarry to continue operating. This is referred to as the Dubbo Quarry Continuation Project (the Project).



Source: EMM (2020); DFSI (2017); GA (2011); ASGC (2006)

0 10 20 km

GDA 1994 MGA Zone 55

N

\\Emmsvr1\emm\Jobs\2018\J180313 - Dubbo Quarry EIS\GIS\02_Maps_EIS\EIS002_RegionalLocation_20201120_04.mxd 15/01/2021

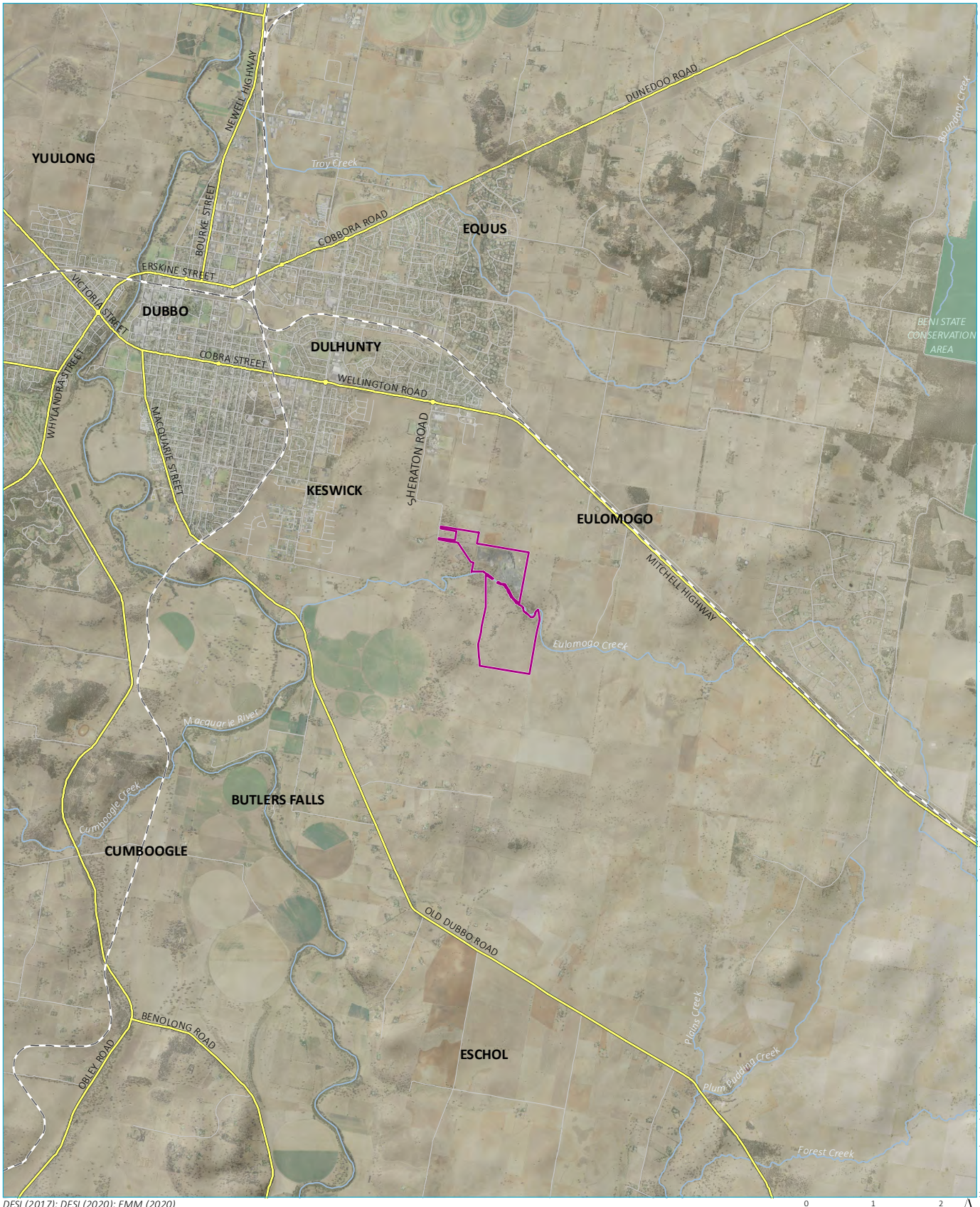
KEY

- Project area
- Rail line
- Major road
- Named watercourse
- Named waterbody
- Local government area
- NPWS reserve
- State forest

Regional setting

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 1.1

EMM creating opportunities



DFSI (2017); DFSI (2020); EMM (2020)

0 1 2 km

GDA 1994 MGA Zone 55

N

\\Emmsvr1\emm\Jobs\2018\J180313 - Dubbo Quarry EIS\GIS\02_Maps_EIS\EIS003_LocalSetting_20201021_03.mxd 15/01/2021

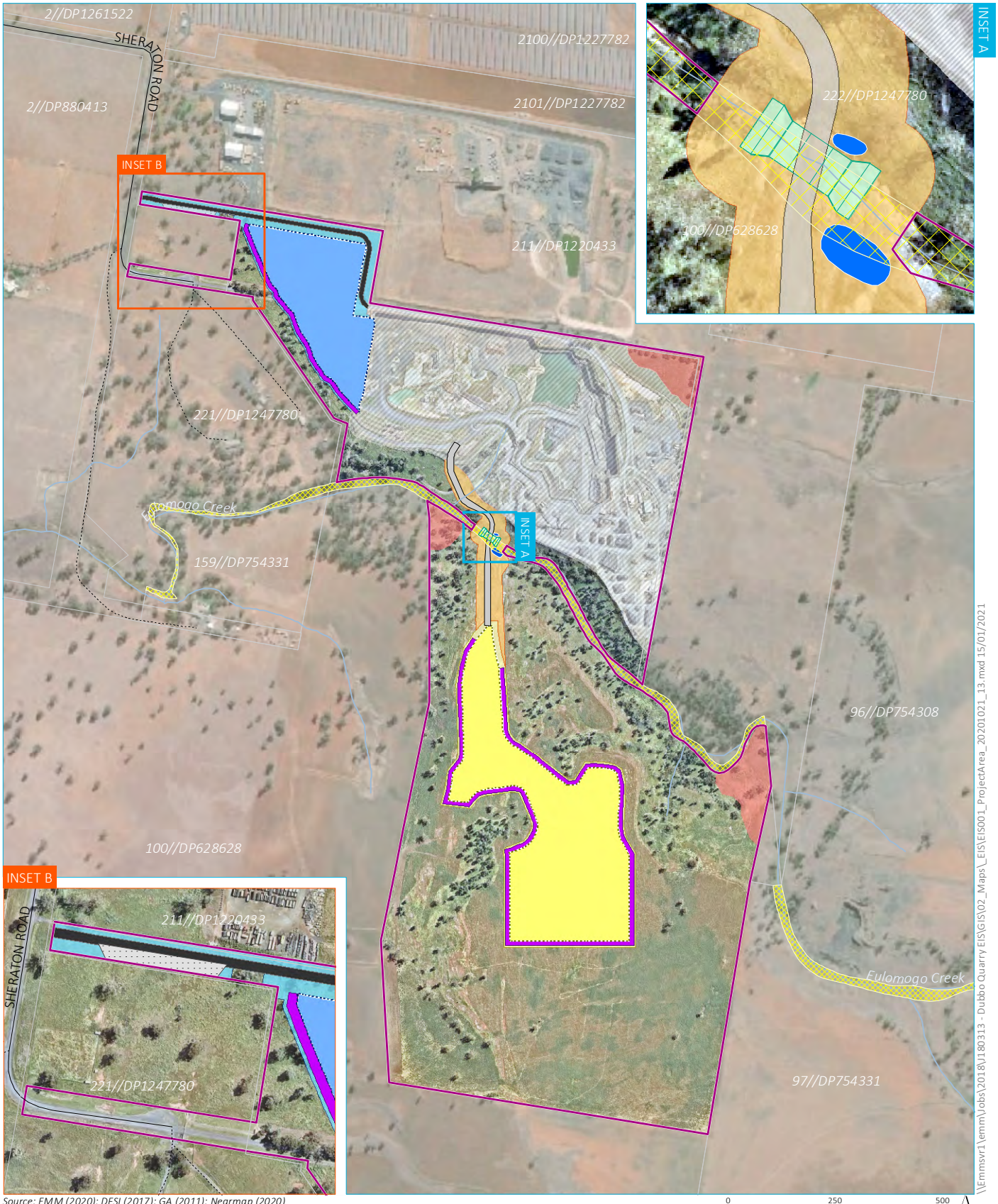
KEY

- Project area
- Rail line
- Major road
- Minor road
- Named watercourse
- NPWS reserve

Local context

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 1.2

EMM creating opportunities



Source: EMM (2020); DFSI (2017); GA (2011); Nearmap (2020)

0 250 500 m

GDA 1994 MGA Zone 55

N

\\Emmsvr1\emmVJobs\2018\J180313 - Dubbo Quarry EIS\GIS\02_Maps_EIS\EIS001_ProjectArea_20201021_13.mxd 15/01/2021

KEY

- Project area
- Sediment pond
- Aboriginal protection zone
- Indicative existing disturbance area
- Proposed haul road
- Indicative proposed water crossing
- Bund wall
- Proposed access road
- Truck tarping area
- Western extension area
- Western disturbance area
- Haul road disturbance area
- Southern extension area
- Southern disturbance area
- Minor road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary (data does not align with surveyed site boundary)
- Crown land

Project area

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 1.3

EMM creating opportunities

Source: EMM (2020); DFSI (2017); Nearmap (2020)

0 100 200 m
GDA 1994 MGA Zone 55

N

KEY

- Pit boundary
- Surveyed site boundary
- Minor road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary (data does not align with surveyed site boundary)

Site feature

1. In pit dam
2. West pit
3. Rehabilitation area
4. V-notch weir
5. Pump 1
6. East pit
7. Pump 2
8. Pump 2 storage pond (holding)
9. Primary crusher
10. Tertiary crusher
11. Secondary crusher
12. Diesel store
13. Workshop
14. Stockpile area
15. Pug mill
16. Laydown area
17. Site office
18. Toilets
19. Truck parking
20. Culvert
21. Settling pond
22. Current site access
23. Transformer station
24. Jet patcher/ paveline loading facility
25. Bitumen emulsion plant
26. Spare part storage
27. Employees car park
28. Pre coat plant
29. Pump house
30. Pit water storage
31. Main control centre
32. West pit pond
33. Tertiary Screen

Existing site

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 1.4

EMM
creating opportunities

1.2 The Project

The Project involves continued operations in the existing site and the development of two new resource areas:

- the Western Extension Area (WEA) located within part Lot 22 DP 793541, west and north-west of the existing quarry boundary; and
- the Southern Extension Area (SEA) located within part Lot 100 DP 628628, to the south of the existing quarry boundary on the southern side of Eulomongo Creek.

These resource areas will provide sufficient resource for the quarry to continue operations for up to an additional 25 years. The existing site is shown in Figure 1.4

The Project includes the construction or modification of the following site components:

- a new internal quarry access road which intersects with Sheraton Road just north of the existing intersection with Sheraton Road, which is referred to as the 'proposed access road';
- a new internal haul road to connect the existing site with the SEA, which will include construction of a culvert type crossing across Eulomogo Creek and is referred to as the 'Southern haul road';
- modifications to the existing water management infrastructure within the existing site; and
- additions to the existing water management infrastructure to service the WEA and SEA.

Consistent with current operations, a peak production rate of 500,000 tpa is proposed for the Project. The Project would extend the quarry life by up to 25 years, dependent on future quarrying and processing rates.

There will be no change to the existing fixed infrastructure or method of quarrying and processing. Hours of operation would remain as per current operations.

The Project is classified as State significant development (SSD) under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). A development application (DA) for SSD must be accompanied by an environmental impact statement (EIS). On 3 April 2020, the Secretary of the Department of Planning, Industry and Environment (DPIE) issued Secretary's Environmental Assessment Requirements (SEARs) for the EIS for the Project. The SSD application number is SSD-10417.

Existing power and telecommunications lines, near the proposed access road and WEA, will require realignment to facilitate extraction in the WEA. These activities will be subject to separate approvals from relevant service providers (Essential Energy and NBN Co) under Part 5 of the EP&A Act.

A detailed description of the Project is provided in Chapter 2 of the EIS (EMM 2020a).

1.3 Purpose of this report

This SIA report supports the EIS for the Project. It documents the assessment methods and results, the initiatives built into the Project design to avoid and minimise associated impacts to the local community, and the mitigation and management measures proposed to address any residual impacts not able to be avoided.

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 Project;
- provide mitigation measures to reduce the negative social impacts and enhancement measures for significant positive impacts; and
- develop a monitoring and management framework.

1.4 Report objectives

This SIA has been prepared by EMM Consulting Pty Limited (EMM) to assess the potential social impacts associated with the Project.

This assessment addresses the relevant SEARs (refer to Section 1.5) and has been prepared in accordance with the *Social Impact assessment guideline for State Significant mining, petroleum production and extractive industry development* (SIA Guideline) (DPE 2017).

The SIA has:

- identified the area of social influence for the Project (ie where the social impacts may be felt);
- examined the profile of the community and social indicators;
- described social trends and changes impacting the community;
- identified what matters to the community (attitudes, values, customs, concerns, way of life, aspirations);
- analysed the outlook for key economic fundamentals (eg housing, employment);
- described local social governance, infrastructure, and institutions;
- considered the likelihood, scale, and distributive equity of potential social impacts of the Project, both positive and negative, including the potential for cumulative impacts;
- considered the benefits of the Project for the region and State; and
- provided management and monitoring recommendations, where required.

1.5 Assessment guidelines and requirements

This SIA report has been prepared in accordance with relevant government assessment requirements, guidelines and policies; in particular, the methods outlined in the SIA Guideline (DPE 2017) and the SEARs for the Project, issued on 3 April 2020. Further, to inform preparation of the SEARs, the DPIE invited relevant government agencies to advise on matters to be addressed in the EIS. These matters were considered by the Secretary for the DPIE when preparing the SEARs.

The individual SEARs relevant to this SIA and where they are addressed in this report are provided in Table 1.1.

Table 1.1 Summary of SEARs for social impacts

SEARs	Report section
Social	
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 *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development*, paying particular consideration to:	Section 4, 5, 6, 7 Appendix B
- how the development might affect people's way of life, community, access to and use of infrastructure, services and facilities, culture, health and wellbeing, surroundings, personal and property rights, decision-making systems, and fears and aspirations;	Sections 4, 5, 6, 7.1 - 7.6 and Appendix B
- the principles in Section 1.3 of the guideline; and	Sections 3, 5, 6, 7, 8 and Appendices A and B
- the review questions in Appendix D of the guideline.	Section 1, 3, 5, 6, 7, 8 and Appendices A and B

2 Project description

The Project involves continued operation of the quarry and the development of two new resource areas to the south and west of the existing quarry boundary.

2.1 Construction

2.1.1 Main activities

As the Project involves an existing operation there are limited construction activities involved. The following Project elements will be constructed within the first two years of operations:

- proposed access road and truck tarping area;
- southern haul road and Eulomogo Creek crossing; and
- modification and additions to the existing water management infrastructure.

Construction of a new intersection on Sheraton Road was approved under Development Consent D2017-640. Approval for the realigning of existing utilities (power and telecommunications) will be sought under a separate approval under Part 5 of the EP&A Act.

2.1.2 Traffic movements

Construction vehicle movements will comprise construction workers' light vehicles and heavy vehicles transporting equipment, building and construction materials, waste, and fill material, if required. Construction of the new internal access and haul road will be completed using standard road building equipment, including excavators, loaders, graders, and dump trucks. The Eulomogo Creek crossing will be constructed using similar equipment in addition to concrete trucks, cranes and piling equipment.

The construction of the Eulomogo Creek crossing would require an average of 20 trucks per month for construction deliveries (of pre-mixed concrete and pre-cast concrete. These construction traffic numbers are very low in comparison to the daily quarry operational traffic. It is not expected that the traffic impacts generated from the construction-related vehicles would be significant when compared to the quarry operational traffic.

2.1.3 Timeframes and hours of construction

A new private access road off Sheraton Road along the northern boundary of the WEA would be constructed in the first two years of the Project, prior to the existing access road being quarried through. The estimated total time for access road construction is 3–4 weeks.

A new haul road from the existing quarry area to the SEA across Eulomogo Creek with a watercourse crossing would be constructed in the first two years of the Project for a period of 1–2 months.

Modification/installation of water management infrastructure within the existing and extension areas would be undertaken in the first two years of the Project using existing workforce and equipment.

Construction of the proposed access road and Eulomogo Creek crossing will occur within standard construction hours:

- 7 am – 6 pm Monday to Friday;

- 8 am – 1 pm Saturdays; and
- no construction on Sundays or public holidays unless approval is provided by the Secretary.

2.1.4 Workforce

Additional contractors would be required during construction of the Eulomogo Creek crossing (up to 6 persons) and the proposed access road (up to 9 persons) in addition to the existing workforce of the quarry.

2.2 Operations

2.2.1 General

The Project involves operations of a rate of up to 500,000 tpa for extraction, processing, and storage of extractive materials. This is consistent with the quarry's EPL and the capacity of existing processing infrastructure. The quarry's actual production rate will be dependent on future market forecasts and demand for quarry products. The type of resource proposed to be extracted under the Project is basalt, an igneous hard rock. Two types of basalt resources would be extracted: fresh basalt and altered basalt.

Extraction of small amounts of altered basalt (approximately 10,000 tpa) would be extracted from the existing quarry pit until available resources are exhausted (approximately year 15).

Extraction within the WEA would commence on receipt of development consent (year 1). The extraction of available fresh basalt resource within this area is estimated to be completed within approximately 10 years, dependant on future quarrying and processing rates. Following this, small amounts of altered basalt (approximately 10,000 tpa) would continue to be extracted from this area until the end of quarry life.

Extraction within the SEA would commence in year 3 with approximately 100,000 tpa of resource to be extracted whilst extraction of fresh basalt is also occurring within the WEA. Once the fresh basalt has been extracted from the WEA, the extraction rate within the SEA would increase up to a maximum of 500,000 tpa (minus the extraction of altered basalt from the WEA and/or existing quarry pit).

Existing processing and ancillary infrastructure, and administrative facilities are proposed to remain unchanged under the Project.

2.2.2 Traffic movements

Operational vehicle movements will comprise light vehicles (worker's vehicles and service vehicles) and quarry truck movements. The existing and proposed operational quarry truck traffic movements on a peak production day (worst case) are provided in Table 2.1.

Table 2.1 Daily traffic generation for peak production

Quantity	Existing (350,000 tpa)	Future maximum (500,000 tpa)
Peak daily production (tonnes)	2,200	4,000
Truck load capacity (tonnes)	33	33
Peak daily truck loads (vehicles)	66	121
Peak daily truck loads (movements)	132	242
Peak hourly truck loads (AM peak hour)	8	20

Table 2.1 Daily traffic generation for peak production

Quantity	Existing (350,000 tpa)	Future maximum (500,000 tpa)
Peak hourly truck loads (PM School peak hour)	10	20
Peak hourly truck loads (PM peak hour)	10	20
Peak hourly truck movements (AM peak hour)	16	40
Peak hourly truck movements (PM School peak hour)	20	40
Peak hourly truck movements (PM peak hour)	20	40

Source: Based on information provided by Holcim

2.2.3 Workforce

The quarry currently employs 12 full-time employees, 25 contractor truck drivers, 28 regular and 10 irregular contractors. The Project will utilise the existing quarry workforce during operations.

2.2.4 Timeframes and hours of operation

The quarrying of the WEA and SEA will extend extractive activities by up to 25 years. Following Project approval, quarrying would commence in the WEA with all fresh basalt resources extracted within approximately 9 years. Quarrying in the SEA would commence two years after Project approval for approximately 20–23 years.

There is no restriction on operating hours in the quarry's current approval. Under the Project, hours of operation would be formalised to:

- 5 am – 6 pm Monday to Saturday for general operations (two shifts);
- 7 am – 6 pm Monday to Saturday for production (processing and extraction);
- 4 am – 6 pm Monday to Saturday for transport (Sundays or public holidays for emergencies); and
- maintenance activities 24 hours/day, 7 days per week.

Blasting would be undertaken no more than once per week between 9 am and 5 pm, Monday to Friday.

2.3 Decommissioning

Progressive rehabilitation will be undertaken concurrently with extraction of the WEA and SEA where possible. A rehabilitation strategy has been completed for the Project, which is provided in full in Appendix K of the EIS. A rehabilitation management plan will be prepared for the quarry should the Project be approved. The future land use for the site will be identified prior to quarry closure and will be agreed with the landowner, consistent with the appropriate land zoning and strategic planning context.

Once extraction has been completed in a pit, or part of a pit will no longer be used, the pit walls will be recontoured via blasting and dozing to have an overall gradient of approximately 1(v):3(h) or 33° consistent with rehabilitation undertaken to date on the south-western wall of the west pit.

The SEA pit floor will be re-shaped so that it is free draining to Eulomogo Creek. The floor of the West pit generally drains to Pond 1 at the eastern end of the pit. The floor of the WEA will be shaped so that it free drains to Pond 1. Subsoil and topsoil will be respread on the pit floors at sufficient depth to re-establish the pre-quarrying Land and Soil Capability (LSC) class. If there is a soil deficit, soil or other suitable materials with applicable waste exemptions will be imported for this purpose. Soils in the floor of the pits will be contour scarified, ameliorated if required, and seeded with pasture species.

Following completion of the Project, site infrastructure will be dismantled and recycled where possible or disposed of at an appropriately licensed waste facility. Equipment will be removed from the existing site and recycled where possible or disposed of at an appropriately licenced waste recycling facility.

Once quarrying has ceased a contamination assessment will be undertaken in the quarry pits and infrastructure areas and any contaminated materials either bioremediated on site or taken to an appropriate disposal facility.

3 Methodology

The scope of this SIA has been developed in accordance with the:

- Secretary's Environmental Assessment Requirements (SEARs);
- social characteristics and community values of the Dubbo Regional Council area; and
- *Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development, September* (SIA Guideline) *2017*.

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 Social impact assessment scope

The scope of this SIA has been developed in accordance with:

- SEARs issued by the DPIE on 3 April 2020. The SEARS states:

  Social: including 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 Social impact assessment guideline for State significant mining, petroleum production and extractive industry development, paying particular consideration to:

  a) how the development might affect people's way of life, community, access to and use of infrastructure, services and facilities, culture, health and wellbeing, surroundings, personal and property rights, decision-making systems, and fears and aspirations;

b) the principles in Section 1.3 of the guideline; and

c) the review questions in Appendix D of the guideline;

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

3.2 Area of social influence

This SIA addresses the social impacts and benefits of the Project to the local are, regional area, and to the State. It considers whether the Project increases the demand for community infrastructure and services.

This area of social influence has been determined in accordance with the SIA Guideline (DPE 2017) and considered the following in its identification:

- the scale and nature of the Project, its associated activities (including ancillary infrastructure), potential direct impacts, potential indirect impacts that may extend from the Project site (for example, transport and logistics corridors, downstream water users) and potential cumulative impacts;
- who may be affected by the Project, how they are expected to be affected, and their relevant interests, values and aspirations;
- any potentially affected 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, including key social infrastructure, facilities and amenities;
- any relevant social trends or social change processes being experienced by communities near the Project site and within the surrounding region, for example, trends in availability of rented accommodation, changes to relative employment in different industries, changing land uses over time, population and demographic changes; and
- the history of the Project and how communities near the Project site and within the surrounding region have experienced the Project and others like it to date.

Refer to Section 5.1 for determination of the area of social influence for the Project.

3.3 Potentially affected communities

This section describes potentially affected communities in the local study area, and the regional area, which may be impacted, negatively or positively, by the Project.

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

- proximity of properties and communities to the Project and its access routes;
- vulnerabilities that increase risk, and/or magnitude of potential impacts on communities or groups;
- 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 Project;
- communities and vulnerable groups potentially affected by other projects within the region; and
- likelihood of social impacts and opportunities for each town.

3.4 Methodological approach

The methodology used for this SIA follows the SIA Guideline (DPE 2017). The phases of the SIA methodology are described in Figure 3.1.

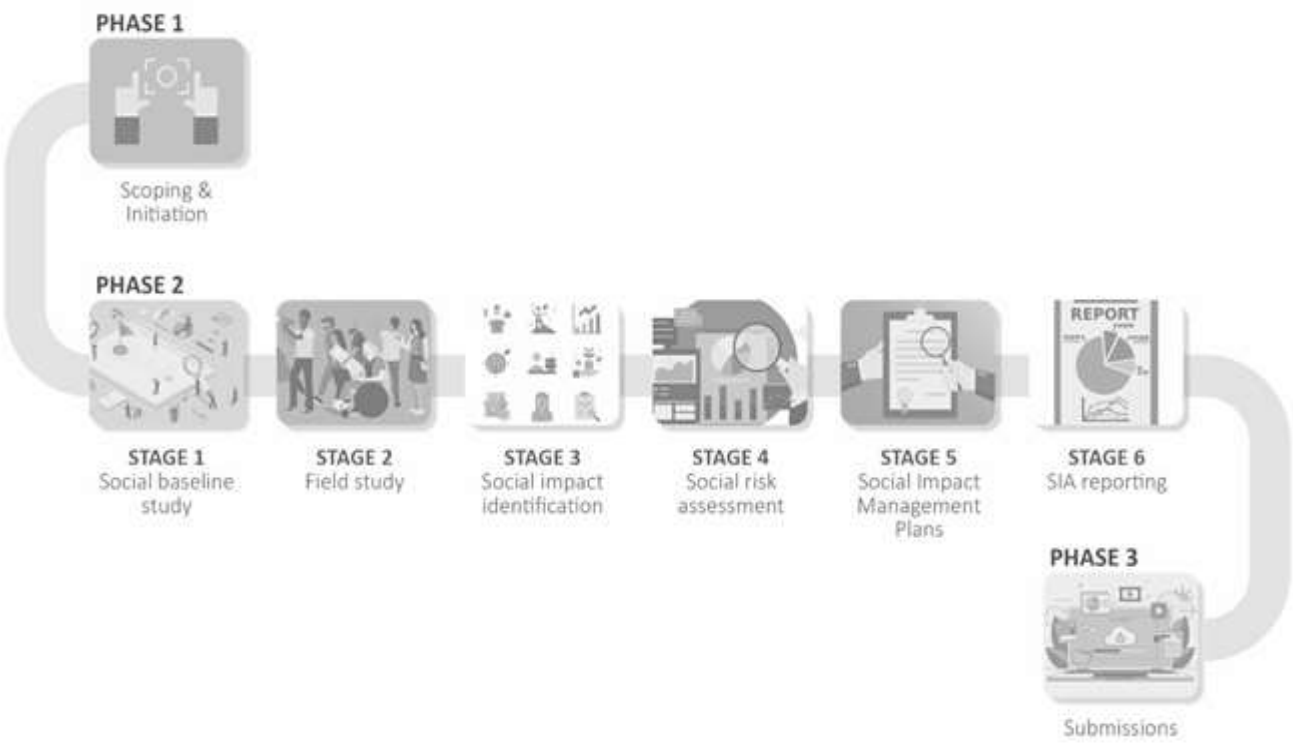


Figure 3.1 Phases of the SIA methodology

3.4.1 Phase 1

Scoping and initiation

A scoping report for the Project was prepared by EMM on behalf of Holcim and submitted to DPIE on 19 December 2019. The scoping report was informed by stakeholder engagement meetings and workshops undertaken by Holcim and EMM.

The SIA Guideline (DPE 2017) requires that the applicant identify and understand the Project's area of social influence. The area of social influence was identified during the scoping phase and proposed in the scoping report submitted to DPIE.

3.4.2 Phase 2

i Stage 1 – Social baseline study

The first step in the preparation of the SIA was to understand the existing social environment and identifying trends that are relevant to the potential social impacts. The social baseline study:

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

EMM conducted a baseline study to provide a benchmark against which the Project's potential social impacts can be identified and assessed. This informed subsequent stages.

ii Stage 2 – Field study

During the field studies, community engagement and consultation takes place. Community consultation and engagement was undertaken with consideration of social distancing requirements due to the COVID-19 pandemic. The methods and outcomes of the community engagement and SIA field study are presented Section 6.

Key engagement objectives set out in the SIA Guideline 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" (DPE 2017, p.12).

Community consultation used social research methods to collect qualitative and quantitative data to:

- validate baseline data and assumptions;
- identify potential impacts and assess impacts identified by nearby neighbours and the broader community;
- confirm identified impacts and evaluate potential management strategies; and
- provide communities with opportunities to express their concerns.

Holcim will continue to maintain opportunities for members of the community to comment on the Project as it navigates the approvals process, including through existing Project grievance mechanisms, opportunities to comment during the exhibition of the EIS, and ongoing Project Community Consultative Committee meetings.

iii Stage 3 – Social impact identification

With a clear understanding of the scope of the Project, the social baseline and the input from the field study, expert social scientists identified the potential social impacts resulting from the Project. This analysis informed the socioeconomic risk assessment (Stage 4).

The identification of potential social impacts and benefits from the Project was completed through several different complementary approaches. These helped to triangulate findings and provide a degree of confidence on their accuracy. The approaches used include:

- consideration of environmental constraints – review of previously identified environmental impacts created by the Project and other similar projects in the local area as well as available literature to identify potential impacts;
- consideration of field findings – findings from field studies contributed to the identification of potential impacts and benefits from the Project. Field studies were also be used to identify opportunities;
- consideration of existing socioeconomic conditions in the local area, as informed by the conducted social baseline study; and
- review of conducted technical assessments for the Project.

iv 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 Project and post closure. A social risk approach was be adopted to assess the consequence and likelihood of potential positive and negative social impacts with and without mitigation. The social risk assessment matrix used for the assessment can be found in Appendix A.

v Stage 5 – Social impact mitigation and management

A mitigation and management framework was prepared for all potential social impacts and proposed enhancement strategies to allow for the identification of:

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

This stage used a multidisciplinary approach lead by social scientists and supported by technical experts.

vi Stage 6 – SIA reporting

Development of this SIA technical report. Findings from Stages 1–5 were used to distil and analyse recommendations for the SIA report.

4 Political and planning context

This section provides a summary of the relevant plans and strategies across the Dubbo Regional Council area that informed the social risk assessment and mitigation and management strategies.

4.1 Federal

At a federal level, the Project area is located within the federal electorate of Parkes, which is currently represented (in the House of Representatives) by the Hon Mark Coulton MP, member of the National Party of Australia. There are 12 representatives from NSW in the senate. Notable NSW senators include the Minister for Foreign Affairs and Minister for Women, Senator the Hon Marise Payne of the Liberal Party of Australia, and the Chair of Standing Committee for the Scrutiny of Delegated Legislation, Senator the Hon Concetta Fierravanti-Wells of the Liberal Party of Australia.

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 federal legislative or regulatory instruments that directly impact on the SIA for the Project; however, the release of the *Keep it in the regions report* (Parliament of Australia 2018) in November 2018 is relevant. The report recommends several measures aimed at increasing the potential for local communities to benefit economically from resourcing projects located 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 New South Wales Parliament consists of a Legislative Assembly (lower house) and Legislative Council (upper house).

At a state level, the Project area sits within the New South Wales state electorate of Dubbo. The current member for Dubbo is Dugald Saunders MP of the National Party of Australia.

There are a number of State Acts and Regulations which concern the recognition, protection and conservation of cultural heritage sites and protected areas. Such acts are 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 and regional 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 sections include:

- a snapshot of Regional NSW today that presents the current economic and demographic environment, with particular mention of the thriving agricultural, energy and resources industries, and strong manufacturing, tourism, and services sectors;
- the global forces shaping regional economies, and the implications of these trends;
- means of rising 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 State Infrastructure Strategy 2018, Infrastructure NSW, 2018–2038

This 20-year Strategy sets out Infrastructure NSW's independent advice on the current state of NSW's infrastructure and the needs and priorities over the next 20 years (NSW Government 2018b). It looks beyond the current projects and identifies policies and strategies needed to provide infrastructure that meets the needs of a growing population and a growing economy.

The Strategy is comprised of three sections. These include:

- strategic directions: six cross-sectoral strategic directions are incorporated into the strategy to ensure good-practice throughout 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, and culture, sport and tourism).

iii The Central West and Orana Regional Plan 2036

The Central West and Orana Regional Plan 2036 (the Regional Plan) was released by DPE in 2017 to guide land use planning priorities and decision making in the Central West and Orana Region for the next two decades. The region covered by the plan comprises the Cabonne, Orange, Blayney, Bathurst Regional, Lithgow, Oberon, Lachlan, Parkes, Forbes, Weddin and Cowra LGAs (Central West), and the Bogan, Warren, Coonamble, Gilgandra, Narromine, Warrumbungle and Dubbo Regional Mid-Western Regional LGA's (Orana). 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 outcomes for the region as outlined in the Regional Plan are:

1. the most diverse regional economy in NSW;
2. a stronger, healthier environment and diverse heritage;
3. quality freight, transport and infrastructure networks; and
4. dynamic, vibrant and healthy communities.

The Project, therefore, aligns with a number of directions and actions set out in the plan, which directly and indirectly support the achievement of these four goals. The Project is consistent with Goal 1, as it will ensure the continued contribution of quarrying to the diversity of local economic development and employment in Dubbo. It will continue to supply locally sourced and financially competitive quarry products required for current customers (refer Section 7.7.1 as well as forecast growth and economic and industrial development across the region. The Regional Plan also sets a number of 'directions' for each goal. The Project is consistent with Direction 10 of the Regional Plan which is to 'promote business and industrial activities in employment lands'. The Project will ensure the continued long-term use of the existing site as a quarry, being an industrial land use. The Project will also ensure the continued employment of the existing workforce in addition to local contractors required for maintenance and construction activities.

In accordance with Division 13, this EIS considers the potential impacts of the Project to ensure appropriate mitigation measures can be implemented to protect surrounding environmental values through the prevention or minimisation of such impacts (refer Sections 6.2 to 6.16). The footprint of the WEA and SEA have been progressively refined through initial phases of the Project and as the result of technical environmental studies completed to avoid impacts to surrounding native vegetation and Eulomogo Creek.

4.3 Local

The Project area is located in the Dubbo Regional Council 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 Councillors, 2020

Role	Councillors	
Mayor	Cr Ben Shields	
Deputy Mayor	Cr Stephen Lawrence	
Councillors	Cr Jane Diffey	Cr Dayne Gumley
	Cr Vicki Etheridge	Cr Annemarie Jones Oam
	Cr David Grant	Cr Greg Mohr
	Cr Kevin Parker	Cr John Ryan

The local Council has a number of plans that articulate their vision for the future of the community. These are summarised in Table 4.2.

Table 4.2 Regional planning context

Plan/Strategy	Summary	Responsibility	Timeframe
Community Participation Plan 2019	The Community Participation Plan 2019 encourages active communication between Council and the community through engagement and participation in planning processes. The plan was established to provide better outcomes for residents, businesses, industry, and the community by ensuring transparency and clarity related to planning and development projects. The plan aims to: • inform the community about planning processes; • provide meaningful opportunities for the community to participate in planning processes; • establish early consultation with members of the community regarding major developments and their impacts prior to application for planning approval of the developments; and • ensure effective processes of engagement between Council and the community.	Dubbo Regional Council	Adopted 2019
The 2040 Dubbo Community Strategic Plan (Community Strategic Plan)	The Community Strategic Plan states the overall visions and future aspirations of Dubbo. The visions outlined focus on establishing strong community ties, improving liveability and housing affordability whilst promoting opportunities for tourism, education and training, recreation, Indigenous heritage, and the natural environment. Additionally, the Community Strategic Plan focuses on transitioning Dubbo into the 'big city in the bush' as well as a transport and freight hub. The plan is focused around increasing the general population, developing infrastructure to support the local community, ensuring economic growth, and enhancing employment opportunities whilst supporting local industries. Themes areas are outlined in the plan and consists of various strategic outcomes to be fulfilled by 2040. The themes are as follows: • housing; • infrastructure; • economy; • community leadership; and • liveability. The Delivery Program and Operational Plan provide the actions that will be taken and necessary means to achieve the outcomes identified in the 2040 Community Strategic Plan. Progress will be continually reviewed by the Dubbo Regional Council through public reporting to guarantee progress towards the strategic outcomes.	Dubbo Regional Council	2018–2040
Delivery Program and Operational Plan 2019/2020	The Delivery Program and Operational Plan explores the actions to be taken to achieve the strategic outcomes identified in the 2040 Community Strategic Plan. The Delivery Program comprises a timeframe of 3 years, while the Operational Plan presents an annual plan. The contents of the delivery program and operational plan are organised according to 5 themes: 1. housing; 2. infrastructure; 3. economy; 4. community leadership; and 5. liveability. Each theme consists of numerous strategies with a set of specific actions to be taken to ensure their realisation.	Dubbo Regional Council	Delivery Program: 2018–2021 Operational Plan: 2020 - 2021

Table 4.2 Regional planning context

Plan/Strategy	Summary	Responsibility	Timeframe
Interim Asset Management Strategy and Asset Management Plans	The Interim Asset Management Strategy presents the Dubbo Regional Council's plan to ensure effective management and maintenance of existing community infrastructure and physical assets throughout the life of the Community Strategic Plan and manage the provision of new assets. This strategy endeavours to create further opportunity for community and stakeholder engagement in the identification of how Dubbo Regional Council should manage assets. This strategy informs the development of Asset Management Plans for specific Dubbo Regional Council assets, including: • transport, • water supply, • sewerage services, • stormwater drainage, • parks and Landcare, and • buildings.	Dubbo Regional Council	Various timeframes.
Contaminated Land Policy and Contaminated Land Management Plan	Together, the Contaminated Land Policy and Contaminated Land Management Plan provide an approach to the investigation and remediation of land contamination in relation to the making of planning decisions, maintaining up-to-date information and monitoring of remediation. This policy and plan determine how information is managed, set standards for consultation of contaminated land, and define when a Site Audit is necessary. Industry, including mining and extractive industries, are identified as a potentially contaminating land use, including mineral or ore processing. Other land uses with the potential to contaminate land identified under this policy and plan that may be involved in the Project are various transport-related activities, chemical use, and fuel use.	Western Plains Regional Council	Adopted 2016
Dubbo Mining Areas Land Use Strategy 2015	The Dubbo Mining Areas Land Use Strategy 2015 envisions support and management of mining and related activity to maximise growth, minimise negative impacts, particularly on scarce water resources, and enable balance with other land uses. This strategy identifies mining and extractive industries as a key driver for economic growth in the region and supports the development of Dubbo as a major mining service centre in an effort to contribute to the development of the industry within the wider Orana region and across Western NSW. Specific strategies within the mining areas strategic framework that relate to the Project include: • maintain and enhance agricultural productivity while supporting the development of a sustainable mining/extractive industry; • meet the housing needs of the Dubbo community; • maintain and enhance Dubbo's natural environment whilst enabling opportunities for sustainable resource extraction; • meet expanding infrastructure requirements; • maintain and enhance the social health and wellbeing of the Dubbo community amidst population increases; and • provide adequate land and support for commercial and industrial developments associated with the impacts of resource extraction.	Dubbo Regional Council	Adopted 2015

Table 4.2 Regional planning context

Plan/Strategy	Summary	Responsibility	Timeframe
Dubbo Development Control Plan (Dubbo DCP 2013)	The Dubbo DCP 2013 was designed in conjunction with the Dubbo LEP 2011. The plan outlines various development principles and guidelines for development application processes in order to manage developments and ensure the conservation of land. The objectives outline In the Dubbo DCP 2013 are as follows: • promote good quality and environmentally sustainable developments; • provide guidance to prospective proponents and the community of Council's requirements; • provide criteria to the Council in assessing applications; and • provide development controls and requirements that are easily understood by the community and proponents. The development considerations addressed in this plan that pertain to the Project are: • access and mobility; • economic impact; • social impact; • heritage conservation; and • environmental management.	Dubbo Regional Council	Adopted 2013
Dubbo Local Environmental Plan (Dubbo LEP 2011)	The Dubbo LEP 2011 is a statutory document which provides a guide for land use planning and development within Dubbo. The Dubbo LEP 2011 consists of strategies that focus on how certain areas should look over time. The strategies are designed to provide greater detail of land use planning and development projects to ensure certainty regarding the projects and encourage community-based consultation. Areas concerned in the Dubbo LEP 2011 are rural, residential, commercial, industrial, special use, open space, and environmental zones. Aims of this plan include (but are not limited to): • maintaining the Dubbo central business district as the primary commercial centre for the greater region; • the protection of environmental and cultural heritage; and • protect land zoned for industrial purposes from inappropriate development.	Dubbo Regional Council	Adopted 2011

Source: DRC 2013, *Dubbo Development Control Plan (DCP) 2013*; DRC 2019, *Community Participation Plan 2019*; *Dubbo Local Environmental Plan 2011*; DRC 2018, *Community Strategic Plan*; DRC 2020a, *Delivery Program and Operational Plan 2020/2021*

5 Social baseline

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

5.1 Area of social influence

The Project's area of social influence has been determined in accordance with the SIA Guideline (DPE 2017) as detailed in Section 3.1.

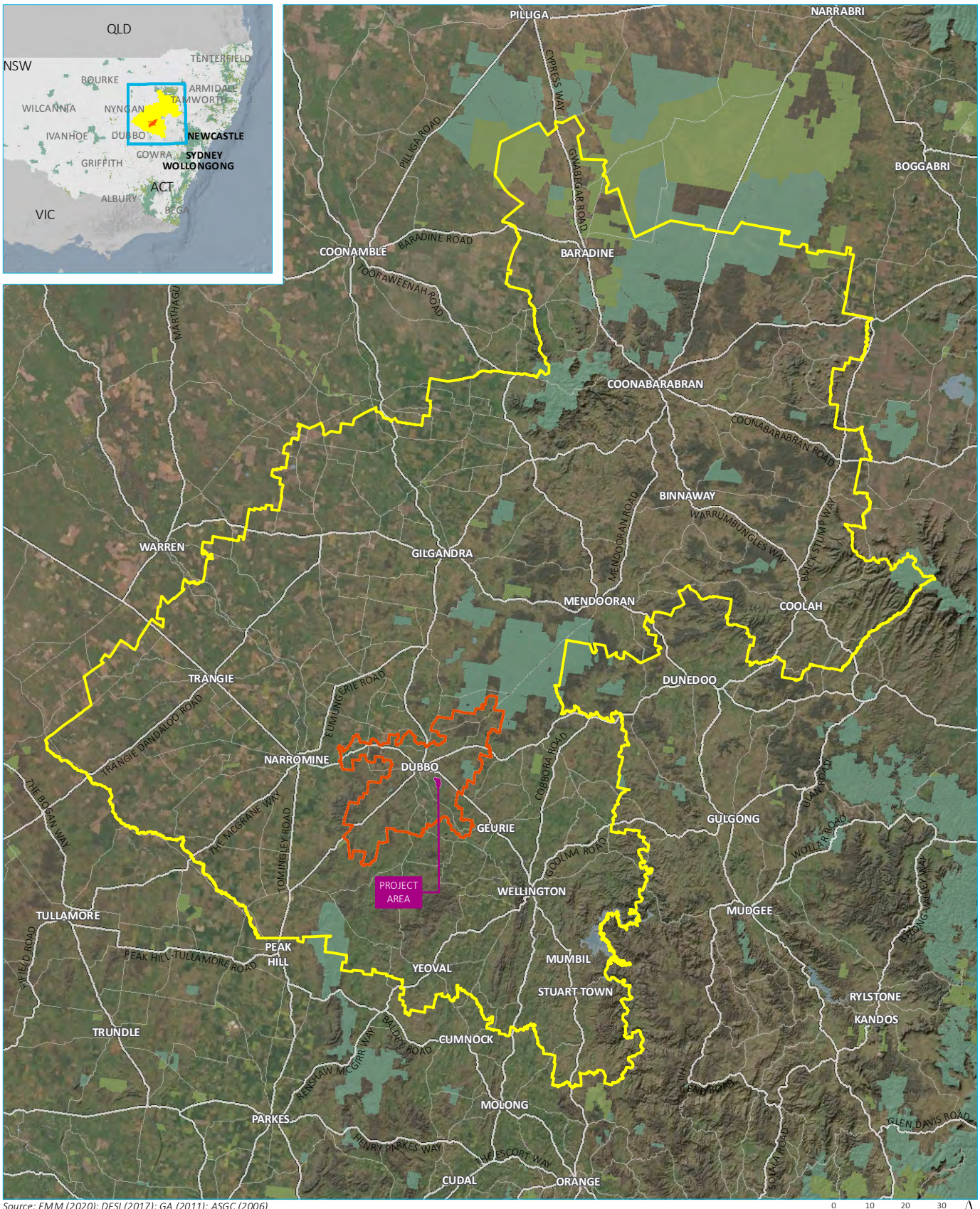
The Project area is located within the suburb of Dubbo and, therefore, its community makes up the local area of social influence for the Project.

The Project is likely to have a broader reach due to supply chains, haulage routes, transportation of goods, materials and equipment, and the movement of its workforce, some of which may have drive-in-drive-out and/or fly-in-fly-out arrangements (DPE 2017. These factors require the area of social influence to include regional areas likely to be impacted by the Project which will extend to the Dubbo region. This region forms the regional area of social influence. [1]Dubbo is a small rural town located inland West of Newcastle on the central NSW east coast. The local area's population experienced 37.6% growth between 2006–2016 (from 28,302 to 38,943 residents); much higher growth than the regional area (5.5%) and NSW (14.2%) (ABS 2016a). These communities have been mapped to the Australian Bureau of Statistics (ABS) categories used for data collection (Table 5.1). The local and regional area of social influence (hereto referred to as local area or regional area), are illustrated in Figure 5.1 and Figure 5.2.

Table 5.1 Area of social influence

Area of social influence	Geographic area	ABS data category	Referred to in report as:
Local area of social influence	Dubbo suburb	Dubbo State Suburb (SSC)	Local area
Regional area of social influence	Dubbo region	Dubbo SA3	Regional area
State of New South Wales	State of New South Wales	New South Wales STE	NSW

[1] Data used to inform the social baseline is not available at all ABS-defined geographical boundaries. As such, data for indicators used within the social baseline study uses the data available at the LGA level where required.



Source: EMM (2020); DFSI (2017); GA (2011); ASGC (2006)

0 10 20 30 km

GDA 1994 MGA Zone 55

N

KEY

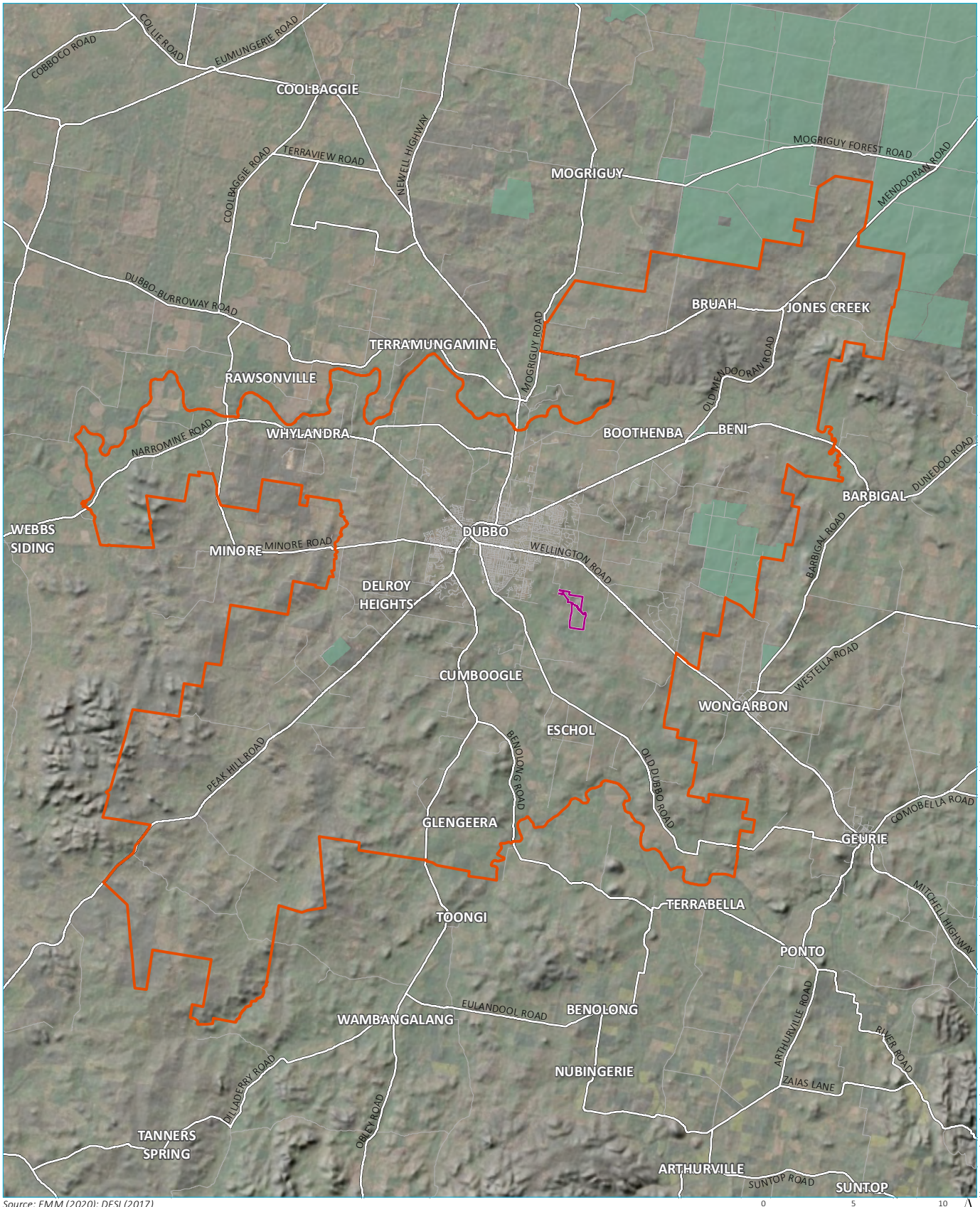
- Regional area of social influence
- Local area of social influence
- Project area
- Major road
- Minor road
- Named waterbody
- NPWS reserve
- State forest

Area of social influence

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 5.1

EMM creating opportunities

\\Emmsvr1\emm\Jobs\2018\J180313 - Dubbo Quarry EIS\GIS\02_Maps_EIS_TechReports\SIA\SIA004_AreaOfSocialInfluence_20200810_03.mxd 15/01/2021



\\Emmsvr1\emm\Jobs\2018\J180313 - Dubbo Quarry EIS\GIS\02_Maps_EIS_TechReports\SIA\SIA005_LocalAreaOfSocialInfluence_20200810_03.mxd 15/01/2021

Source: EMM (2020); DFSI (2017)

0 5 10 km

GDA 1994 MGA Zone 55

N

KEY

- Local area of social influence
- Project area
- Major road
- Minor road
- NPWS reserve

Local area

Dubbo Quarry Continuation Project
Social Impact Assessment
Figure 5.2

EMM creating opportunities

5.2 Access

Access to the local area is primarily via B84, Golden Highway, running from Newcastle in the east through Merriwa, Jerrys Plains, and Mount Thorley. Route A32, Mitchell Highway, connects the local area to Adelaide to the west, moving through Cobar and Broken Hill in NSW, and Burra in South Australia. Route A39, the Newell Highway runs through the local area, connecting it to Toowoomba in Queensland to the north east and Melbourne to the south west.

5.3 Qualifications and workforce

Employment in the local area is higher than the regional area or NSW with only 5.5% unemployment compared to 6.2% and 6.3%, respectively. The main occupations in the area are labourers (18.2%), managers (18.2%), and professionals (14.5%) (ABS 2016a) (see Section B.6 in Appendix B).

Labourers and managers are amongst the top occupations within the local area (both 18.2% of the working population) (ABS 2016a). Labourers generally do not require post-school qualifications to work in the occupation, with 61.0% of labourers within Australia not holding any post-school qualifications (DJSB 2020). However, 24.0% of labourers across Australia do hold a Certificate III or higher VET qualification. In the local area, a certificate qualification is the top qualification in the local area amongst persons with a non-school qualification (41.4%) (ABS 2016a).

The largest share of managers is employed in the retail industry, with other major industries including agriculture, forestry and fishing, accommodation and food services, and manufacturing. The proportion of managers in the local area reflects the major industries of employment in the local and regional area, which includes retail and agricultural industries (DJSB 2020). These trends extend to the regional area where 16.5% of workers are labourers, 16.5% are managers, and 40.5% of persons with a non-school qualification hold a certificate qualification (ABS 2016a).

Table 5.2 Occupations, 2016

Occupation	Local area	Regional area	NSW
Managers	18.2%	16.5%	13.5%
Professionals	14.5%	13.7%	23.6%
Technicians and trades workers	12.5%	12.3%	12.7%
Community and personal service workers	13.5%	11.9%	10.4%
Clerical and administrative workers	11.3%	9.7%	13.8%
Sales workers	6.0%	6.5%	9.2%
Machinery operators and drivers	10.9%	11.5%	6.1%
Labourers	18.2%	16.5%	8.8%

The main industries of employment in the local area are health care and social assistance (15.7%), retail trade (11.4%), and education and training (9.4%) (ABS 2016a). As the local area is a regional centre that services the wider western NSW and Far West NSW regions, the higher proportion of persons working in healthcare and social services reflects the greater concentration of community and health services available in the local area. The local area individual weekly income is slightly higher than the NSW average ($691 and $664, respectively) which may be indicative of the higher proportion of managers and professionals in the area (ABS 2016a).

5.4 Disadvantage

Rates of disadvantaged populations in the local area of social influence are fairly consistent with the regional area and NSW. There are a small number of people who require assistance due to a profound or severe disability. This group requires support with a range of activities related to self-care, mobility, and communication. In the local area, 15.9% population is aged 65 years or over (ABS 2016a). Research into the health of the ageing population indicates that ageing will continue to increase demand for health services and place pressure on health care resources (Harris & Sharma 2018). Although the rate of homelessness in the regional area is 30.1 per 10,000 persons, lower than the NSW rate of 50.4 per 100,00, this still indicates the presence of a homeless population within the region (ABS 2016b).

5.5 Local and regional industry and economy

In 2018, there were 5,127 registered businesses in the regional area, none of which employed more than 200 employees. Of these registered businesses, 98.4% were classed as small businesses employing fewer than 20 people or non-employing. Small businesses employing fewer than 20 people or non-employing accounted for 97.5%. Additionally, 7.0% of businesses turned over $2 million or more, with most businesses operating within the $200k to $2m range (ABS 2019). Of the 5,127 registered businesses in the regional area, the main registered businesses by industry in the local area are agriculture, forestry, and fishing (23.1%), construction (17.7%), rental, hiring, and real estate (8.4%), and professional, scientific, and technical services (6.2%).

5.6 Social infrastructure and services

Dubbo is one of four regional centres in the Western NSW Primary Health Network (PHN) as well as being the service centre for much of the western and far west NSW. The local area is well serviced by a range of schools, childcare and health services, including three hospitals and several specialist services (Healthdirect Australia 2020; ACARA 2020; ACECQA 2020). The local area also provides the region with numerous 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 (Dubbo Regional Council 2020b; Healthdirect Australia 2020; Ask Izzy 2020; Western NSW LHD 2020) (see Table 5.3). As previously mentioned, health care and social assistance is one of the top three industries of employment in the local area, which is reflective of the wide range of services available in the area.

Table 5.3 Social infrastructure, services, and facilities in the local and regional area, 2020

	Local area	Regional area
Hospital services	✓	✓
GP services	✓	✓
Childcare services	✓	✓
Primary and secondary schools	✓	✓
Tertiary institutions	✓	✓
Emergency services	✓	✓
Aboriginal services	✓	✓
Child and family services	✓	✓
Youth services	✓	✓

Table 5.3 Social infrastructure, services, and facilities in the local and regional area, 2020

	Local area	Regional area
Housing and homelessness services	✓	✓
Employment services	✓	✓
Disability services	✓	✓
Aged care services	✓	✓
Domestic violence services	✓	✓

Source: Dubbo Regional Council 2020b; ACARA 2020; ACECQA 2020; AIHW 2020; Ask Izzy 2020, Healthdirect Australia 2020; Western NSW LHD 2020; police.nsw.gov.au; ambulance.nsw.gov.au; fire.nsw.gov.au; ses.nsw.gov.au

5.7 Housing and accommodation

The availability of rental housing in the local area is low with residential vacancy rates remaining well below the 3.0% benchmark for the past three years (SQM Research 2020). However, mortgage repayments and rent are less than NSW averages, whilst median weekly income is higher for individuals but lower for households (ABS 2016).

With tourism an increasingly important industry for the area (TRA 2020), there is abundant tourist accommodation available. There are 70 listed tourist accommodation providers plus 20 vacation rental options in the regional area (Google 2020). These accommodation options include hotels, motels, rental homes and apartments, bed and breakfasts, and caravan parks.

5.8 Recreation

The local area offers a wide range of parks facilities, natural areas, and sporting facilities. There are multiple botanic and city gardens throughout the local area which display diverse flora and provide green spaces for both residents and visitors to enjoy. There are also numerous nature reserves, lookouts, campgrounds and caravan parks within the local area.

The Taronga Western Plains Zoo includes a safari-style zoo circuit which visitors can explore via car, foot, bicycle, or cart. The zoo is home to hundreds of rare and endangered animals.

There are a variety of sporting facilities within the local area, including sporting fields and grounds, netball courts, a skate park, a cycle track, golf clubs, equestrian grounds, and an aquatic centre.

5.9 Health and well-being

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. However, trends were available for Western NSW Local Health District (LHD) which includes both the local and regional area. Although the data demonstrates similar overall trends for physical health in Western NSW LHD compared to NSW, the Western NSW LHD community experiences an overall lower level of physical health compared to NSW (see Section B.9 in Appendix B).

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), also 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 has a lower level of unemployment, and adequate provision of social infrastructure and social services, 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.

5.10 Community strengths and vulnerabilities

Table 5.4 provides summary of the key community strengths and vulnerabilities based on existing social conditions as identified by the community during the conducted SIA community workshops.

Table 5.4 Community strengths and vulnerabilities

Vulnerabilities	Themes	Strengths
Skills shortages, particularly related to technical occupations.		Low unemployment. Ample employment opportunities.
Although housing is presently viewed as affordable, housing costs are noticeably increasing.		Affordable cost of living currently, particularly affordable housing.
Reliance on external manufacturing industry.		Prevalent tourism industry – including natural attractions, events, and establishment, and recreation activities (including the Dubbo Taronga Zoo).
Ageing population.		Diversity in multiple facets, such as industry, people, and economy. Friendly and welcoming community.
Changing nature and character of the community – shifting from a “country feel” to a “city feel”.		Opportunities for youth in terms of education, employment, and recreation.
Public safety issues related to Sheraton Road and access to Sheraton Road, and non-compliance of speed limits. Reports of crime (such as theft) and associated public safety issues.		Healthy work/life balance apparent within the community. Supportive community.

Table 5.4 Community strengths and vulnerabilities

Vulnerabilities	Themes	Strengths
Growing homeless population is becoming more noticeable and is already vulnerable due to the low provision of social housing. Improvements could be made to sporting facilities.		Easy to get around, dubbed the “5-minute city”. Accessible geographical location – ability to access the local and regional area via road, rail, and air. Well-serviced in terms of health and social infrastructure, with medical services continuing to improve (as exemplified by the recent hospital upgrades).
Water security concerns deriving from climate change specifically around drought, bore water and town water availability		Abundant natural areas.

6 Community and stakeholder engagement

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

- as part of the EIS engagement; and
- as part of the data collection for the SIA.

The SIA Guideline (DPE 2017) integrates the above elements of the engagement program to reduce the risk of engagement fatigue for potentially affected communities.

6.1 EIS engagement

This section provides a summary of the EIS engagement activities conducted for the Project.

6.1.1 Community Consultative Committee

A Community Consultative Committee (CCC) was formed to provide an opportunity for Holcim, the local community, Dubbo Regional Council and other interested parties to have an open discussion about the Project and the current quarry including environmental performance and community relations. CCC members currently include representatives from:

- Holcim;
- Dubbo Christian School;
- Dubbo Catholic School; and
- Dubbo Regional Council.

The first CCC meeting was held on 2 November 2020. Traffic impacts due to the Project and traffic management was one of the topics of discussion during the CCC meeting and their concerns were aligned to those raised in the community workshops. Members of the CCC raised questions regarding the transport and access study, the impacts of traffic flows and the volume of traffic created by the Project, and the education of contractors driving on site.

The full range of topics of discussion raised by CCC members during the meeting included:

- impacts of traffic flows and the volume of traffic created by the Project;
- the education of contractors driving on site;
- proposed interactions with groundwater;
- concerns about a concrete batching plant (Holcim clarified that there is not a batching plant on site or in the proposal);
- management of vegetation fragmentation and land-use plans on the southern edge of the Project area; and

- water use and wastewater.

6.1.2 Community information sheet

A community information sheet (see Appendix C) was distributed to SIA community workshop participants (see Section 6.2.1i for more details about the community workshops) and via community Facebook groups within the Dubbo region. The community information sheet included information about:

- the scope and location of the Project;
- the planning assessment process;
- the SIA; and
- relevant contact information.

The scope of distribution of the community information sheet is summarised in Table 6.1.

Table 6.1 Community information sheet distribution

Distribution method	Distribution Scope	Distribution dates
Community workshop participants	11 workshop participants	22 July 2020
Dubbo Community Group Facebook group	3,100 group members	24 August 2020 7 September 2020 9 September 2020 17 September 2020 18 September 2020
Spread The Word in Dubbo & Wellington Facebook group	654 group members	4 September 2020 7 September 2020 9 September 2020 17 September 2020

6.2 SIA field study

This section provides a description of the SIA field study activities and findings. 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.

6.2.1 Participation

The methods of engagement with community and key stakeholders and details of participation are provided in Table 6.2.

Table 6.2 Participation by engagement event

Method	Administered	Invited	Participated
Community Workshop x 2	Face to face	23	11
Community Survey	Online	-	6

i Community workshop participation

Community workshops were held from 1:00 pm – 2:30 pm and 5:00 pm – 6:30 pm on 23 July 2020. The purpose of the workshops were to:

- inform the community about the Project;
- provide opportunities for the community to give feedback;
- gain insights into the existing values, strengths, and vulnerabilities of the local area; and
- identify potential impacts and benefits as a consequence of the Project.

Community workshop participants represented a range of stakeholder groups for the Project. Participants included:

- Project neighbours;
- local residents;
- local school representatives;
- real estate representatives;
- Dubbo Chamber of Commerce representatives;
- Dubbo Regional Council staff; and
- MAAS Group (the owners and operators of the neighbouring South Keswick Quarry and local residential developers) representatives.

ii Online survey participation

An on-line survey was administered to the public to be able to attain community input on any impacts concerning the Project. The survey included open ended, multiple choice, and rating-style questions which provided both qualitative and quantitative data. The survey was available for response from 29 July 2020 to 21 September 2020. There was also the opportunity for respondents to provide their contact details for any follow up information or consultation regarding the Project.

The survey was distributed via posts on community Facebook Groups and advertised in the classifieds section of the print and online editions of Dubbo's local newspaper – *The Daily Liberal*. The details of the survey distribution are presented in Table 6.3.

Table 6.3 On-line survey distribution

Distribution method	Distribution Scope	Distribution dates
Dubbo Community Group Facebook group	3,100 group members	24 August 2020 7 September 2020 9 September 2020 17 September 2020 18 September 2020
Spread The Word in Dubbo & Wellington Facebook group	654 group members	4 September 2020 7 September 2020 9 September 2020 17 September 2020
Advertisement in the print and online editions of the *Daily Liberal*	Readership of 9,000	12 September 2020 14 September 2020

The survey received six responses with 66.7% of participants identifying as male and 33.3% as female. Out of the six responses, 66.7% were residents of Dubbo and 33.3% were business owners. Due to the small sample size a spread of age was unable to be attained. However, 50% of respondents were aged between 35–44 years, 16.7% were aged between 25–34 and 33% were aged over 55 (see Table 6.4).

Table 6.4 Participant summary

	Stakeholder status	Identification	Age bracket	Postcode/ Suburb
Participant 1	Local resident	Female	65+	2830 Dubbo
Participant 2	Business owner	Male	35–44	2830 Dubbo
Participant 3	Local resident	Female	55–64	2830 Dubbo
Participant 4	Local resident	Male	25–34	2830 Dubbo
Participant 5	Local resident	Male	35–44	2830 Dubbo
Participant 6	Business owner	Male	35–44	2830 Dubbo

6.2.2 Community workshop findings

Stakeholders participating in the workshops identified potential impacts and benefits arising from their views on the Project, as well as the aspirations and values of the Dubbo community. Stakeholders who participated in the workshops expressed concerns over land, property, amenity, and future rehabilitation of the Project. There were shared concerns over the long-term impacts of the quarry, specifically related to the future subdivisions and amenities within the first years of the Project. Potential amenity issues relating to noise, dust, air, and vibration, associated with the Project were mentioned as potential impacts arising from the Project. Rehabilitation of the existing site and WEA was encouraged by workshop participants and of great importance to the stakeholders to ensure that future land uses are viable. A common theme mentioned within the workshops was the high liveability standards of Dubbo. Therefore, it is important for the stakeholders that liveability within Dubbo is sustained.

As the quarry is accessed via Sheraton Road and the Mitchell Highway concerns regarding road and traffic impacts were raised. Road safety is of high importance for the stakeholders. As a result, the need to enforce road speed limits and general road safety measures, specifically within school zones, was stressed. Workshop participants stated that the Project must ensure that truck speed limits are enforced, and that roads are maintained to a high quality (which is the responsibility of Dubbo Regional Council). Additionally, there were further concerns regarding trucks travelling through school zones during drop-off and pick-up times. Stakeholders highlighted water and water security to be a vulnerability within the town, specifically concerning surface water as well as the watering down and increasing salinity in Eulomogo Creek. The presence of Indigenous artefacts within the creek must also be taken into consideration.

Workshop participants identified the provision of ongoing employment related to the Project as a significant potential benefit. During discussion facilitated during the SIA workshops, there was an emphasis on continuation of employment within the local and regional area, as well as the need to provide additional employment opportunities. Survey respondents also indicated that the Project would provide benefits related to employment. Of the 5 responses related to impacts on employment, 2 survey participants rated the potential employment impacts related to the Project as positive, and 3 rated the potential impacts as very positive. Survey respondents expanded on the potential benefits related to employment, stating that "[the Project] will continue to keep people's jobs which is important" and "[the Project] supports creation of jobs longer term".

Workshop participants expressed that the Project would produce flow-on economic benefits within the local area, regional area, and wider region due to the production of a high-demand resources and associated contributions to infrastructure projects across NSW. An opportunity for potential procurement by local cement and metalworks operations was also identified as a potential opportunity for the Project to benefit the local area.

Overall, the findings demonstrate that the stakeholders are in support of the opportunities that arise from the Project if there are prospects for economic growth and ongoing employment. Stakeholders aspire for Dubbo to become self-sufficient, a 'leading in-land city' and remain as the 'hub of the west' and mentioned the need for procurement of local cement and metal works in order to support the local industry. Community values are inherent to the town; therefore, it is imperative that Holcim continues to engage in community consultation to support local values, sustain liveability and that ongoing benefits are safe for the town.

6.2.3 Online survey findings

Half of the survey respondents reported having previous communications with Holcim either as a customer, on behalf of their business, or as a council representative and contact for the quarry. Overall, awareness of the Project varied with 83.3% of participants having fair or good awareness of the Project and 33.3% having poor awareness. Majority of respondents indicated they were in support of the Project, with 66.7% in support, 16.7% indicating neutral and 16.7% in opposition (see Figure 6.1).

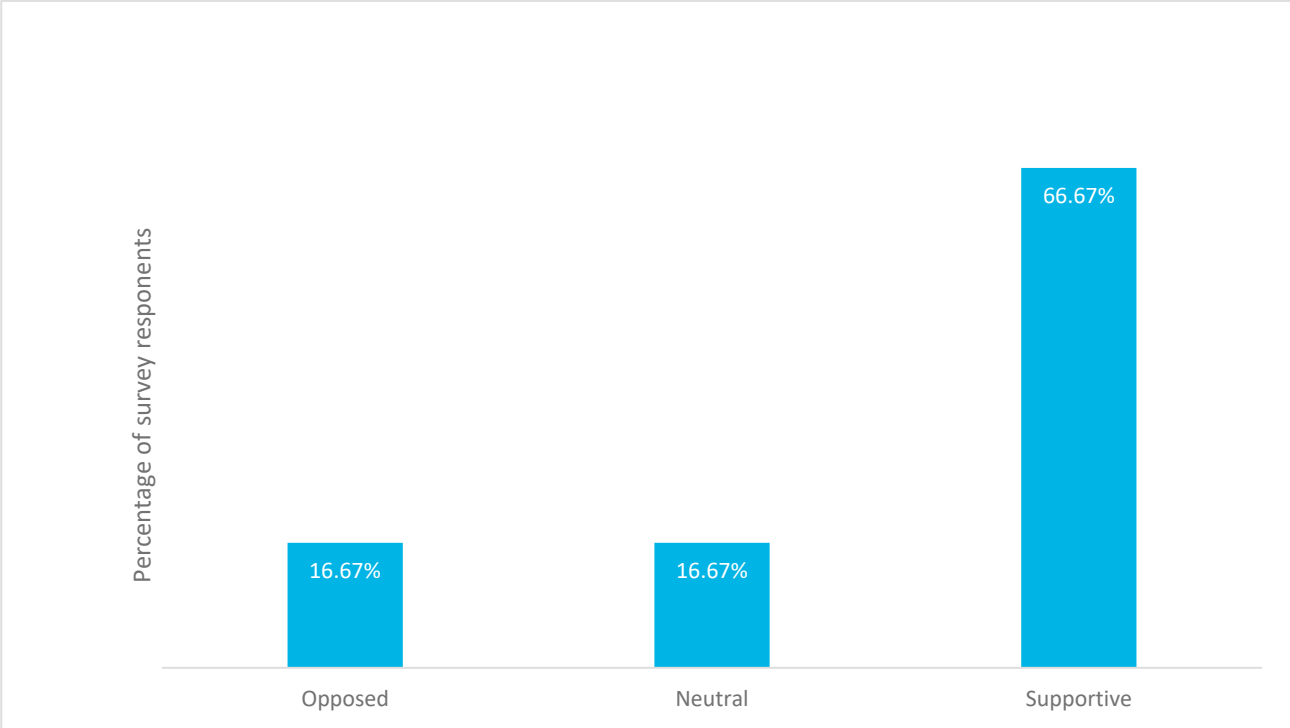


Figure 6.1 Support for the Project

The local businesses that participated in the survey were in strong support of the Project due to previous interactions with Holcim. For example, one survey response stated:

> "From my dealings with Holcim as a customer I find their existing quarry provides an exceptionally professional service, high spec products and implement a high level of WHS within the quarry site."

However, concerns which resulted in an opposition of the Project were related to noise and speed of trucks driving along Sheraton Road.

A list of potential impacts (positive and negative) that are often associated with mining and resource extraction projects was also provided within the survey (see Figure 6.2). Participants were asked to rank social impacts either negative, neutral, or positive. There was a mix of responses regarding social impacts with respondents ranking most of the impacts as either negative or neutral. Respondents ranked employment (83.3%), small business (83.3%), access to housing (66.7%), access to services (66.7%) and access to social infrastructure (66.7%) as positive impacts. Negative impacts ranked by respondents were noise (33.3%) and groundwater (33.3%).

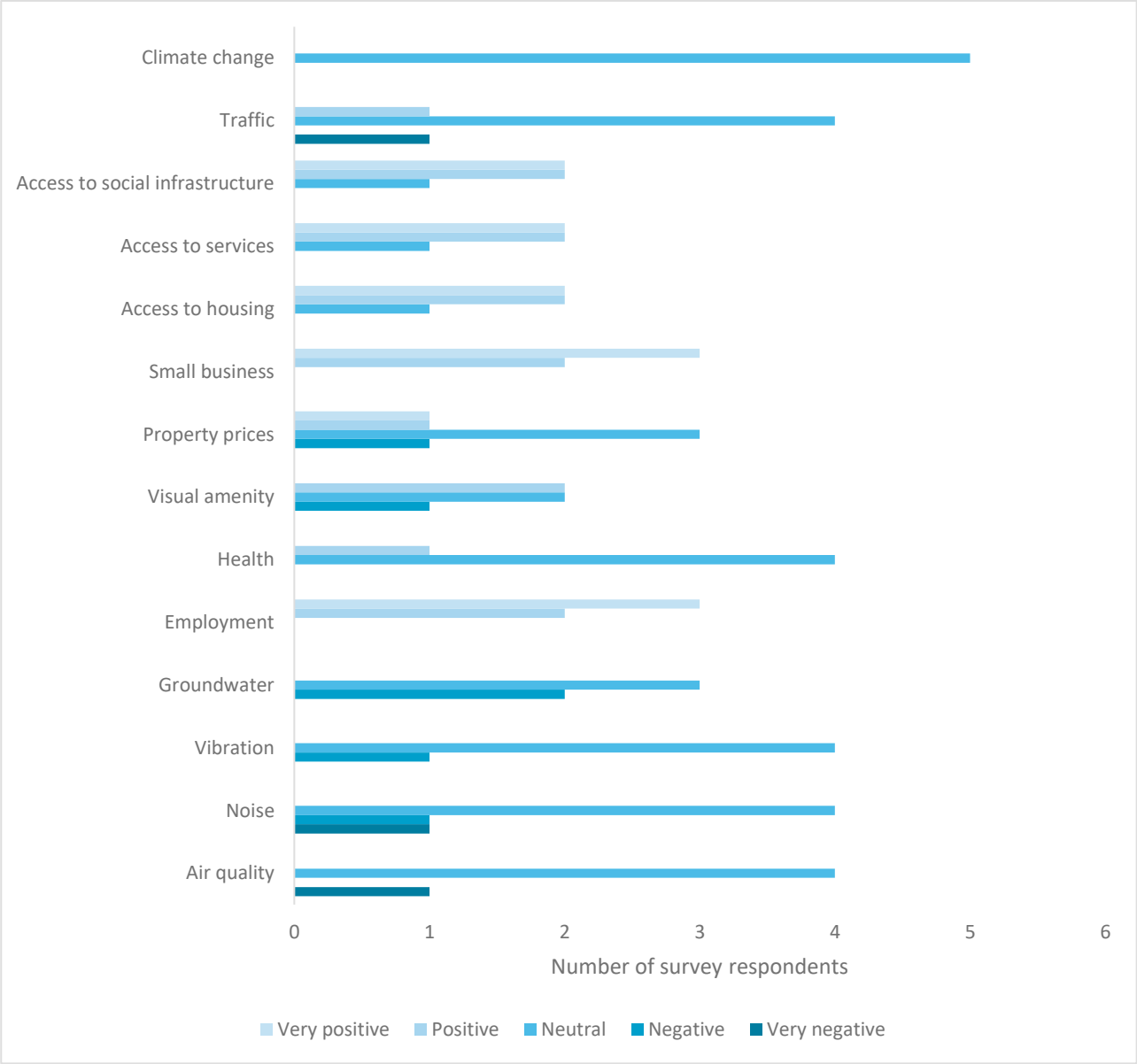


Figure 6.2 Perceived potential social impacts and benefits

6.2.4 Summary of SIA field study findings

A summary of the community and stakeholder concerns and perceived benefits related to the Project, drawn from the community workshops and online survey, are shown in Table 6.5.

Table 6.5 Summary of community and stakeholder engagement findings

Issues	Detail
Amenity	Currently experiencing issues with dust, noise, vibration and air quality as a result of existing quarries which impacts the local area and resident livelihood. Noise (from trucks travelling along Sheraton Road and blasting) is a significant issue for local residents which results in annoyance. Dust becomes more prominent and a greater issue during windy weather.
Property	Property prices within the local housing market are increasing. Site being within close proximity to the town disrupts the livelihood of local residents.
Livelihood and employment	Provision of ongoing employment.
Economic benefits	There is a significant demand for high-quality product to be used in infrastructure and building developments across NSW. This could contribute to flow-on economic benefits in the local area, across the region, and state-wide from continued quarrying.
Rehabilitation and post-operation land use	There is the potential for post-closure land rehabilitation to contribute to the recreational amenity and economic viability of the local community. Proposed future land uses include the development of showgrounds, an equestrian centre, parks, and agriculture.
Water	Watering down and increased salinity of Eulomogo Creek deteriorating the creek. Issues with surface water particularly for the downstream, creek and river water quality, Eulomogo Creek needs to be rehabilitated and biodiversity needs to be improved. Fears of water scarcity and insecurity within the Dubbo Region as drought is considered a vulnerability within the town.
Traffic and road safety	Safety of trucks driving within the school zones, would like to see truck movements mitigated when travelling through school zones specifically during school drop off and pick up times. Increased traffic congestion along Boundary Road and Sheraton Road. Speed of trucks driving along Sheraton Road and within school zones is a great concern for the local community and would like to see increased road safety. Poor conditions of the road need to be able to keep up with the construction and development work within the region.
Rehabilitation	Ensuring future land uses are viable for the local area and that positive outcomes align with the values of the local community.

6.3 Community identified impacts and opportunities

A summary of the potential social impacts and opportunities identified by participants in the SIA are provided in Table 6.6.

Table 6.6 Community identified impacts and opportunities

Impacts	Themes	Opportunities
Skills shortages resulting in non-local recruitment for the Project.		Ongoing local employment.
Urban sprawl and increases in property pricing.		Growing demand in the local housing market.
Not identified by the community.		Employment continuation and flow on economic benefits. Production of a high-demand resource. Increased competition for quarries in the local area.
Not identified by the community.		Support and growth of the local industry, including the potential procurement by local cement and metal works.
Amenity impacts arising from dust, noise and vibration.		Enhanced local amenity and recreation opportunities following land rehabilitation.
Traffic safety impacts, particularly regarding trucks driving through school zones during peak hours.		Not identified by the community.
Land use tensions and decreases in property values arising from poor land rehabilitation.		Rehabilitation opportunities and future land uses.
Water security and watering down. Surface and ground water conditions, including concerns around increased salinity and subsequent impacts on Eulomogo Creek.		Potential for rehabilitation of existing and proposed sites to improve natural areas.

7 Social impact assessment

7.1 Assessment approach

This chapter provides a ranking of the identified potential social impacts of the Project. The aim of the SIA is to assess the proposed change to the current social conditions and has utilised data from several sources to develop a layered picture of the potential social impacts that are likely consequences or changes experienced by the community as a consequence of the Project.

In order to prioritise the identified potential social impacts, a risk-based framework (see Appendix A) has been adopted in the assessment of social impacts. Findings from technical reports as well as the perceptions of stakeholders were considered when conducting the social risk ranking to ensure an integration of expert and local knowledge in impact assessment and the development of appropriate impact mitigation, amelioration, and enhancement strategies.

Assessment of social impacts is complex and, therefore, requires the balancing of a range of factors and often competing interests. The impact assessment is reflective of this and has:

- assessed some aspects of the 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.

The social impacts below have been assessed on a worst-case scenario initially and then the residual effect is assessed on the basis that mitigation of negative impacts or enhancement of benefits (positive impacts) are successfully implemented. The assessment uses the terms unmitigated and mitigated when referring to negative impacts and un-enhanced or enhanced when referring to benefits (positive impacts).

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

- data collected as part of the social baseline;
- findings from community and stakeholder engagement activities;
- findings from technical studies;
- academic research; and
- relevant high-quality government and agency reports.

A social impact workshop was conducted by EMM's social scientists to assess impacts using a social risk framework shown in Appendix A. Using the consequence and likelihood framework allows the assessment of the level of significance of a social impact as negligible, marginal, moderate, major, or intolerable, and the assessment of the level of significance of a social benefit as minimal, minor, desirable, or highly desirable, based on a combination of likelihood and consequence. Both negative impacts and benefits (positive impacts) have been assessed. The social

risk assessment is informed by the primary and secondary data collected from the literature review, social baseline study, SIA field study, and findings of technical studies.

7.2 Way of life impacts

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, on the way of life impacts and the matters that significantly impact the way of life as a consequence of the Project. The matters assessed include:

- provision of ongoing local employment;
- noise from truck movements causing amenity issues;
- dust causing amenity issues; and
- land rehabilitation.

7.2.1 Access to adequate employment (ongoing) – unenhanced

The quarry currently employs 12 full-time employees, 25 contractor truck drivers, 28 regular and 10 irregular contractors. The Project will utilise the existing quarry workforce during operations.

Workshop participants identified the provision of ongoing employment related to the Project as a significant potential benefit. During discussion facilitated during the SIA workshops, there was an emphasis on continuation of employment within the local and regional area, as well as the need to provide additional employment opportunities. Survey respondents also indicated that the Project would provide benefits related to employment. Of the 5 responses related to impacts on employment, 2 survey participants rated the potential employment impacts related to the Project as positive, and 3 rated the potential impacts as very positive. Survey respondents expanded on the potential benefits related to employment, stating that "[the Project] will continue to keep people's jobs which is important" and "[the Project] supports creation of jobs longer term".

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 local employment during the construction and operation of the Project is assessed as Significant-11 as employment of a local and regional workforce is likely pending Project approval and the potential benefits are desirable due to the potential benefits to the local and regional economy and local workers. The benefits will realise in the short to medium term and may or may not be permanent.

7.2.2 Access to adequate employment (ongoing) – enhanced

To increase the benefits arising from ongoing access to adequate employment, it is recommended that Holcim implement a local participation strategy and plan as part of their operation, as well as provide training and skill-enhancement opportunities to their employees.

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

In the local area, multiple employment services offer training services, apprenticeship and traineeship services, and employment support services (Ask Izzy 2020). TAFE Western Institute and Western College also operate in Dubbo, offering vocational education and training in a variety of fields (Western College 2019; TAFE 2020). Liaison and/or partnership with these services could aid in the successful training of operation employees.

Enhanced, way of life and livelihood benefits arising from access to adequate employment for local residents during operation is assessed as Significant-12. With a commitment to local hiring and the provision of training and upskilling opportunities, the benefit is almost certain and desirable, with permanent benefits being realised in the short to medium term. A summary of the assessment is provided in Table 7.1.

Table 7.1 Summary of access to adequate employment (ongoing)

Benefit	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
	Benefits from access to adequate employment for local residents during operation	Current quarry employees	Operation	Local area Regional area	Significant-11	Significant-12

7.2.3 Access to adequate employment (short-term) – unenhanced

Additional contractors would be required during construction of the Eulomogo Creek crossing (up to 6 persons) and the proposed access road (up to 9 persons) in addition to the existing workforce of the quarry.

As labourers and managers are amongst the top occupations within the local area (both 18.2% of the working population) (ABS 2016) and a certificate qualification is the top qualification in the local area amongst persons with a non-school qualification (41.4%) (ABS 2016). It is reasonable to assume that some persons living within the local area have the necessary qualifications to contribute to the construction phase of the Project. These trends extend to the regional area where 16.5% of workers are labourers, 16.5% are managers, and 40.5% of persons with a non-school qualification hold a certificate qualification.

According to the 2016 ABS Census of Population and Housing, the local area has an unemployment rate of 5.5%, which is lower than both the regional area (6.2%) and NSW (6.3%). In addition, there are unemployed persons (people who are not working but are looking for work) within the local and regional area, including persons who are qualified for employment under the Project during the construction phase such as labourers, technicians and trades workers, machinery drivers and operators, and managers (see Section 5.3).

Unenhanced, the benefit from local employment during construction of the Project is assessed as Limited-3 as, although the employment of a local and regional workforce is possible, the potential benefits are minimal due to the short duration of construction works and the small construction workforce.

7.2.4 Access to adequate employment (short-term) – enhanced

Most of the construction workforce is anticipated to be sourced locally. A commitment to, and successful implementation of, a local participation strategy and plan by Holcim and their contractors as part of their construction strategy would increase access to employment for the duration of the construction.

Assuming the enhancement strategy is effectively implemented, there would be a small increase in the number of employed persons from the local and regional area. This would contribute to reductions in unemployment and improve the lives of those employed by providing financial and job security in the short-term.

The assessment of the enhanced benefit is Limited-5 for residents of the local and regional area who possess the relevant qualifications to contribute to the construction of the Project. Although the implementation and commitment to a local-hire program would increase the likelihood of the benefit to almost certain, the consequence would remain minimal as the construction phase would be short-term (3–4 weeks for access road construction and 1–2 months for the new haul road across Eulomogo Creek) and does not require a significant number of workers. A summary of the assessment is provided in Table 7.2.

Table 7.2 Summary of access to adequate employment (short-term)

Benefit	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
	Livelihood benefits from access to adequate employment of local residents during construction	Residents with qualifications for work	Construction	Local area Regional area	Limited-3	Limited-5

7.2.5 Noise from truck movements causing amenity issues – unmitigated

Under a worst-case future maximum production scenario, operational quarry truck traffic movements would be up to 121 truckloads on peak days, equalling 242 truck movements. Truck transport would potentially occur between the hours of 4 am – 6 pm, Monday to Saturday (Sundays or public holidays for emergencies).

The SIA field study indicated that local residents highly value the "country feel" of their community, with workshop participants regarding the "quiet and peaceful" nature of the community. Workshop participants raised concerns that noise from truck movements would detract from the current amenity of the local community and affect some residents located along the transport route along Sheraton Road. This concern was also raised by survey respondents, with one respondent stating that "the noise and speed of the trucks travelling via Sheraton Road residential area is unbearable".

According to the conducted Noise and Vibration Impact Assessment (NVIA), predicted noise levels for the nearest residence on Sheraton Road (R3) confirm that future (existing + maximum production scenario) road traffic noise levels will be compliant with the RNP local road criteria. Road traffic noise levels have also been predicted for the internal classroom areas according to the worst-case (busiest) traffic period while the school is in use. A nominal external-to-internal noise reduction for both windows open and windows closed scenarios has been assumed (ie 10 dB and 20 dB respectively). Given that the windows open scenario shows existing road traffic noise exceeding the relevant RNP criterion by 10 dB, it has been assumed that classrooms would be fitted with mechanical ventilation and operate with windows closed. Future (existing + maximum production scenario) road traffic noise levels are predicted to exceed the internal criteria by up to 2 dB, representing an increase of 1.2 dB in noise level from the existing scenario. A 1 to 2 dB increase in noise level is generally considered to be negligible by the EPA, as per the Noise Policy for Industry (NPfI), as this level of change in noise is largely imperceptible to the human ear in an environmental context. Additionally, the RNP states that where existing road traffic noise criteria are already exceeded, any increase in total traffic noise level should be limited to 2 dB. Further, this peak site traffic period occurs during the morning or afternoon school zone timing, so it is likely that only limited classes would be in session at these times. In accordance with the RNP and based on predicted road traffic noise levels discussed above, the Project is not expected to cause any additional road traffic noise impacts (EMM 2020b) (see Appendix D for further detail).

Unmitigated, the impact arising from noise from truck movements causing amenity issues is assessed as Low-6 as it is possible that road traffic noise will continue to be experienced by the local area, particularly along the haulage route. However, the potential consequences are negligible as the impacts on liveability within the local area are not anticipated.

7.2.6 Noise from truck movements causing amenity issues – mitigated

A maintained community grievance mechanism (ie complaints hotline and Project email) will further reduce the potential way of life impacts due to noise from road traffic on residents and schools in the local area. If noise from construction is well managed by addressing concerns raised by the local community, the likelihood of amenity impacts due to noise from construction is reduced to unlikely, with the negative consequence reduced to negligible. Therefore, the mitigated risk is assessed as Negligible-2.

A summary of the assessment is provided in Table 7.3.

Table 7.3 Summary of noise from truck movements causing amenity issues

Impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Way of life 	Noise from truck movements causing amenity issues	Local area (particularly stakeholders located along the haulage route)	Operation	Local area (particularly the haulage route)	Negligible-3	Negligible-2

7.2.7 Noise from quarry operations causing amenity issues – unmitigated

The SIA field study indicated that local residents highly value their local amenity, including their ability to engage in local recreation activities, such as visiting natural areas, and the "peaceful" nature of their residential areas. Noise levels that would detract from the current amenity of the local community and affect some neighbouring residents. Data from the SIA field study also indicates that noise is a concern for local residents, with both workshop participants and survey respondents identifying noise as a potential negative impact arising from the Project, especially related to the operation of the quarry.

Noise 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.). This noise could impact the amenity of the local area for the life of the quarry. This may 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 Project.

The results from the NVIA found that exceedances of NPfI project noise trigger levels (PNTLs) from operations are predicted for several residential assessment locations during stripping operations, drilling operations, and general quarry operations (EMM 2020b). Exceedances range from negligible (1-2 dB) to significant (>5 dB and >recommended amenity noise level (RANL)). However, future noise levels are predicted to be relatively unchanged compared to existing operational noise levels.

The unmitigated impact from noise from quarry operations is assessed as High-12. The likelihood of impact is almost certain, with the anticipated consequences surviving the life of the Project.

7.2.8 Noise from quarry operations causing amenity issues – mitigated

Feasible and reasonable noise mitigation measures have been adopted for proposed operations as detailed in Appendix D of the EIS, including the 'at source' mitigation of the 'primary screen/secondary (cone) crusher' (at source mitigation) and the construction of a 4 m high bund along boundaries in the WEA and SEA (at path mitigation). To address the predicted residual noise impacts, negotiated agreements as per the *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments* (VLAMP), may need to be considered. The application of negotiated agreements will be subject to Conditions of Approval and imposed noise limits. Additionally, at-receiver mitigation has been recommended for residences where site noise levels are predicted to exceed project noise trigger levels (PNTL) significantly. The development of a community and stakeholder engagement strategy that provides provision for regular consultation with affected residents and the continued maintenance of a community grievance mechanism will also provide the opportunity for residents to raise concerns about noise from the quarry operations, which can then be considered and addressed accordingly.

With the proposed mitigation measures in place, the likelihood of impact is reduced to possible as the mitigation measures to be put in place will minimise their occurrence. However, the consequence remains moderate as noise will still occur. Therefore, the mitigated impact from noise from quarry operations is assessed as Medium-9.

A summary of the assessment is provided in Table 7.4.

Table 7.4 Summary of noise from quarry operations causing amenity issues

Impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Way of life 	Noise from quarry operations causing amenity issues	Local area (particularly residents located near the Project area)	Operation	Local area (particularly the Project area)	High-12	Medium-9

7.2.9 Dust causing amenity issues – unmitigated

Concerns regarding air quality were raised by participants in the SIA community workshops and the on-line survey.

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 Ministry of 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 Ministry of Health 2017).

The conducted Air Quality Impact Assessment (AQIA) determined that the predicted concentrations and deposition rates for incremental particulate matter (total suspected particles (TSP), particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and dust deposition) are below the applicable impact assessment criteria at all assessment locations for both the existing and proposed scenarios (EMM 2020c). Cumulative impacts were also assessed by combining modelled impacts with recorded ambient background levels. The cumulative results showed that compliance with applicable NSW EPA impact assessment criteria is predicted at all assessment locations for all pollutants and averaging periods. A range of best practice mitigation measures are already, and will continue to be, employed at the quarry. These include the use of water carts and sprays, paved roads, watering conveyor transfer point, watering exposed areas where possible, and progressive rehabilitation of exposed areas. These measures have been taken into account in the emissions estimation and modelling of each scenario.

The unmitigated impact from dust causing amenity issues is assessed as Negligible-2. Based on the findings from the air quality impact assessment, it is unlikely that social impacts will arise due to dust created by the Project, with negligible anticipated negative consequences.

7.2.10 Dust causing amenity issues – mitigated

Wherever practical to do so, the quarry currently implements, or will implement under the Project, dust control measures that are consistent with accepted best practice mitigation measures for significant operational sources of particulate matter emissions. To manage any community concerns related to dust exacerbating health related issues, Holcim will continue to maintain their community grievance mechanism to ensure any amenity concerns related to dust generated by the Project are captured and addressed. The mitigated impact remains as Negligible-2.

A summary of the assessment is provided in Table 7.5.

Table 7.5 Summary of dust causing amenity issues

Impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Way of life 	Dust causing amenity issues	Local residents (particularly residents near the Project area)	Operation	Local area (particularly residents near the Project area)	Negligible-2	Negligible-2

7.2.11 Voids and bunding affecting visual amenity– unmitigated

Workshop participants identified the existing rural amenity and the natural environment of the local area as values of the Dubbo community. Amenity refers to the "pleasantness, attractiveness, desirability or utility of a place, facility, building or feature" (DPIE 2020a). Changes to the visual landscape as a consequence of mining and quarrying projects has the potential to create social impacts by reducing the aesthetic value amenity of local natural and built environments (DPE 2017).

The conducted Visual Impact Assessment (VIA) identifies three existing rural residences on Sheraton Road which have a ranking of high or moderate sensitivity, to the moderate visual effects associated with the proposed voids and bunding, and to a lesser extent with the new and existing surface infrastructure (EMM 2020a).

Those residences are:

- R1 Sheraton Road (High sensitivity to WEA);
- R2 Sheraton Road (Moderate sensitivity to WEA; Moderate sensitivity to SEA); and
- R3 Sheraton Road (Moderate sensitivity to WEA)

For all other rural residences, the impact is assessed to be low or non-existent, due to both viewing distance and the presence of intervening structures and vegetation.

According to the VIA, the anticipated visual impact to rural residence #R1 is high/moderate due to the high sensitivity to the visual element of the proposed bunding and the bunding identified as having a moderate ranking in terms of visual effect. The anticipated visual impact to rural residences #R2 and #R3 is assessed as moderate.

Unmitigated, the social impact from voids and bunding affecting visual amenity is assessed as Medium-8. The likelihood of impact is almost certain, with anticipated moderate consequences as impacts on liveability will survive the life of the Project.

7.2.12 Voids and bunding affecting visual amenity – mitigated

The potential impact to rural residence #R1 suggests the need for additional design solutions, mitigation measures, or interventions to alleviate the visual impact for this neighbouring residential dwelling. Holcim will prepare and follow an agreement formed with the residents of #R1. For rural residence #R2 and #R3, the overall moderate visual impact means that additional design solutions, mitigation measures, or interventions should also be considered to reduce the level of visual impact, and care should be taken to ensure that solutions for rural residence #R1 are mutually beneficial to rural residence #R2 and #R3.

The development of a community and stakeholder engagement strategy that provisions for thorough consultation with affected residents would ensure that any additional design solutions, mitigation measures, or interventions are informed and accepted by the residents who would be affected. The continued maintenance of a community grievance mechanism will also provide the opportunity for residents to raise any additional concerns about visual impacts from voids and bunding as the Project progresses, which can then be considered and addressed accordingly.

The mitigated impact is assessed as Low-6. With the successful implementation of the above mitigation measures, the likelihood of impact is reduced to possible. However, the consequence remains marginal as any visual impacts from voids and bunding will remain for the life of the Project. A summary of the assessment is provided in Table 7.6.

Table 7.6 Summary of impacts to visual amenity due to voids and bunding

Impact	Matter	Affected parties	Duration	Extent	Unmitigated	Mitigated
Way of life 	Impacts to visual amenity due to voids and bunding	Rural residences #R1, #R2, and #R3	Operation	Project area (specifically on the western boundary)	Medium-8	Low-6

7.2.13 Land rehabilitation – unenhanced

Once extraction has completed, closure of the quarry will likely involve rehabilitation of the remaining unrehabilitated sections of the pits, decommissioning and removal of infrastructure and services; soil testing of potentially contaminated areas such as hydrocarbon storage areas and bitumen coating areas; and remediation or removal of any contaminated soil if required. Soil will also be tested for erosion and agronomic aspects and ameliorated as required to suit the agreed post-quarrying land use. Reshaping will be undertaken where required to blend disturbed surfaces into surrounding topography, contours scarified, and stockpiled soil applied to promote the establishment of species appropriate for the agreed post-quarrying land use. There will be opportunities for progressive rehabilitation of all available disturbed areas as the quarry is developed. Wherever possible during operations, disturbed areas no longer required for quarrying activities will be progressively rehabilitated (EMM 2020d).

The overarching rehabilitation objective of the Project is to restore the land as much as possible to its pre-quarrying land use at the end of its operational life; that is, primarily an agricultural land use comprising grazing on improved pasture while improving the biodiversity values of the area by re-establishing endemic woodland communities as part of the rehabilitation program. A detailed Rehabilitation and Landscape Management Strategy is available in Appendix J of the EIS.

Workshop participants identified the rehabilitation of the Project area, particularly the existing site and the WEA, as a potential opportunity for the local community. Workshop participants stated that if rehabilitation was successful, they anticipated that it would produce local benefits in the form of useful land provision, increases in property value, and improvements to the amenity of the area.

The unenhanced benefit of land rehabilitation is assessed as Significant-11. The potential for benefits is likely as the possible benefits have occurred in similar projects, with the positive consequences assessed as desirable as the local and regional community will benefit, with potential improvements on social amenities and livelihood opportunities.

7.2.14 Land rehabilitation – enhanced

The Rehabilitation and Landscape Management Strategy (EMM 2020d) outlines specific rehabilitation methods for closure of the quarry, including soil management, establishment of vegetation, erosion and sediment control, and post-closure maintenance (see Appendix J for more detail). Successful adoption of the enhancement strategies identified in the Rehabilitation and Landscape Management Strategy (EMM 2020d) during closure would mean that it is likely that the quality of the land is safe, stable and non-polluting and would provide a viable post quarrying land use. Furthermore, the rehabilitated land could contribute to the liveability of the local area by facilitating the development of recreation facilities or productive economic opportunities (such as agriculture).

According to *Mining Rehabilitation: Leading Practice Sustainable Development Program for the Mining Industry* (Australian Government 2016), effective and timely engagement with stakeholders is a critical component in successful rehabilitation as stakeholder engagement not only provides meaningful contributions regarding potential future land uses but provides an opportunity to "align their expectations with the realities of rehabilitation as best as possible" (p.15).

Workshop participants identified multiple potential future land uses that could be pursued following the closure of the existing site and the WEA, including dedicating the land to recreational use (such as parks), the development of a new showgrounds or equestrian centre, and agricultural use. Workshop participants also expressed the need for the local community to be involved in the decision-making and planning processes related to rehabilitation of the site to ensure rehabilitation and future land use remains in line with the values of the community.

The Rehabilitation and Landscape Management Strategy also identifies community consultation as key to project planning and understanding the Project's potential impacts on the local community (EMM 2020d). Relevant stakeholders will be engaged in the rehabilitation and closure planning and implementation process, including in the development of a detailed closure plan as the Project progresses towards completion. The closure plan will address post-quarrying land use and rehabilitation objectives. Enhanced, the likelihood of way of life benefits arising from land rehabilitation would increase to almost certain. Additionally, the consequence remains desirable with realisation of benefits potentially being permanent. Accordingly, the enhanced benefit is assessed as Significant-12. A summary of the assessment is provided in Table 7.7.

Table 7.7 Summary of land rehabilitation

Impact	Matter	Affected parties	Duration	Extent	Unenhanced	Enhanced
	Land rehabilitation	Local residents and community members	Operation and post-closure	Local area (specifically the rehabilitated Project area)	Significant-11	Significant-12

7.3 Culture impacts

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, of the culture impacts and the matters that significantly impact culture as a consequence of the Project. The matters assessed include destruction of culturally significant Indigenous artefacts.

7.3.1 Destruction of culturally significant Indigenous artefacts – unmitigated

During community workshops, participants identified the potential for the Project to impact Aboriginal artefacts within the Project area, specifically artefacts which may be present within the Eulomogo Creek area.

The Project is shown to be in an area that is currently broadly used for pastoralism and cultivation, in addition to the current operations of the quarry. Most of the Project area been modified by historical land use practices and past disturbances associated with land clearing, manual and machine rock-picking, cropping and intensive livestock grazing which has increased susceptibility to sheet and gully erosion (EMM 2020e). In addition, neighbouring land-use practices include a neighbouring quarry and solar farm to the immediate north, in addition to surrounding low density rural residential housing approximately 1.5 km east of the Project area.

According to the conducted Aboriginal Cultural Heritage Assessment (ACHA) (EMM 2020e), unavoidable harm to Aboriginal objects is acknowledged as a consequence of the Project. However, the Project will only impact one Aboriginal site, identified as DQ-IF1, which consists of an isolated artefact with no associated sub-surface deposit located in an undulating plain in north-west of Project area receding slightly to the west. The ACHA has assessed the site as being of low archaeological significance, whilst acknowledging that it is of cultural significance to the Aboriginal community (EMM 2020e). The conducted ACHA does not anticipate potential impacts to Indigenous cultural heritage within the Eulomogo Creek area.

Although this site is assessed as having low archaeological significance, if the potential impacts are not mitigated it is possible that a culturally significant Aboriginal cultural heritage artefact is not salvaged or destroyed without permission. Without mitigation measures in place, the likelihood of impact is likely with negative consequence assessed as major as impacts can be permanent, with minimal external resources anticipated to be required to recover impacts. Therefore, the unmitigated impact of destruction of a culturally significant artefact on local and regional Indigenous communities and local communities is assessed as High-14.

7.3.2 Destruction of culturally significant Indigenous artefacts – mitigated

A framework for future consideration of Aboriginal heritage and historical heritage following approval of the Project has been recommended. This includes the development of an Aboriginal Heritage Management Plan (AHMP), avoidance of Aboriginal sites, relocation of the isolated artefact from Aboriginal site DQ-IF1, and special procedures including an unexpected finds protocol and discovery of new Aboriginal sites protocol to address and mitigate potential impacts to Indigenous cultural heritage and historical cultural heritage relics on the instance that they are encountered. Given the proposed mitigation measures in place (relocation of the artefact), the mitigated impact on the destruction of culturally significant artefact is assessed as Negligible-5. The likelihood of impact is reduced to rare. However, the consequence remains marginal. A summary of the assessment is provided in Table 7.8.

Table 7.8 Summary of destruction of culturally significant Indigenous artefacts

Impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Destruction of culturally significant artifacts or items	Local and regional Indigenous communities	Operation	Local area (limited to the operation area)	High-14	Negligible-5

7.4 Health and well-being impacts

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, on the health and well-being impacts and the matters that significantly impact the health and well-being of the community as a result of the Project. The matters assessed include:

- public safety issues due to truck movements through school zones; and
- dust exacerbating health related issues.

7.4.1 Public safety issues due to truck movements through school zones – unmitigated

All quarry-related traffic will exit the site via Sheraton Road, as per the existing operations, up to the intersection with the Mitchell Highway. The worst-case maximum truck traffic loads and (movements) to occur during the local peak hour periods under the Project have been estimated to be:

- 8 am – 9 am, general and school traffic AM peak hour = 8 loads (16 movements);
- 3 pm – 4 pm, school traffic PM peak hour = 10 loads (20 movements); and
- 4:30 pm – 5:30 pm, general traffic PM peak hour= 10 loads (20 movements).

This transport route passes three schools: St John's College, Saint John's Primary School, and Dubbo Christian School. These schools have a combined student enrolment of 1,918 students (ACARA 2020) (see Table 7.9.)

Table 7.9 Student enrolments

School	Sector	Type	Year range	Student enrolments
St John's Catholic Primary School	Non-government	Primary	K-6	425
St John's College	Non-government	Secondary	7-12	971
Dubbo Christian School	Non-government	Combined	K-12	522

Source: ACARA 2020

Truck movements through school zones along Sheraton Road raised concern amongst workshop participants, including residents and school representatives. Workshop participants reported existing safety issues with drop-off/pick-zones, including insufficient drop-off/pick-up space available and limited road crossings. Workshop participants indicated that speed limits, road crossings, and traffic safety along Sheraton Road and throughout the Dubbo area are ongoing issues within the community. Members of the CCC also raised questions regarding potential traffic impacts, including traffic flows.

A road safety audit (RSA) which identified seven safety items currently present on Sheraton Road was used to inform the Traffic Impact Assessment (TIA), which assessed the existing Sheraton Road and Mitchell Highway locality road conditions with the view of forecasting additional risks associated with the continuation of the Holcim quarry use, which will potentially generate more daily and peak hourly heavy vehicle traffic movements along both Sheraton Road and Mitchell Highway. However, the TIA notes that the majority of the safety items would be present regardless of the operation of the Project as they primarily relate to school-related traffic. The full RSA is available in the TIA in Appendix K of the EIS (EMM 2020f).

The RSA identified the mid-block children crossing located in the northern side of St John's Primary and failure to give way to school buses exiting the bus pick-up and drop-off area as posing high safety risks with the remaining seven items posing medium to low safety risks (Bitzios Consulting 2020). The mid-block children crossing located in the northern side of St Johns Primary is supervised by two school crossing supervisors. Sheraton Road is four-lanes (two-lanes each way) wide at this location. The school crossing does not comply with current road design standards for the location of new pedestrian crossings, with crossings of this type no longer permitted on four lane roads (EMM 2020f). This is because, in the event a large vehicle (occupies the median side lane, it may obscure the site line of a driver on the kerbside lane. The driver may not be able to see pedestrians or even the school crossing supervisor at the crossing and fail to give way and subsequently collide with pedestrians at the crossing.

During the site visit conducted for the RSA, it was also observed that through vehicles on Sheraton Road give way to school buses exiting the bus 'pick-up and drop-off area'. It is possible that an unfamiliar driver may fail to give way and collide with a bus full of school children (Bitzios Consulting 2020).

The unmitigated impact of public safety issues on Sheraton Road is assessed as Unacceptable-16 as the likelihood of impact is possible due to the large number of students attending the three schools along Sheraton Road and the potential presence of trucks during school pick-up and drop-off hours. The negative consequences are intolerable due to potential loss of life and the broad impact it has on residents. The duration of this impact would be long-term as the grief and loss is not limited to the time of the accident and loss.

7.4.2 Public safety issues due to truck movements through school zones – mitigated

Holcim is currently in consultation with the School's precinct and Dubbo Regional Council about the risk arising from truck movements through school zones. The Project would also include preparation and implementation of a Driver's Code of Conduct which would manage Holcim's contribution to these safety issues. The Code of conduct would document requirements for vehicle maintenance, driver behaviour and journey preparation. The quarry's proposed Driver's Code of Conduct will include a requirement for all truck drivers to give way to school bus movements. Alternative safer locations for buses to turn (for instance a roundabout at the southern end of the median) could be investigated by the school precinct and/or by Council. Alternatively, once constructed, buses can turn at the roundabout with Boundary Road or travel along Boundary Road to and from the school precinct and avoid the need for turns. Truck drivers employed at the quarry would be required to comply with the Code of Conduct as part of their site induction. Failure to comply with the code of conduct will result in immediate removal from site. Further information about the proposed Driver's Code of Conduct is given in the TIA available in Appendix K of the EIS (EMM 2020f).

The subject school crossing does not currently comply with current road design standards for the location of new pedestrian crossings, and that new crossings of this type are no longer permitted on four lane roads. Upgrades to this crossing could be considered by the schools and/or Council.

Holcim also plan to avoid large amounts of truck movements during school traffic peak hour periods. Although Holcim will work to keep truck movements limited during these times, there may some necessary movements outside of these hours based on requirements for materials.

Within the TIA, stakeholder engagement was recognised as a potential mitigation measure. Holcim has recently established a CCC for Dubbo Quarry with current members including representatives from Holcim, quarry staff, Dubbo Regional Council, Dubbo Christian College and St Johns College. These meetings could serve as a consistent means of monitoring the safety of school zones during operation. The ongoing maintenance of a project grievance mechanism (ie a complaints hotline and Project email address) would also provide the opportunity for community members to raise their concerns related to public safety issues related to truck movements through school zones, and have those concerns addressed by relevant personnel

With provision of appropriate and adequate safety road safety measures provided in the form of a Driver's Code of Conduct, upgraded crossings (as addressed by the local schools and Dubbo Regional Council), regular CCC meetings, and maintenance of a grievance mechanism, the mitigated health and well-being impacts due to public safety is assessed as High-15. The likelihood of impact is reduced to rare, with the negative consequence remaining intolerable due to the severity of impacts associated with potential loss of life.

Table 7.10 Summary of public safety issues due to truck movements through school zones

Impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Public safety issues associated with truck movements through school crossings and drop-off/pick-up school bus zones	Students, parents, and school staff of St John's College, Saint John's Primary School, and Dubbo Christian School	Operation	Local area (along Sheraton Road)	Unacceptable-16	High-15

7.4.3 Dust exacerbating health related issues – unmitigated

Workshop participants identified dust generation during the operation of the Project as a potential impact arising from the Project. However, only one survey respondent regarded the Project as potentially contributing to negative air quality impacts, with the other four respondents rating the impact as neutral.

Dust has the potential to exacerbate the health and well-being of local residents with respiratory conditions and those sensitive to changes in air quality during construction and operation. Dust (ie particulate matter (PM)) is generated by quarrying activities such as "extraction, drilling, crushing, screening, hauling and stockpiling aggregates and construction materials such as road base and manufactured sand" (NSW Resources Regulator 2019). When breathed in, this particulate matter may cause adverse health impacts, particularly to the lungs. However, the risk to health varies depending on the size and nature of the dust particles and existing respiratory vulnerabilities (NSW Ministry of Health 2017). Those with asthma and other respiratory conditions are more vulnerable to effects of poor air quality. Trend data for prevalence of asthma in the Western NSW LHD, which encompasses the local area and regional area, indicates that asthma has been more prevalent in the Western NSW LHD compared to the whole of NSW from 2002–2019 (Ministry of Health 2019), with 19.3% of adults within Western NSW LHD reporting prevalence of asthma in 2019 compared to 11.5% across NSW (Ministry of Health 2019). It is assumed that a small proportion of local residents within proximity to the Project area will have respiratory conditions or asthma that increase their pre-existing vulnerability to dust emissions and their potential to be affected by dust. However, these potentially affected people do have the ability to adapt and cope with these impacts given the adequacy and availability of health services in the local area (see Section 5.6).

The conducted AQIA determined that the predicted concentrations and deposition rates for incremental particulate matter (total suspected particles (TSP), particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and dust deposition) are below the applicable impact assessment criteria at all assessment locations for both the existing and proposed scenarios (EMM 2020c). Cumulative impacts were also assessed by combining modelled impacts with recorded ambient

background levels. The cumulative results showed that compliance with applicable NSW EPA impact assessment criteria is predicted at all assessment locations for all pollutants and averaging periods. A range of best practice mitigation measures are already, and will continue to be, employed at the quarry. These include the use of water carts and sprays, paved roads, watering conveyor transfer point, watering exposed areas where possible, and progressive rehabilitation of exposed areas. These measures have been taken into account in the emissions estimation and modelling of each scenario.

The unmitigated impact from dust exacerbating health related issues is assessed as Negligible-2. Based on the findings from the AQIA, it is unlikely that social impacts will arise due to dust and emissions created by the Project, with negligible anticipated negative consequences.

7.4.4 Dust exacerbating health related issues – mitigated

To manage any community concerns related to dust exacerbating health related issues, it is recommended that Holcim include information about air quality in any updates provided to the local community as part of their community and stakeholder engagement strategy and continue to maintain their community grievance mechanism to ensure any health concerns related to dust generated by the Project are captured and addressed. The mitigated impact remains as Negligible-2.

A summary of the assessment is provided in Table 7.11.

Table 7.11 Summary of dust exacerbating health related issues

Impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Dust exacerbating health related issues	Local residents (particularly residents near the Project area)	Operation	Local area (particularly residents near the Project area)	Negligible-2	Negligible-2

7.5 Surroundings impacts

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, on the surroundings impacts and the matters that significantly impact the surrounding as a consequence of the Project. The relevant matters assessed include discharge from the quarry into Eulomogo Creek.

7.5.1 Discharge from the quarry into Eulomogo Creek – unmitigated

The quarry is located within the Eulomogo Creek catchment. Eulomogo Creek flows in a westerly direction and joins the Macquarie River approximately 2.7 km to west of the quarry.

There were shared concerns amongst workshop participants regarding impacts to surface water as a consequence of the Project, particularly related to impacts to the quality of Eulomogo Creek. Stakeholders highlighted water and water security to be a vulnerability within the town, specifically concerning surface water as well as the watering down and increasing of salinity of Eulomogo creek. Water quality was also raised as an issue by survey respondents, with two out of five respondents perceiving the Project as having the potential to pose negative impacts on water quality. One survey respondent raised concerns specifically related to “impacts to the creek and downstream water quality”.

According to the conducted Surface Water Assessment (SWA), discharges from the site will enter Eulomogo Creek (EMM 2020g). As there are no watercourses in the WEA and SEA, all runoff from these areas flows into Eulomogo Creek via ephemeral drainage lines. The Settling Pond also receives runoff from the site processing area and immediate surrounds, as well as any water that is dewatered from In Pit Dam following wet weather conditions, or overflows from the East Pit, should this ever occur. When full, the pond overflows to Eulomogo Creek and is the quarry's only discharge location.

Unmitigated, through the absence of a water management system under the Project, discharge from quarry activities into receiving waters has the potential to impact aquatic ecosystems, visual amenity, recreation activities, and agricultural activities. The unmitigated impact to surroundings due to discharge from the quarry into Eulomogo Creek is assessed as High-13. Likelihood of impact is possible, with potential major consequences as impacts on livelihood and liveability could survive long after the life of the Project.

7.5.2 Discharge from the quarry into Eulomogo Creek – mitigated

As detailed in the Surface Water Assessment (SWA, EMM 2020g), the existing quarry's water management system would be modified and new water management infrastructure would be constructed as part of the Project. New pit sumps would be constructed for the capture of surface water runoff from the WEA and SEA. Two sediment ponds would be constructed either side of Eulomogo Creek to capture surface water from the proposed southern haul road. The capacity of the existing Settling Pond would also be increased under the Project.

After rainfall events these, and other water storages at the quarry, would be dewatered, to the decommissioned East Pit which, as described in the SWA (EMM 2020g), discharges from the existing quarry into Eulomogo Creek occur due to sedimentation basin overflows and dewatering of the East Pit (see Appendix H of the EIS). The water management strategy for the proposed operations seeks to minimise these discharges by modifying existing infrastructure and operating principles and establishing new infrastructure for the expansion areas. The East Pit will be used to store water for operational use. This reduces the need for discharges during, and shortly following, rainfall events.

The successful implementation of the water management strategy for the Project will substantially reduce the frequency and magnitude of discharges to Eulomogo Creek from both sedimentation basin overflows and East Pit dewatering, with discharges via both mechanisms occurring during wet conditions only, and at reduced magnitudes. These reductions will occur despite the quarry disturbance footprint increasing from approximately 34 ha to 62 ha under the Project.

Groundwater inflows into the East Pit are a primary source of water to the existing water management system (EMM 2020g). The quality of groundwater inflows is poorly understood; however, there is potential that groundwater inflows have higher salinity and nitrate concentrations then surface water runoff in the Project area. The water management strategy for the Project seeks to minimise groundwater inflows. Therefore, as the water management strategy for the Project is implemented, salinity levels and nitrate concentrations in the East Pit may decline overtime. This, combined with the reduced frequency and magnitude of discharges, is expected to beneficially change receiving water quality which may result in improved ecological conditions. Additionally, the water management strategy for the Project will reduce nutrient loads in discharges. This may reduce the risk of blue-green-algae blooms in downstream watercourses. It is also noted that discharges are not expected to have elevated concentrations of oils, petrol chemicals or floating debris which can impact the visual amenity of water.

Surface water monitoring is also proposed which will enable changes to water quality to be identified and the water management approach to be adjusted if required.

The mitigated surroundings impact from discharge from the quarry into Eulomogo Creek is assessed as Low-6 as it is unlikely to occur based on the proposed mitigation and monitoring measures and has marginal negative consequences.

Table 7.12 Summary of discharge from the quarry into Eulomogo Creek

Impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Discharge from the quarry into Eulomogo Creek affecting water quality	Users of Eulomogo Creek, both direct and indirect	Operation	Local area, (Eulomogo Creek)	High-13	Low-6

7.6 Personal and property rights impacts

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, on the personal and property rights impacts and the matters that significantly impact the person and property rights as a consequence of the Project. The matters assessed include decreasing property value due to poor rehabilitation.

7.6.1 Land rehabilitation – unmitigated

Workshop participants identified land rehabilitation as an important issue with regard to the Project. In particular, workshop participants identified the potential for land use tensions arising from poor land rehabilitation or land rehabilitation that did not consider the needs and/or wants of the local community. In particular, workshop participants raised concerns about current and proposed residential developments and rehabilitation of the existing quarry site and the WEA (ie the Southlake Estate residential development located to the east of the Project area).

Tensions related to rehabilitation of mining and quarrying operations can arise when community members and relevant stakeholders are not involved in the rehabilitation process. Cramer (2020) explains that "it is in the interests of the quarry operator to maximise the commercial value of the land for on-selling but this may conflict with local community aspirations". Although the rehabilitated site may support ongoing productive and sustainable land use, the dedicated land use may not be accepted by the community and other relevant stakeholders. Furthermore, in their assessment of impacts from Australia's mining legacies on Australians, Roche and Judd (2016) of the Mineral Policy Institute reveal that poor transparency related to mine closure plans and inadequate community consultation prevents accurate assessment of the potential impacts and risks related to Project closure and subsequent rehabilitation.

Without adequate transparency and consultation procedures, the unmitigated impact of land rehabilitation is assessed as Medium-9. Unmitigated the likelihood of impact is possible with moderate negative consequences as impacts on livelihood and liveability cold survive the life of the Project.

7.6.2 Land rehabilitation – mitigated

Stakeholder consultation and public participation will be necessary in the formulation of rehabilitation plans. The development of a community consultation strategy which includes provisions for the distribution of closure plan updates and information to relevant stakeholders, outline consultation processes related to closure and rehabilitation of the Project area, would contribute to the transparency of post-closure and rehabilitation activities. This strategy would also incorporate the continued operation of the CCC and their role in ensuring that land closure planning is effectively communicated to the local community. Relevant stakeholders will be engaged in the rehabilitation and closure planning and implementation process, including in the development of a detailed closure plan as the Project progresses towards completion. This should include landholders, nearby residents, and other key stakeholders. Feedback from key stakeholders will inform post-quarrying land use and rehabilitation objectives, as stated in the Rehabilitation and Landscape Management Strategy (EMM 2020d). By ensuring consistent transparency and consultation throughout the Project's life, stakeholder needs can be captured and rehabilitation-related risks minimised.

Mitigated, the likelihood of personal and property rights impacts arising from land rehabilitation would reduce to unlikely, with the anticipated negative consequences reduced to marginal as small efforts (ie adequate stakeholder involvement in closure planning) will be required to restore the socioeconomic impact. Therefore, the mitigated impact from land rehabilitation is assessed as Low-6. A summary of the assessment is provided in Table 7.13.

Table 7.13 Summary of land rehabilitation (impact)

Impact	Issue	Affected parties	Duration	Extent	Unmitigated	Mitigated
	Land rehabilitation	Local residents and community members	Operation and post-closure	Local area (particularly rehabilitation area neighbours)	Medium-9	Low-6

7.7 Fears and aspirations impact

This section provides a detailed assessment, unmitigated/mitigated and unenhanced/enhanced, on the fears and aspirations impacts and the matters that significantly impact the fears and aspirations as a consequence of the Project. The matters assessed include contributions to continued economic growth and development of the local area and the region.

7.7.1 Contributions to continued economic growth and development of the local area and the region – unenhanced

As identified in the 2040 Dubbo Community Strategic Plan, Dubbo Regional Council and the Dubbo community aspire for Dubbo to be the "big city in the bush" (DRC 2018, p. 15), with the 2040 Dubbo Community Strategic Plan focusing on increasing the general population, developing infrastructure to support the local community, ensuring economic growth, and enhancing employment opportunities whilst supporting local industries.

Workshop participants identified multiple community aspirations related to the development of the local and regional area, including:

- "to be a leading inland city";
- "stay as the 'Hub of the West'";
- "promote population and job growth"; and
- "strive towards being a sustainable city in terms of self-sufficiency".

During the community workshops, participants expressed that the flow-on economic benefits arising from the continuation of the quarry through approval of the Project would create opportunities within Dubbo, including continued development of industry, associated improvements to infrastructure, and general benefits to the Dubbo economy.

According to the Economic Impact Assessment (see Section 6.13 in the EIS), the Project would continue to provide a competitive, high quality construction material product to the Dubbo region. The Project will influence the construction industry within the local area, which influences community development as it facilitates the provision and improvement of infrastructure such as roads and highways, engineering and industrial projects, and residential development.

According to Cement Concrete & Aggregates Australia (2020), 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 positive consequence of the unenhanced benefit from the continued operation of the quarry has been assessed as Significant-14. Pending the approval of the 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 of the unenhanced benefit are assessed as highly desirable as the local and regional, and potentially state and national, economies may benefit permanently, including improvements on social infrastructure and associated enabled future social and economic development.

7.7.2 Contributions to continued economic growth and development of the local area and the region - enhanced

As the continued operation of the quarry is the enhancement measure, the enhanced benefit for aspirations related to continued economic growth and development of the local area and the region remains Significant-14. A summary of the assessment is provided in Table 7.14.

Table 7.14 Summary of contributions to continued economic growth and development of the region

Impact	Issue	Affected parties	Duration	Extent	Unenhanced	Enhanced
Fears and aspirations	Contributions to continued economic growth and development of the local area and the region	Local and regional community	Operation	Local area Regional area State	Significant-11	Significant-11

7.8 Cumulative impacts

There are several concurrent development projects operating, or are intended to operate, in and around the area of social influence. A total of thirteen projects (operational and proposed/approved) were identified within proximity to the Project area, within the LGAs of Dubbo Regional Council, Gilgandra Shire, and Mid-Western Shire. Therefore, these developments and their identified impacts have the potential to contribute to the cumulative impacts of the Project. A summary of State significant development projects as identified through the NSW DPIE Major Projects website and Dubbo Regional Council website, including workforce forecasts in construction and operational phases, is given in Table 7.15.

Table 7.15 Concurrent development projects

LGA	Project name	Anticipated timeframe/ project life	Development type	Status	Determination date	Construction workforce	Operational workforce
Dubbo Quarry Continuation Project	Dubbo Quarry Continuation Project	20–25 years (proposed extension to	Extractive industries	Prepare EIS	-	15	12
Dubbo Regional	Boral Quarries Talbragar (Brocklehurst)	Not stated	Extractive industries	Operational	-	-	20
Dubbo Regional	South Keswick Quarry	25–30 years	Extractive industries	Operational	July 2017	-	12–24

Table 7.15 Concurrent development projects

LGA	Project name	Anticipated timeframe/ project life	Development type	Status	Determination date	Construction workforce	Operational workforce
Dubbo Regional	Dubbo Solar Hub	NA	Electricity Generation - Solar	Approved	June 2016	NA	Estimated 5 (based on operational workforces of other solar farms)
Dubbo Regional	Dubbo Zirconia Mine	75 years	Minerals Mining	Approved	May 2015	300–400	250
Dubbo Regional	Forest Glen Solar Farm	35 years	Electricity Generation - Solar	Prepare EIS	-	120	5
Dubbo Regional	Uungula Wind Farm	25–30 years	Electricity Generation - Wind	Response to Submissions & Prepare Amendment Report	-	250	12
Dubbo Regional	Suntop Solar Farm	30 years	Electricity Generation - Solar	Approved	December 2018	250	10
Dubbo Regional	Suntop Stage 2 Solar Farm	35 years	Electricity Generation - Solar	Prepare EIS	-	300	Not stated
Dubbo Regional	Mumbil Solar Farm	25 years	Electricity Generation - Solar	Prepare EIS	-	100	Not stated
Dubbo Regional	Wellington North Solar Farm	30 years	Electricity Generation - Solar	Assessment	-	250	2–4
Dubbo Regional	Wellington Solar Farm	30 years	Electricity Generation - Solar	Approved, in constructio n	May 2018	200	1–3
Dubbo Regional	Maryvale Solar Farm	25 years	Electricity Generation - Solar	Approved	December 2019	150	No stated
Dubbo Regional Gilgandra Shire	Gilgandra Solar Farm	25-30 years	Electricity Generation - Solar	Approved, in constructio n	July 2017	110	Not stated
Dubbo Regional Mid-Western Regional	Burrendong Wind Farm	Not stated	Electricity Generation - Wind	Prepare EIS	-	Not stated	Not stated
					Total workforce	**2,145**	**345**

Source: DPIE 2019, Major Projects; Dubbo Regional Council 2020b

The majority of the projects consist of proposed and approved electricity generation developments (solar and wind) and are either awaiting approval, about to begin construction or are in the construction phase. The developments that are within proximity to the Project area (located between 19–40 km from the Project area) include:

- Dubbo Zirconia Mine;
- Suntop Solar Farm;
- Suntop Stage 2 Solar Farm;
- Wellington Solar Farm;
- Wellington North Solar Farm; and
- Forest Glen Solar Farm.

For the developments within proximity to the Project area, there is the potential that interactions can produce socio-economic impacts concurrently or sequentially. The construction phase of the Project will utilise the existing workforce as well as an addition of four to six contractors. The known construction workforce associated with expected concurrent projects is 2,145 full-time employees. Whilst it is unlikely that all of these employees will be sourced externally, the total has been used for conservative purposes as the level of in migration resulting from other projects is unknown. As construction of the Project only requires a small number of external contractors for a short period of time, contributions to any cumulative impacts (compared to other concurrent projects) during construction works is expected to be minimal. For any construction contractors hired outside of the local area, it is expected that existing services and facilities will be able to accommodate workers as the duration of employment is short, and the local area is considered a large regional centre and is equipped with appropriate social infrastructure and services (see Appendix B).

The population of the Dubbo Regional Council area is forecast to increase by 5,000 people (1.0% increase per year) between 2021 and 2041 (DPIE 2019). Therefore, the development of new projects within the local area will likely provide employment for construction workers and employment continuity once projects cease construction. However, as it is indicated that the construction workforce for the Project will mainly comprise of already existing workers and only a small number of additional contractors, there are unlikely to be issues regarding employment during the construction phase.

During the operations phase, there will be no changes to the existing workforce of 12 full-time equivalent (FTE) workers. The maximum known workforce associated with the operational phase of concurrent projects is 345 workers. It is assumed that operational workers for concurrent projects will relocate to the area with their families. Assuming an average household size of 2.5 persons (ABS 2016a), a maximum in-migration consisting of operational workers and their families for concurrent projects of approximately 863 people can be expected.

The cumulative population growth as a consequence of the Project and other projects is less than this forecast population increase. During operations, the cumulative population increase as a consequence of the Project and concurrent developments is 863 people, of which 35 could be a consequence of the Project. The cumulative population increase is less than the Dubbo Region population increase forecast of 5,000 people between 2021–2041 (DPIE 2019). Therefore, any significant concerns regarding the socio-economic cumulative impacts of the Project can be addressed and mitigated.

Cumulative impacts could also arise from public safety due to truck movements. Light and heavy vehicle traffic from both Holcim's quarry and the South Keswick Quarry currently travel along Sheraton Road. Without upgraded crossings and alternative turning locations provided by the schools/Council, this could pose a cumulative risk to students, parents, and school staff of St John's College, Saint John's Primary School, and Dubbo Christian School during pick-up and drop-off times. To mitigate the potential cumulative impact, it is recommended that provision of appropriate and adequate safety road safety measures be provided in the form of upgraded crossings (as addressed by the local schools and Dubbo Regional Council).

8 Mitigation and management

This section provides a summary of the identified social impacts along with the corresponding perceived stakeholder risk rankings 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.

Consultation on the Project has demonstrated significant support for the Project. The support for Project is largely two-fold; because of the benefits the Project would deliver to local workers and the local area, and the economic benefits generated in the local regional area and the state.

A summary of the mitigation and management measures is provided in Table 8.1.

8.1 Monitoring and management framework

The potential social impacts identified in this SIA for the Project is outlined in Section 7 above. 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 local area and regional area 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.

Table 8.1 Summary of mitigation and management strategies

Social impact	Matter	Unmitigated/ Unenhanced	Mitigated/ Enhanced	Responsibility	Potential partners	Proposed mitigation and management
Way of life – Benefit	Access to adequate employment (ongoing)	Significant-11	Significant-12	Holcim Contractors	Local training providers such as TAFE	Local participation strategy and plan and provision of training and upskilling opportunities for workers
Way of life – Benefit	Access to adequate employment (short-term)	Limited-3	Limited-5	Holcim Construction contractors	Local training providers such as TAFE Local employment service providers	Local participation strategy and plan
Way of life – Impact	Noise from truck movements causing amenity issues	Negligible-3	Negligible-2	Holcim Contractors	Local schools	Continued maintenance of community grievance mechanism
Way of life – Impact	Noise from quarry operations causing amenity issues	High-12	[Medium-9	Holcim Contractors	Local residents near the Project area	Development of community and stakeholder engagement strategy that includes provisions for residents affected by noise Continued maintenance of community grievance mechanism
Way of life – Impact	Dust causing amenity issues	Negligible-2	Negligible-2	Holcim Contractors	NA	Continued maintenance of community grievance mechanism
Way of life – Impact	Voids and bunding affecting visual amenity	Medium-8	Low-6	Holcim	Residences #R1, #R2, and #R3	Development of community and stakeholder engagement strategy that includes provisions for residents affected by visual changes from voids and bunding Continued maintenance of community grievance mechanism
Way of life – Benefit	Land rehabilitation	Significant-11	Significant-12	Holcim	Local community stakeholders	Inclusion of local stakeholders in the rehabilitation and closure planning and implementation process

Table 8.1 Summary of mitigation and management strategies

Social impact		Matter	Unmitigated/ Unenhanced	Mitigated/ Enhanced	Responsibility	Potential partners	Proposed mitigation and management
	Culture – Impact	Destruction of culturally significant Indigenous artefacts	High-14	Negligible-5	Holcim Contractors	Local Aboriginal stakeholders Dubbo Local Aboriginal Land Council	Development and implementation of AHMP, including avoidance measures and unexpected finds and discovery protocols
	Health and community well-being – Impact	Public safety issues due to truck movements through school zones	Unacceptable-16	High-15	Holcim Dubbo Regional Council Representatives of schools located along Sheraton Road South Keswick Quarry	Parents and teachers of schools located along Sheraton Road	Implementation of Driver's Code of Conduct, upgrades to school crossing, and continued engagement in the form of the CCC and a grievance mechanism
	Health and community well-being – Impact	Dust exacerbating health related issues	[Negligible-2	Negligible-2	Holcim Contractors	NA	Include information about air quality in any updates provided to the local community as part of Holcim's community and stakeholder engagement strategy Continued maintenance of community grievance mechanism
	Surroundings – Impact	Discharge from the quarry into Eulomogo Creek	High-13	Low-6	Holcim	NA	Implementation of water management strategy
	Personal and property rights – Impact	Land rehabilitation	Medium-9	Low-6	Holcim	Local community stakeholders	Inclusion of local stakeholders in the rehabilitation and closure planning and implementation process
	Fears and aspirations – Benefit	Contributions to continued economic growth and development of the local area and the region	Significant-11	Significant-11	Holcim	Local, regional, and state infrastructure development bodies	Operation of the Dubbo Quarry Continuation Project and liaison with Dubbo Regional Council for economic opportunities

9 Acronyms

Table 9.1 Acronyms

Acronym	
ABS	Australian Bureau of Statistics
ACHA	Aboriginal Cultural Heritage Assessment
AIHW	Australian Institute of Health and Welfare
AHMP	Aboriginal Heritage Management Plan
AHMAC	Australian Health Minister's Advisory Council
BOCSAR	Bureau of Crime Statistics and Research
CCC	Community Consultative Committee
Cr	Councillors
DA	development application
DCP	Development Control Plan
DPE	Department of Planning and Environment (now DPIE)
DPIE	Department of Planning, Industry and Environment
DRC	Dubbo Regional Council
DJSB	Department of Jobs and Small Business
EIS	environmental impact statement
EMM	EMM Consulting Pty Limited
EP&A Act	NSW *Environmental Planning Assessment Act 1979*
FTE	full-time equivalent
GP	General Practitioner
ha	hectares
Holcim	Holcim (Australia) Pty Limited
IAIA	International Association for Impact Assessment
IEO	Index of Education and Occupation
IER	Index of Economic Resources
IFC	International Finance Corporation
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IRDS	Index of Relative Socio-Economic Disadvantage
k	thousand
kL	kilolitre
km	kilometres
K10	Kessler 10
LEP	Local Environmental Plan

Table 9.1 Acronyms

Acronym	
LGA	local government area
LHD	Local Health District
LSC	Land and Soil Capability
ML/year	mega litres per year
OSHC	outside of school hours care
PHN	Primary Health Network
PM_{10}	Particulate matter less than 10 microns in aerodynamic diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in aerodynamic diameter
REINSW	Real Estate Institute NSW
RSA	road safety audit
SEA	Southern Extension Area
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SIA	social impact assessment
SIA Guideline	*Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development, September 2017*
SSC	State Suburbs
SSD	state significant development
SWA	Surface Water Assessment
t	tonnes
TfNSW	Transport for NSW
TSP	total suspected particles
tpa	tonnes per annum
TIA	Traffic Impact Assessment
WEA	Western Extension Area

10 References

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

ABS 2016b, 2033.0.55.001 – Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2016, Australian Bureau of Statistics.

ABS 2016c, 2049.0 – Census of Population and Housing: Estimating homelessness, 2016, Australian Bureau of Statistics.

ABS 2019, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2014 to June 2018, Australian Bureau of Statistics.

ACARA 2020, *My School*, Australian Curriculum, Assessment and Reporting Authority, https://www.myschool.edu.au/

ACECQA 2020, *National Registers*, Australian Children's Education & Care Authority, https://www.acecqa.gov.au/resources/national-registers

Adams, JM 2018, *Improving Individual and Community Health Through Better Employment Opportunities*, Health Affairs, viewed 3 December 2020, https://www.healthaffairs.org/do/10.1377/hblog20180507.274276/full/

AHMAC 2017, Aboriginal and Torres Strait Islander Health Performance Framework 2017 Report, Australian Health Ministers' Advisory Council, Canberra. https://www.niaa.gov.au/sites/default/files/publications/2017-health-performance-framework-report_1.pdf

ABS 2019, 3218.0 – Regional Population Growth, Australia 2017-18, Australian Bureau of Statistics.

AHURI 2019, *Understanding the 30:40 indicator of housing affordability stress*, Australian Housing and Urban Research Institute, viewed 11 May 2020, https://www.ahuri.edu.au/policy/ahuri-briefs/3040-indicator

AIHW 2019, Deaths in Australia, Australian Institute of Health and Welfare, viewed 11 May 2020, https://www.aihw.gov.au/reports/life-expectancy-death/deaths-in-australia/contents/life-expectancy

AIHW 2020, *Social determinants of health*, Australian Institute of Health and Welfare, https://www.aihw.gov.au/reports/australias-health/social-determinants-of-health

Ask Izzy 2020, *Ask Izzy*, https://askizzy.org.au/

Australian Government 2016, *Mining Rehabilitation: Leading Practice Sustainable Development Program for the Mining Industry*, Commonwealth of Australia.

Business Australia 2020, *Staff development and training*, Australian Government, https://business.gov.au/People/Managing-and-developing-staff/Staff-development-and-training

Bitzios Consulting 2020, *Holcim Dubbo Quarry: Road Safety Audit*, Bitzios Consulting.

BOCSAR 2019, NSW Local Government Area excel crime tables, NSW Bureau of Crime Statistics and Research, https://www.bocsar.nsw.gov.au/Pages/bocsar_crime_stats/bocsar_lgaexceltables.aspx

Brewsters Property Group n.d., The Value of Vacancy Rates, viewed 20 June 2020, https://brewsters.com.au/vacancy-rates/

Buslines Group 2019, 'Dubbo Buslines', https://buslinesgroup.com.au/dubbo.html

Cement Concrete & Aggregates Australia 2020, *The Economics of Quarrying*, viewed 3 December 2020, https://www.ccaa.com.au/iMIS_Prod/CCAA/Public_Content/INDUSTRY/Quarry/The_Economics_of_Quarrying.aspx#:~:text=As%20well%20as%20providing%20these,in%20rural%20and%20regional%20locations.

Cement Concrete & Aggregates Australia n.d., *Living near a quarry*, viewed 3 December 2020, https://www.ccaa.com.au/imis_prod/documents/Quarries/Quarry%20Factsheet%20-%20Noise%20LR.pdf

Charles Sturt University 2019, 'Our University', https://about.csu.edu.au/our-university

Civic Economics 2012, *Indie Impact Study Series: Salt Lake City, Utah*, viewed 3 December 2020, http://nebula.wsimg.com/09d4a3747498c7e97b42657484cae80d?AccessKeyId=8E410A17553441C49302&disposition=0&alloworigin=1

Civic Economics 2013, *Independent BC: Small Business and the British Columbia Economy*, viewed 3 December 2020, https://ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/ccednet/pdfs/independant_bc_small_and_the_british_colombia_economy.pdf

Cramer 2020, *New trends in managing mining liability*, Quarry, viewed 3 December 2020, https://www.quarrymagazine.com/2020/03/19/new-trends-in-managing-mining-liability/

DJSB 2020, *Australian Jobs 2019*, Department of Jobs and Small Business, https://docs.employment.gov.au/system/files/doc/other/australianjobs2019.pdf

DPE 2017, *Social impact assessment guideline: For State significant mining, petroleum production and extractive industry development*, Department of Planning and Environment.

DPIE 2019, *Population projections*, Department of Planning, Industry and Environment, viewed 15 May 2020, https://www.planning.nsw.gov.au/Research-and-Demography/Population-projections

DPIE 2020a, *Key Guidance: Amenity*, Department of Planning, Industry and Environment, *https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines/key-guidance/amenity*

DPIE 2020b, *Major Projects*, Department of Planning, Industry and Environment, https://www.planningportal.nsw.gov.au/major-projects

DPIE 2020d, *Legislation,* NSW Government, https://www.environment.nsw.gov.au/policy-and-law/legislation

DPIE 2020e, *Planning Approval Pathways*, https://www.planning.nsw.gov.au/Assess-and-Regulate/Development-Assessment/Planning-Approval-Pathways

DRC 2015, *Dubbo Mining Areas Land Use Strategy 2015*, Dubbo Regional Council.

DRC 2018, *Community Strategic Plan*, Dubbo Regional Council.

DRC 2019, *Community Participation Plan 2019*, Dubbo Regional Council,

DRC 2020a, *Delivery Program and Operational Plan 2020/2021*, Dubbo Regional Council, https://www.dubbo.nsw.gov.au/ArticleDocuments/197/DRC%20Delivery%20Program%20and%20Operational%20Plan%202020_R.pdf.aspx?Embed=Y

DRC 2020b, *Dubbo Regional Council*, https://www.dubbo.nsw.gov.au/#

DRC 2020c, *Vision, purpose and values*, Dubbo Regional Council, https://www.dubbo.nsw.gov.au/About-Council/Who-We-Are/vision-purpose-and-values

EMM 2020a, *Dubbo Quarry Continuation Project: Environmental Impact Statement*, EMM Consulting Pty Ltd.

EMM 2020b, *Dubbo Quarry Continuation Project: Noise and Vibration Impact Assessment*, EMM Consulting Pty Ltd.

EMM 2020c, *Dubbo Quarry Continuation Project: Air Quality Impact Assessment*, EMM Consulting Pty Ltd.

EMM 2020d, *Dubbo Quarry Continuation Project: Rehabilitation and Landscape Management Strategy*, EMM Consulting Pty Ltd.

EMM 2020e, *Dubbo Quarry Continuation Project: Aboriginal Cultural Heritage Assessment*, EMM Consulting Pty Ltd.

EMM 2020f, *Dubbo Quarry Continuation Project: Traffic Impact Assessment*, EMM Consulting Pty Ltd.

EMM 2020g, *Dubbo Quarry Continuation Project: Surface Water Assessment*, EMM Consulting Pty Ltd.

Harris & Sharma 2018, 'Estimating the future health and aged care expenditure in Australia with changes in morbidity', *PloS One*, vol. 13, no. 8.

Heritage Australia 2011, *Dubbo*, viewed 3 December 2020, https://web.archive.org/web/20110928135422/http://www.heritageaustralia.com.au/search.php?state=NSW&region=102&view=443

IAIA 2015, Social Impact Assessment: Guidance for assessing and managing the social impacts of projects, International Association for Impact Assessment.

Marin-Diaz, M, Llinas-Audet, X, Chiaramonte-Cipolla, L & Escardibul, J 2014, 'The Effects of Training on the Competitive Economic Advantage of Companies in Spain', *Education Research International*, vol. 2014, pp. 1-9.

Ministry of Health 2017, *Mine dust and you*, viewed 3 December 2020, https://www.health.nsw.gov.au/environment/factsheets/Pages/mine-dust.aspx

Ministry of Health 2019, *Healthstats NSW*, NSW Ministry of Health, viewed 15 May 2020, http://www.healthstats.nsw.gov.au/.

Healthdirect Australia 2020, *National Health Services Directory*, https://about.healthdirect.gov.au/nhsd

NSW Government 2018, *A 20-Year Economic Vision for Regional NSW 2018–2038*, https://www.nsw.gov.au/a-20-year-economic-vision-for-regional-nsw

NSW Government Roads and Maritime Services, 2019, *Building a better Dubbo: Road work, that works for you*, https://www.rms.nsw.gov.au/documents/projects/western-nsw/dubbo-projects/building-a-better-dubbo-poster-projects-intersection-2019-05.pdf

NSW Resources Regulator 2019, *Targeted Intervention Program: Respirable Dust in Quarry Operations*, NSW Government.

REINSW 2019, Vacancy Rate Survey Results, https://www.reinsw.com.au/Web/Members/Property_data/Vacancy_Rates_Survey.aspx

SQM Research 2020, *Residential Vacancy Rates*, https://sqmresearch.com.au/graph_vacancy.php

TAFE 2020, 'About TAFE NSW', https://www.tafensw.edu.au/about

TfNSW 2018, *Interactive crash statistics*, Transport for NSW, https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/index.html

TfNSW 2019a, *Dubbo*, Transport for NSW, https://transportnsw.info/plan/places-to-visit/dubbo

TfNSW 2019b, Routes and timetables, Transport for NSW, https://transportnsw.info/routes/train

TRA 2020, *Tourism Region Profiles*, Tourism Research Australia, https://www.tra.gov.au/Regional/Tourism-Region-Profiles/tourism-regional-profiles

Truitt, D 2011, 'The Effect of Training and Development on Employee Attitude as it Relates to Training and Work Proficiency', *SAGE Open*, vol. 1, no. 3, pp. 1-13.

University of Sydney 2019, *School of Rural Health (Dubbo/Orange)*, https://sydney.edu.au/medicine-health/clinical-schools/rural-health-dubbo-orange.html

Western College 2019, 'About Western College', https://www.westerncollege.nsw.edu.au/about/

Western NSW PHN 2019, 'Western NSW Primary Health Needs Assessment 2019-2022', https://www.wnswphn.org.au/uploads/documents/corporate%20documents/Western%20NSW%20Primary%20Health%20Network%20Health%20Needs%20Assessment%20%202019-2022_FINAL_upload.pdf

Western NSW LHD 2020, *Our Services,* Western NSW Local health District, https://wnswlhd.health.nsw.gov.au/#our-services-general

Appendix A

Risk-based framework

A.1 SIA risk-based framework

A social impact workshop was conducted to assess impacts using a social risk framework shown in Figure A.1. Using the consequence and likelihood framework allows the assessment of the level of significance of a social impact as negligible, marginal, moderate, major, or intolerable, and the assessment of the level of significance of a social benefit as minimal, minor, desirable, or highly desirable, based on a combination of likelihood and consequence. Both negative impacts and benefits have been assessed. The social risk assessment is informed by the primary and secondary data collected from the literature review, social baseline study, SIA field study, and findings of technical studies.

EMM creating opportunities

Risk rating methodology for SIA ®

SIA definitions	Positive Consequences (Benefits)				Negative Consequence (Impacts)					SIA definitions
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.	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 the 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.	**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 or 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	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.	**Cumulative duration the impact is experienced**

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

			4	3	2	1	1	2	3	4	5
			Higly Desirable	Desirable	Minor	Minimal	Negligible	Marginal	Moderate	Major	Intolerable
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).	5	Almost certain	Significant (15)	Significant (12)	Moderate (8)	Limited (5)	Low (6)	Medium (8)	High (12)	Unacceptable (16)	Unacceptable (16)
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.	4	Likely	Significant (14)	Significant (11)	Moderate (7)	Limited (4)	Negligible (4)	Low (7)	Medium (10)	High (14)	Unacceptable (16)
Has occurred at least once in this project or a similar project (or in the history of this operation).	3	Possible	Significant (13)	Significant (10)	Moderate (6)	Limited (3)	Negligible (3)	Low (6)	Medium (9)	High (13)	Unacceptable (16)
Has never occurred in this project (or operation) but has occurred at other similar projects (operations) with similar risk/benefit profile.	2	Unlikely	Significant (12)	Moderate (9)	Limited (5)	Limited (2)	Negligible (2)	Low (6)	Medium (8)	Medium (11)	Unacceptable (16)
Is possible, but has not occurred to date in this project or similar projects.	1	Rare	Significant (11)	Moderate (8)	Limited (4)	Limited (1)	Negligible (1)	Negligible (5)	Low (7)	Medium (10)	High (15)

Likelihood

Maximise benefit — **Aim** — Minimise impact

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

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)	

Appendix B

Social Baseline Study - Dubbo

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 outlined in Section 7 were assessed.

B.1 Purpose

A social baseline study is a requirement of the NSW *Social impact assessment guideline 2017* (the SIA Guideline). The baseline study describes the existing population and social conditions of potentially affected communities within the SIA area of social influence 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 (DPE 2017). 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 social area of influence. Gaining a broad understanding of the area of social influence allows us to differentiate between, and measure, a change that is likely to occur as a result of the Project as opposed to what would have likely occurred without the Project (IAIA 2015). Accordingly, this social baseline identifies the area of social influence for the Dubbo Quarry Continuation Project (the Project) and its existing known and predicted social conditions for its community.

B.2 Area of social influence

The Project is located within the suburb of Dubbo and as such their community make up the local area of social influence for the Project.

The Project is likely to have a broader reach due to supply chains, haulage routes, transportation of goods, materials and equipment, and the movement of its workforce, some of which may have drive-in-drive-out and/or fly-in-fly-out arrangements (DPE 2017). These factors require the area of social influence to include regional areas likely to be impacted by the Project which will extend to the Dubbo region. This region forms the regional area of social influence[2].

These communities have been mapped to the ABS categories used for data collection (Table B.1) and the local and regional area of social influence (hereto referred to as local area or regional area), illustrated in Figure 5.1 and Figure 5.2.

Table B.1 Area of social influence

Area of social influence	Geographic area	ABS data category	Referred to in report as:
Local area of social influence	Dubbo suburb	Dubbo State Suburb (SSC)	Local area
Regional area of social influence	Dubbo region	Dubbo SA3	Regional area
State of New South Wales	State of New South Wales	New South Wales STE	NSW

B.3 Demographic profile

The estimated population of the local area at the time of the 2016 census was 38,943, representing a 37.6% increase in the population since 2006. The total increase in the population of the local area as well as the annual average growth rate are higher than the average increases in population for both the regional area and NSW. The population trends within the area of social influence are presented in Table B.2.

[2] Data used to inform the social baseline is not available at all ABS-defined geographical boundaries. As such, data for indicators used within the social baseline study uses data at the Dubbo LGA level where required.

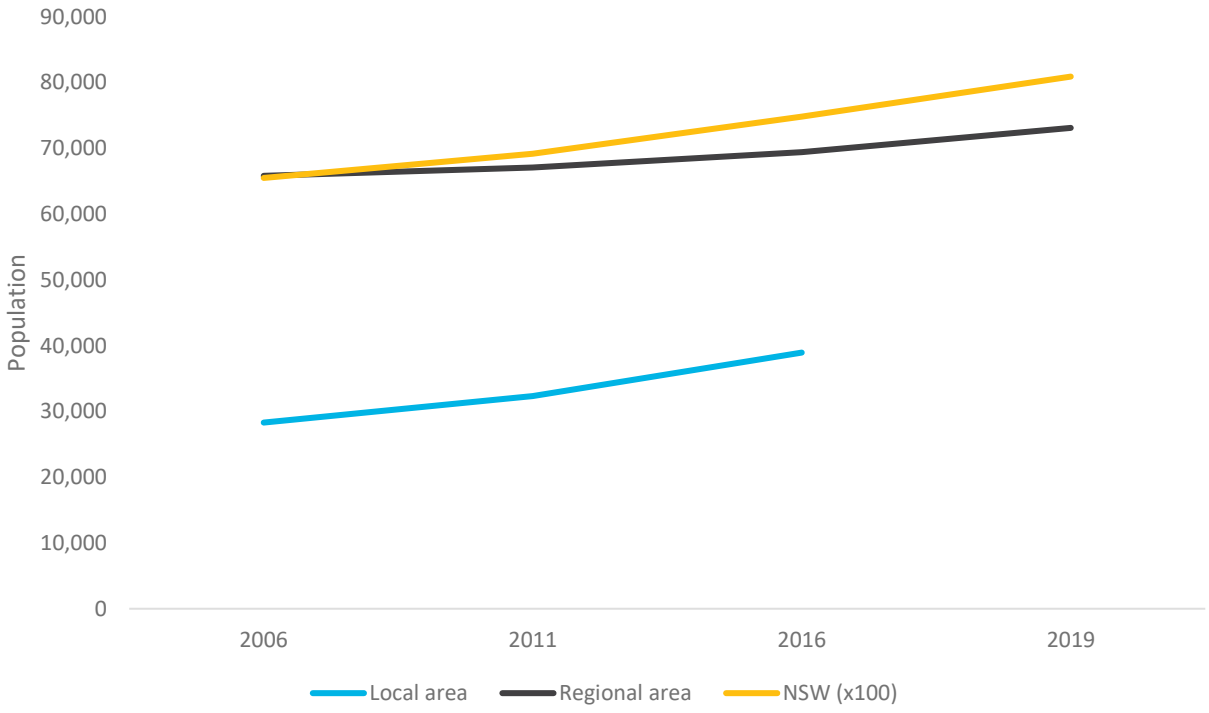
Table B.2 Population trends, 2006–2016

Location	2006	2011	2016	2019[1]	Total % change 2006 – 2016	Total % change 2011 – 2016
Local area	28,302	32,327	38,943	--	37.6%	20.5%
Regional area	65,818	67,100	69,414	73,101	5.5%	3.4%
NSW	**6,549,174**	**6,917,656**	**7,480,228**	**8,089,817**	**14.2%**	**8.1%**

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.

The population trends from 2006–2019 are presented in Figure B.1.



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

Figure B.1 Population trends, 2006–2019

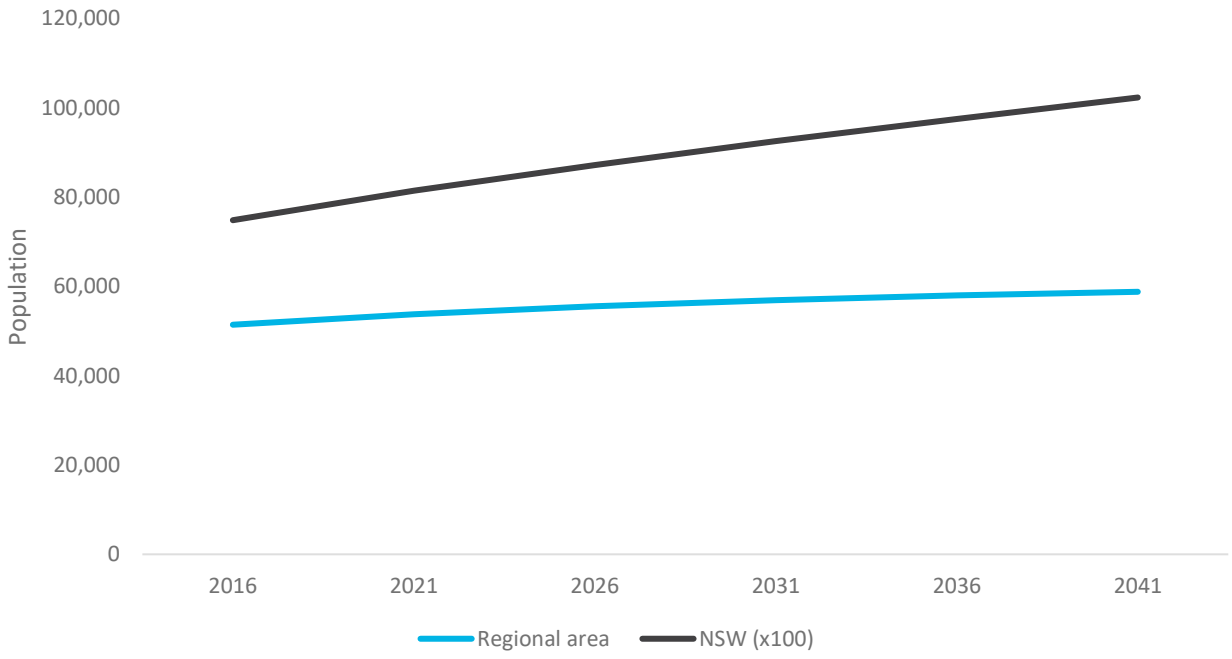
The projected population of the regional area is estimated to increase from a projection of 51,404 in 2016 to 58,777 in 2041. This represents a total projected population increase of 14.3 %. The growth is slower than the projected 2016–2041 growth for NSW (36.7% total increase) (see Table B.3 and Figure B.2).

Table B.3 Projected population, 2016–2041

Area	2016	2021	2026	2031	2036	2041	Total change	Total % change	Average annual growth rate
Regional area	51,404	53,724	55,530	56,926	57,980	58,777	**7,373**	**14.3%**	**0.6%**
NSW	**7,480,228**	**8,140,063**	**8,716,623**	**9,248,226**	**9,748,720**	**10,227,289**	**2,747,061**	**36.7%**	**1.5%**

Source: NSW Department of Planning 2019, NSW 2019 Population Projections: ASGS 2019 LGA projections

Notes: 1. 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 B.2 Projected population, 2016–2041

B.3.1 Population by age and sex

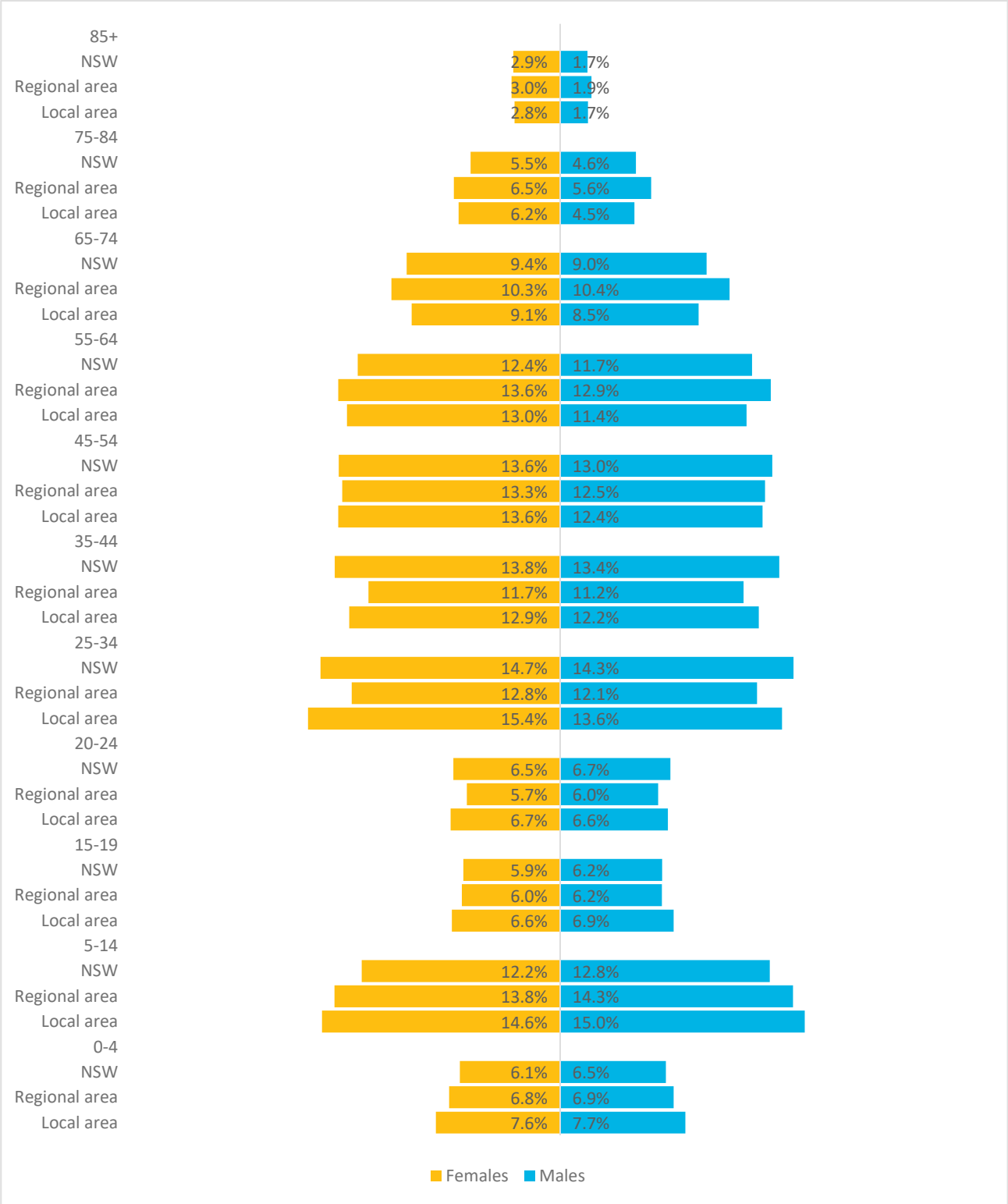
The population of the local area is slightly younger than the NSW average, with 21.6% of the people in the local area being younger than 15 and 15.9% of people being older than 65. The median age for the local area is 36 years, compared to the median age of 40 for the regional area and NSW's median age of 38. The age group distribution and median age in the area of social influence is presented in Table B.4.

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

Age group	Local area	Regional area	NSW
0-4 years	7.4%	8.0%	3.3%
5-14 years	14.2%	14.1%	12.3%
15-19 years	6.3%	5.4%	6.0%
20-24 years	6.4%	5.4%	6.5%
25-34 years	14.0%	15.5%	14.3%
35-44 years	12.1%	12.8%	13.4%
45-54 years	12.5%	12.6%	13.1%
55-64 years	11.8%	12.8%	11.9%
65-74 years	8.5%	7.5%	9.1%
75-84 years	5.2%	4.4%	5.0%
85 years and older	2.2%	1.5%	2.2%
Median age of persons 2016	36	40	**38**

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

The distribution of males and females in the local area is relatively even, with slightly more females than males in the age groups above 30 years of age, and noticeably more females in the 65 years and above age groups. Both the age and sex distributions of the local area and regional area are consistent with NSW trends (see Figure B.3).



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

Figure B.3 Population distribution, 2016

B.3.2 Aboriginal and Torres Strait Islander population

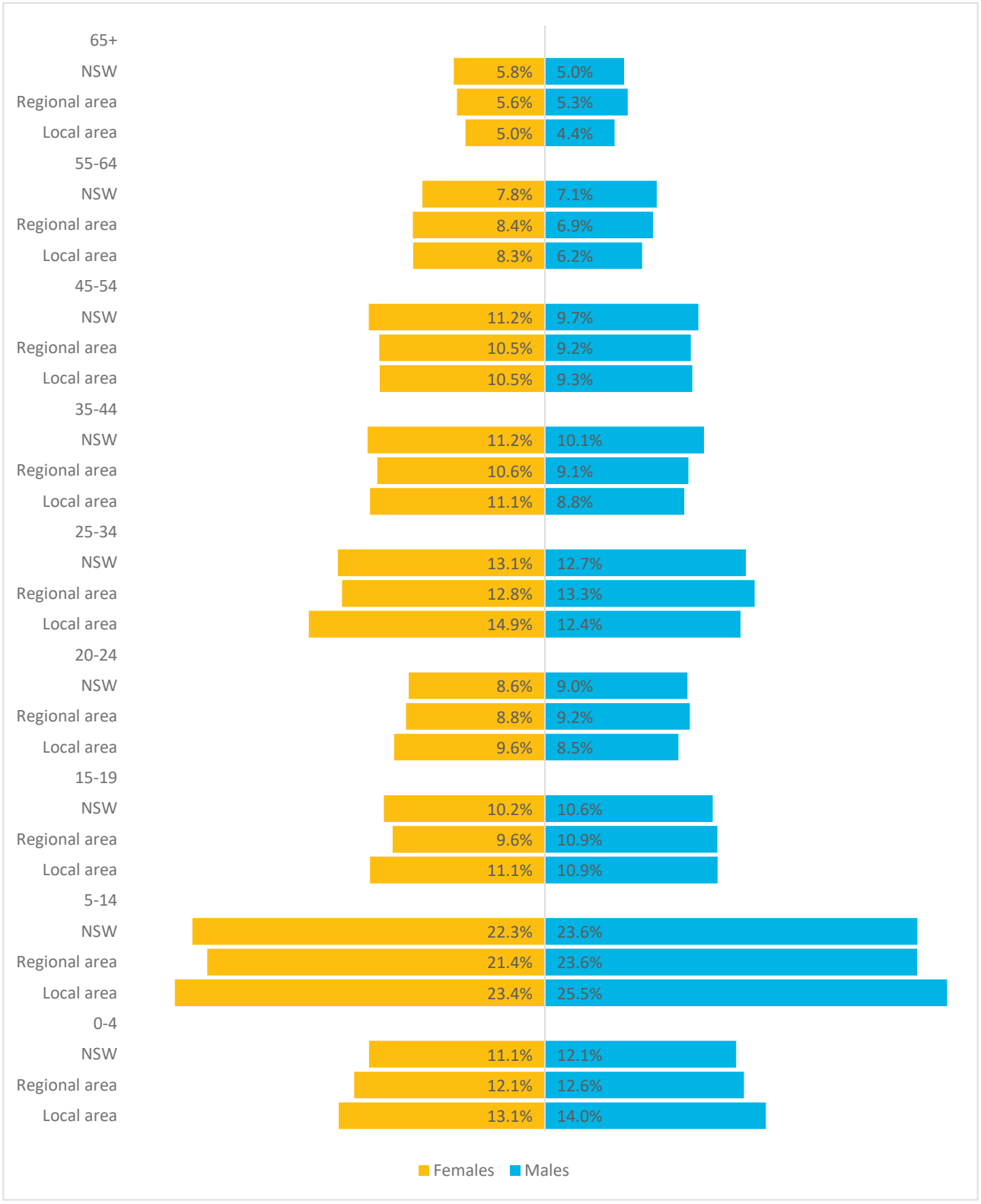
In the local area, 14.6.8% of the population identified as Aboriginal and/or Torres Strait Islander. In the regional area the percentage of the population who identified as Indigenous is even higher at 15.1%. Aboriginal and/or Torres Strait Islanders constitute a substantially higher proportion of the population in the area of social influence compared to the population of NSW (3.0.%) (see Table B.5).

Table B.5 Indigenous persons as percentage of population, 2016

Location	Indigenous population
Local area	14.6%
Regional area	15.1%
NSW	**3.0%**

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

Overall, the distribution of Indigenous males and females in the local area is quite even. The largest demographic in the Indigenous community in the local area are children (aged 5–14 years). The distribution of Indigenous and non-Indigenous populations within the area of social influence is presented in Figure B.4.



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

Figure B.4 Population distribution of Aboriginal and/or Torres Strait Islander persons, 2016

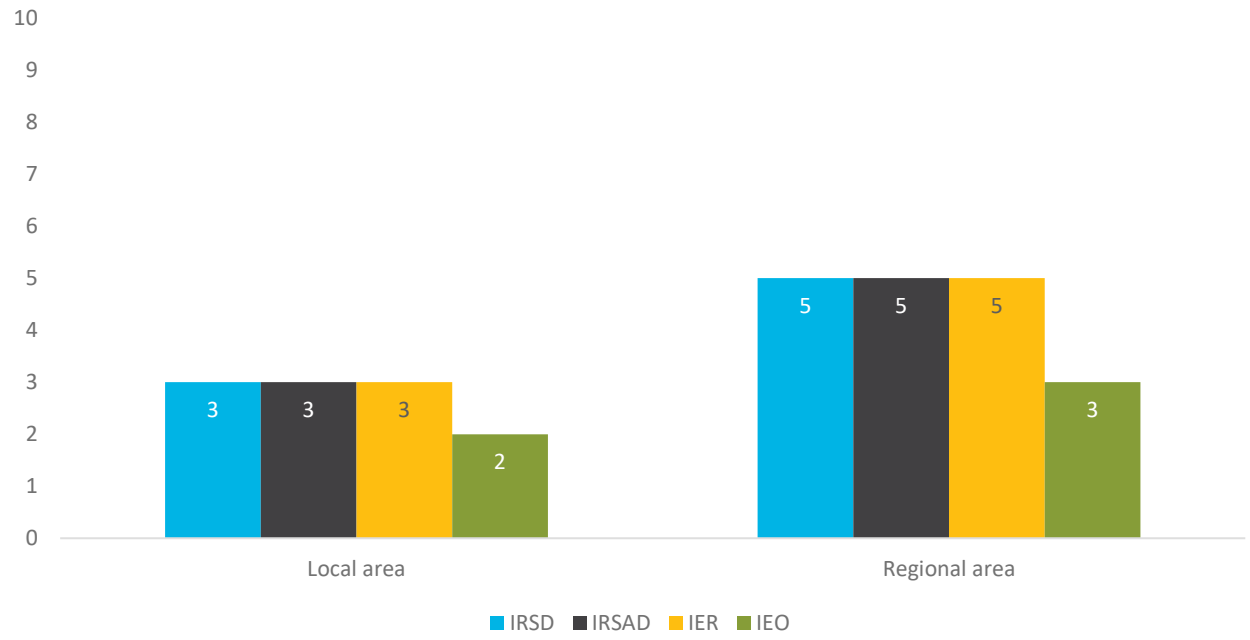
The Indigenous population's smaller proportion of the population (both males and females) living beyond 65 years aligns with the lower life expectancy among Indigenous Australian's nationally (AIHW 2019), with much of this gap is explained by the relationships between increased socioeconomic disadvantage, worsened mental health outcomes, and related health risk behaviours, including greater proportions of smoking and alcohol use (AHMAC 2017).

B.3.3 Vulnerable groups

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 are given a decile number of 1 and the highest 10% of areas are given a decile number of 10. The rankings of the communities within the study area for each of the four summary measures are demonstrated in Figure B.5.



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

Figure B.5 SEIFA deciles in the area of social influence, 2016

According to the 2016 SEIFA, the communities in the local area and regional area experience higher levels of disadvantage compared to other suburbs, LGAs, and regions in NSW, as each of the identified communities are in the 5th or lower decile for all indices (ie in the bottom 50% of communities in NSW in terms of advantage). The local area in particular experiences higher levels of disadvantage and lower levels of advantage as it is ranked within the 3rd or lower decile for each index (ie in the bottom 30% of communities in NSW).

The local area falls within decile 3 for the IRSD, IRSAD, and IER. This means that there are likely many houses with low income (see Table B.28), many people with no qualifications/many people in low skill occupations (see Table B.27), few households with high incomes and in skilled occupations, and many houses paying low rent in the area (see Table B.32). A decile ranking of 2 for the IEO also indicates that the local area may have fewer people with qualifications or in highly skilled occupations.

B.3.4 Cultural diversity

In the local area most of the population is Australian born (84.5%). Other common countries of birth were England (1.0%), India (0.9%), New Zealand (0.8%), Nepal (0.5%), and the Philippines (0.5%). This cultural diversity is similar to that of the regional area (84.2%) but is significantly less diverse than the NSW average of 65.5% of the population born in Australia.

The local area also has a much higher instance of generational Australians with 76.8% of the people of the local area having had both parents born in Australia, compared to 45.4% of people in NSW.

In the local area, 87.6% of people only speak English at home, while only 6.8% of people speaking a language other than English. The regional area has a comparable dynamic, with 87.2% of people speaking only English at home and 5.1% of persons speaking a non-English language. NSW averages reveal more language diversity with 68.5% of people throughout NSW speaking only English at home, and 26.5% of persons speaking a language other than English.

Cultural diversity in the area of social influence is presented in Table B.6.

Table B.6 Country of birth, 2016

	Born in Australia	Both parents born in Australia	English only spoken at home	Speak a non-English language at home
Local area	84.5%	76.8%	87.6%	6.8%
Regional area	84.2%	76.3%	87.2%	5.1%
NSW	**65.5%**	**45.4%**	**68.5%**	**26.5%**

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

B.3.5 Disability

In the local area, 5.8% of persons are in need of assistance with a profound or severe disability, who are defined as needing help or assistance in one or more of the three core activities of self-care, mobility and communication because of a long term health condition (lasting 6 months or longer), a disability (lasting 6 months or longer), or old age. This number is slightly higher than the NSW average of 5.4% of people.

Core activity need for assistance in the area of social influence is demonstrated in Table B.7.

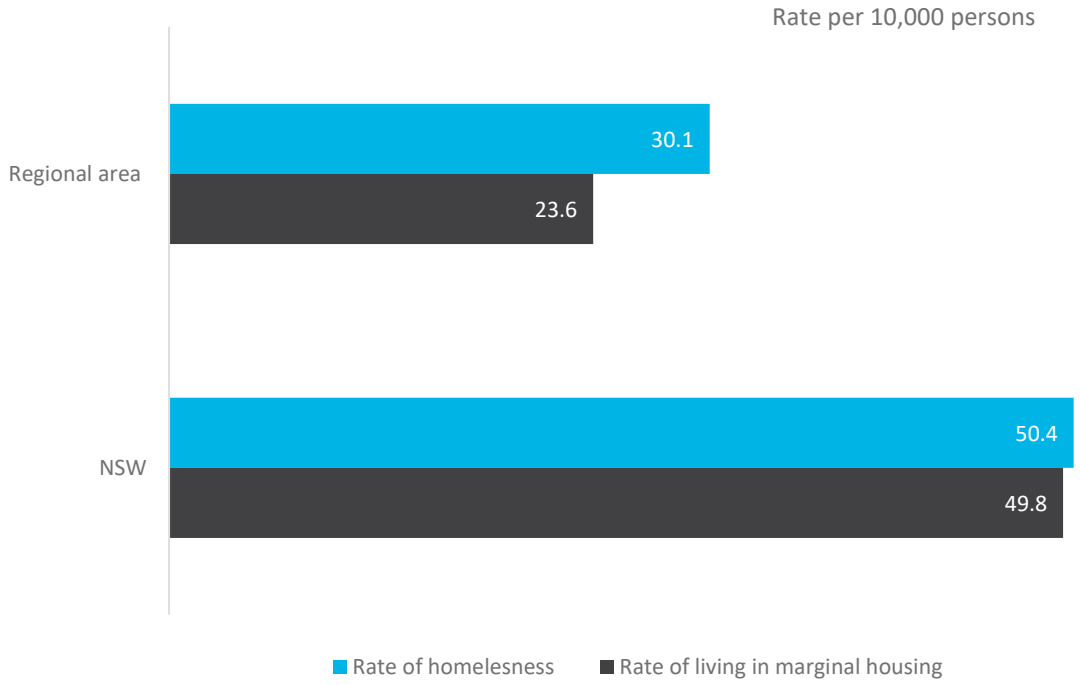
Table B.7 Core activity need for assistance, 2016

	Has need for assistance	Does not have need for assistance
Local area	5.8%	86.5%
Regional area	6.0%	84.1%
NSW	**5.4%**	**87.7%**

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

B.3.6 Homelessness

According to the 2016 Census estimations on homelessness, rates of homelessness in the regional area are significantly lower than NSW rates, with a rate of 30.1 homeless persons per 10,000 persons in regional area. Rates of homelessness in the wider region slightly higher than in the regional area but are still lower than NSW averages. Rates of homelessness in the area of social influence are presented in Figure B.6.



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

Figure B.6 Rates of homelessness per 10,000 persons, 2016

B.4 Community culture, values, and aspirations

The vision for the local area as stated by the Dubbo Regional Council is "creating community for today and tomorrow". The local community places value on:

- progressiveness: seeking change and information and challenging the status quo;
- sustainability: balancing environmental responsibility, social equity, and opportunities for growth;

- working together: partnering to deliver better outcomes, investing in people, and fostering positive experience; and
- integrity: valuing and acknowledging the cultures within the Dubbo Regional Council area and pursing open and ethical practices (DRC 2020c).

B.4.1 Indigenous 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 (EMM 2020e).

The Project area falls within the Aboriginal language group boundary of the *Wiradjuri*; which can be broken down into two sub-groups, the *Dundullimal* and *Tubba-Gah* for the Dubbo area (Bowdler 1983). Norman Tindale (1974) recorded the Wiradjuri country as stretching from the Wongaibon country in the west, and Wailwan country in the north, which he recorded as stretching between Gilgandra, Nyngan, Brewarrina and down to Coonabarabran. Later Horton (1994) recorded Wiradjuri country as extending to the Gilgandra, Nyngan and Bogan River areas. Within the Wiradjuri language group, there is some debate on the extent of the Tubba-Gah and Dundullimal territories. Many argue that the Tubba-Gah country extends from the eastern margin of the Macquarie River, to the Talbragar River in the south and to Eulomogo creek, and the location of the project area, in the north while the Dundullimal occupy the western side of the Macquarie River. However, many Aboriginal communities argue that the Tubba-Gah country also encompasses the western side of the Macquarie River (Grounds 1983; Helton 1995; Koettig 1985) (EMM 2020e).

A detailed ethno-historical overview is available in the ACHA in Appendix G of the EIS.

B.4.2 Non-Indigenous history

The area today known as Dubbo first became an interest to John Oxley in 1818 due to its potential for grazing and agriculture. However, it was not until 1849 that it was declared the 'Village of Dubbo' by the European population.

In 1846, the increasing number of settlers in the area prompted the government to establish legal infrastructure, including a courthouse, police station, and lock-up in the Dubbo area. In 1847, there were four buildings within the settlement – a constable's residence, courthouse and lock-up, a store, and an inn. The Victorian gold rush in the 1860s resulted in additional Population growth due to increased north–south trade. In February 1881, the railway extension of the main western railway from Wellington to Dubbo was formally opened. In 1872 Dubbo was named a town (Heritage Australia 2011).

Dubbo officially became a city in 1966 (Heritage Australia 2011). Today, Dubbo is a regional hub and trade centre servicing Central and Western NSW. Dubbo hosts a multitude of industries and businesses, including health care, social assistance, manufacturing, construction, tourism, accommodation, food services and agriculture.

B.5 Social Infrastructure

B.5.1 Childcare and early learning

There are 29 approved childcare services in the study area. Of these, 28 are centre-based care providers and 1 is a family day care scheme. The services range from long day care, preschool, and outside of school hours care (OSHC). The childcare services available in the study area are presented in Table B.8.

Table B.8 Childcare services, 2019

Service name	Type	Service	Number of places
Imagine Childcare and Preschool Blueridge Park	Centre-Based Care	Long day care	124
Buninyong Preschool	Centre-Based Care	Preschool	25
Carlton House Child Care Centre and Preschool	Centre-Based Care	Long day care/OSHC	84
Central Before School After School and Vacation Care	Centre-Based Care	OSHC	60
Community Kids Dubbo Early Education Centre	Centre-Based Care	Long day care	40
Dubbo & District Preschool Kindergarten	Centre-Based Care	Preschool	100
Dubbo Christian Preschool	Centre-Based Care	Preschool	37
Dubbo Early Learning Centre	Centre-Based Care	Long day care	103
Dubbo Family Day Care	Family Day Care	Long day care	Maximum 45 educators within service
Dubbo West Preschool Inc	Centre-Based Care	Preschool	88
Dubbo West Public School Preschool	Centre-Based Care	Preschool	20
East Dubbo After School and Vacation Care	Centre-Based Care	OSHC	75
Goodstart Early Learning Dubbo- Baird Drive	Centre-Based Care	Long day care	90
Goodstart Early Learning Dubbo- Cobra Street	Centre-Based Care	Long day care	75
Goodstart Early Learning Dubbo- Wheelers Lane	Centre-Based Care	Long day care/OSHC	76
Gowrie NSW Dubbo Early Education and Care Centre	Centre-Based Care	Long day care/OSHC	73
Little Learners Long Day Care and Preschool	Centre-Based Care	Long day care	83
MAGS Before and After School and Vacation Care	Centre-Based Care	Preschool/OSHC	75
North Dubbo After School and Vacation Care	Centre-Based Care	OSHC	61
Orana Heights After School Care Inc	Centre-Based Care	OSHC	60
Peppercorn Child Care Centre (Dubbo)	Centre-Based Care	Long day care	99
Playmates Cottage Childcare Centre	Centre-Based Care	Long day care	47
Rainbow Cottage Child Care Centre Dubbo	Centre-Based Care	Long day care	58
Red Gum Child Care Centre Dubbo	Centre-Based Care	Long day care	100
Regand Park Early Childhood Education Centre	Centre-Based Care	Long day care	87
South Dubbo After School and Vacation Care	Centre-Based Care	OSHC	75
St Laurence's After School Care	Centre-Based Care	OSHC	60
Stepping Stones Early Learning Centre Dubbo	Centre-Based Care	Long day care	90
West Dubbo After School and Vacation Care	Centre-Based Care	OSHC	61

Source: ACARA 2020

B.5.2 Education

At the time of the 2016 Census, there were 11,925 persons attending an educational institution in Dubbo (preschool, infants/primary, secondary, technical, or further educational institution, university or other tertiary institution, and other type of educational institution). The largest proportion of persons attending an educational institution in Dubbo were attending primary school, followed by secondary school. The attendance trends for Dubbo and Dubbo SA3 are consistent with NSW trends, excluding the proportion of persons attending university or another tertiary institution, which is much lower (7.1% in Cobar vs 16.2% in NSW). This indicates a lack of higher education resources in the study area. Table B.9 demonstrates educational institution attendance in the study area, as a percentage of total attendees.

Table B.9 Educational institution attendance, 2016

	Preschool	Infants/primary	Secondary	Technical or further educational institution	University or other tertiary institution	Other type of educational institution
Type of education institution attending 2016 (% of persons attending an educational institution)						
Local area	7.4%	29.8%	20.4%	8.2%	7.1%	25.4%
Regional area	6.6%	27.8%	19.5%	6.6%	5.7%	32.4%
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 are 11 primary schools, 4 secondary schools, 4 combined schools, and 3 special schools in the local area. Of these, 13 are government schools and 9 are non-government schools. The schools range from kindergarten/preparatory to Year 12, with multiple schools with over 500 student enrolments. Information on primary and secondary schools in the study area is presented in Table B.10.

Table B.10 Schools in the study area, 2018

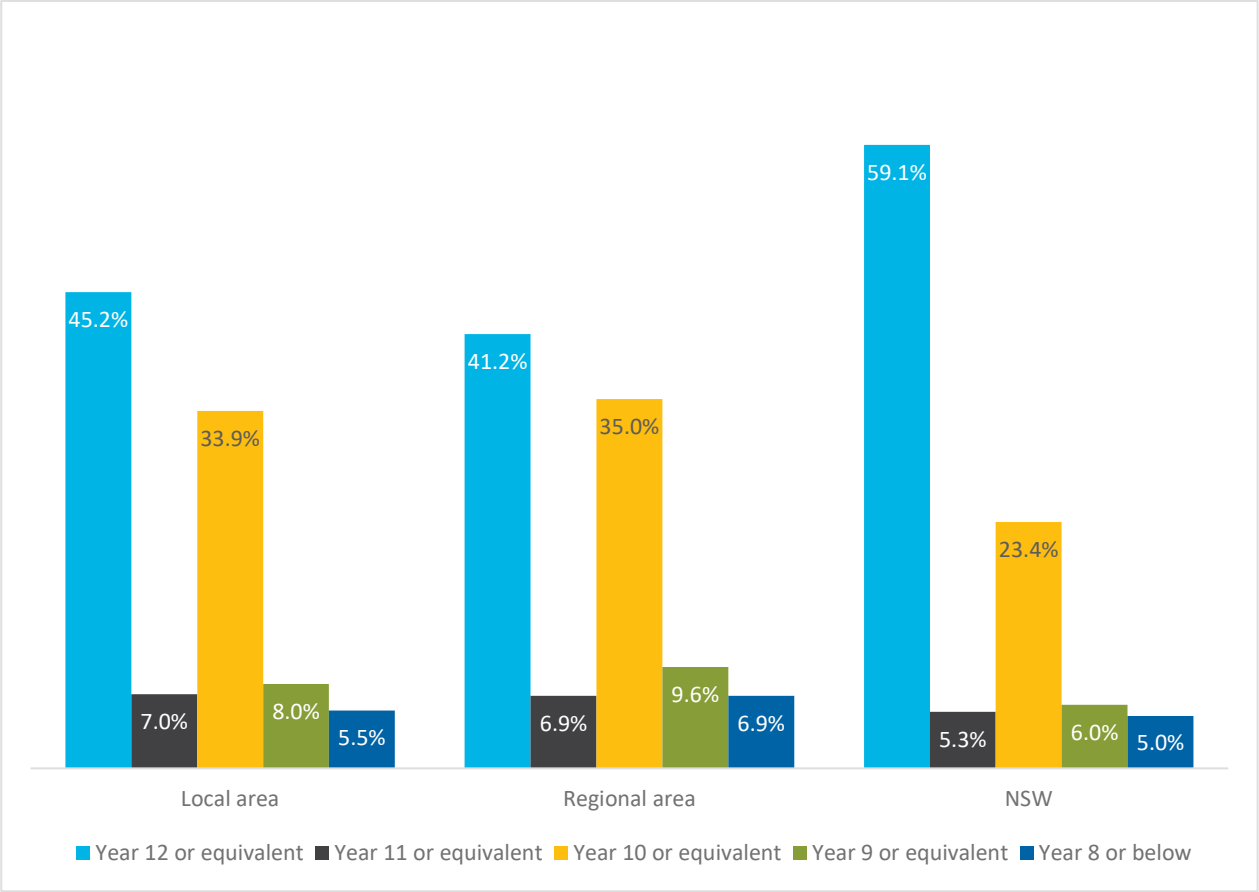
School	Sector	Type	Year range	Student enrolments	Full-time equivalent teaching staff
Buninyong Public School	Government	Primary	U, K-6	344	24.8
Burrabadine Cornerstone Christian School	Non-government	Primary	K-6	34	2
Central West Leadership Academy	Non-government	Combined	3-6	20	2
Dubbo Christian School	Non-government	Combined	K-12	522	43.3
Dubbo College Delroy Campus	Government	Secondary	U, 7-10	519	49.8
Dubbo College Senior Campus	Government	Secondary	U, 10-12	506	53.3
Dubbo College South Campus	Government	Secondary	U, 7-10	694	57.3
Dubbo North Public School	Government	Primary	U, K-6	250	18
Dubbo Public School	Government	Primary	U, K-6	541	50.1

Table B.10 Schools in the study area, 2018

School	Sector	Type	Year range	Student enrolments	Full-time equivalent teaching staff
Dubbo School of Distance Education	Government	Combined	P-12	396	105.8
Dubbo South Public School	Government	Primary	U, K-6	667	41.1
Dubbo West Public School	Government	Primary	U, P-6	372	22.5
Lincoln School	Government	Special	U	24	10.1
Macquarie Anglican Grammar School	Non-government	Combined	K-12	523	36.3
Mian School	Government	Special	U	23	6.9
Orana Heights Public School	Government	Primary	U, K-6	637	40.6
St John's Catholic Primary School	Non-government	Primary	K-6	425	20.2
St John's College	Non-government	Secondary	7-12	971	31.8
St Laurence's Catholic Primary School	Non-government	Primary	K-6	210	12.3
St Mary's Catholic Primary School	Non-government	Primary	K-6	403	19.3
St Pius X Catholic Primary School	Non-government	Primary	K-6	203	11.2
Wambangalang Environmental Education Centre	Government	Special	-	NA	2

Source: myschool.edu.au

The highest level of schooling completed within the study area is presented in Figure B.7. Each of the communities in the study area have a significantly smaller proportion of persons who have completed Year 12 or equivalent, with a higher percentage of their population completing Year 10 and 11 or equivalent.



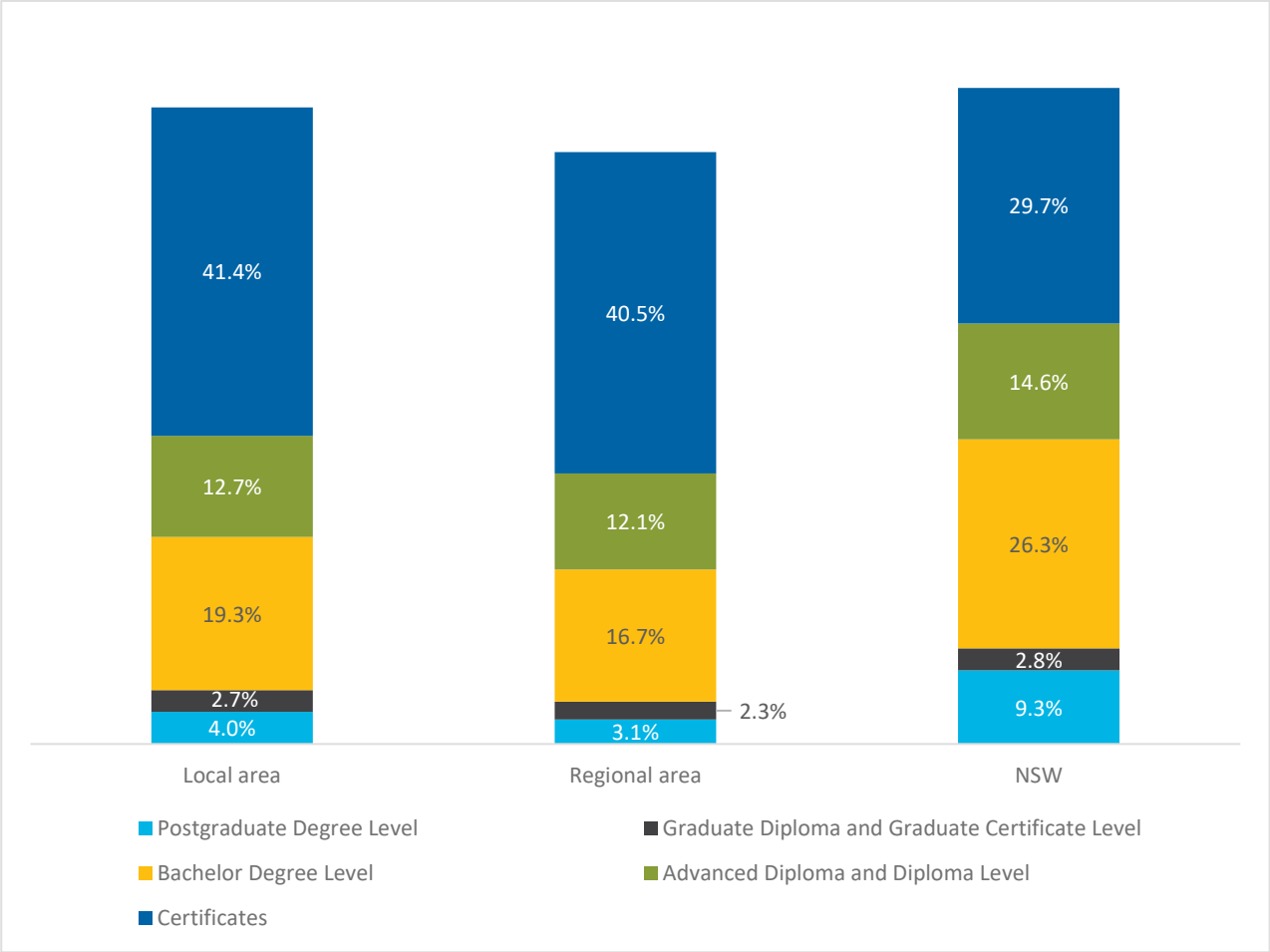
Source: ABS 2016, Census of Population and Housing: General Community Profiles

Figure B.7 Highest level of schooling completed for persons 15 years and older, 2016

ii Tertiary

There are 4 tertiary institutions in the local area. Charles Sturt University has campuses across NSW, with the Dubbo campus being opened in 1999. The Dubbo campus offers a wide range of both undergraduate and postgraduate study programs, including Indigenous study programs and courses (Charles Sturt University 2019). The University of Sydney School of Rural Health has campuses in both Dubbo and Orange where Sydney Medical School students are able to pursue a placement aimed towards developing medical skills relevant to rural, regional, and remote regions of Australia (University of Sydney 2019). TAFE Western Institute and Western College also operate in Dubbo, offering vocational education and training in a variety of fields (TAFE NSW 2020; Western College 2019).

Of those people with a non-school qualification throughout the study area, most have a certificate qualification, followed by a Bachelor-level degree. The distribution of non-school degrees is fairly consistent throughout the study area (see Figure B.8).



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

Figure B.8 Proportion of persons over 15 with a non-school qualification, 2016

B.5.3 Health services

The local area is located within the Western NSW Local Health District.

i Hospital service

There are 3 hospitals in the local area: Dubbo Hospital, Dubbo Private Hospital, and Lourdes Hospital and Community Health Service.

Dubbo Hospital is a large regional hospital with emergency department, and offers a range of hospital services, including an acute renal dialysis unit, alcohol and drug unit, coronary care unit, diabetes unit, intensive care unit, maintenance renal dialysis unit, neonatal intensive care unit, obstetric services, oncology unit, paediatric service, and psychiatric unit, well as an Aboriginal Health Chronic Care Service and Aboriginal Welfare Service out of their facility.

The details of the closest hospitals in the area of social influence are presented in Table B.11.

Table B.11 Hospitals in the immediate and wider study area, 2020

Hospital	Location	Type	Number of beds
Dubbo Hospital	Dubbo	Public	100-199
Dubbo Private Hospital	Dubbo	Private	53
Lourdes Hospital	Dubbo	Public	34

Source: myhospitals.gov.au

As shown in Table B.12, the total number of admissions to Dubbo Hospital has increased 17.7% since 2011, representing an average annual increase of 2.9%. This is consistent with the population growth trends in Dubbo. The category with the most admissions has consistently been medical emergencies, followed by surgical non-emergencies. Admissions for childbirth has remained relatively stable from 2011–2017, while admissions for Rehabilitation and palliative care have decreased.

Table B.12 Number of admissions to Dubbo Hospital, 2011–2017

Admission category	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Childbirth	1,205	1,238	1,188	1,173	1,192	1,228
Surgical (emergency)	1,493	1,528	1,500	1,395	1,501	1,512
Surgical (non-emergency)	2,787	3,016	2,769	2,798	3,101	3,110
Medical (emergency)	6,271	6,548	5,618	5,566	5,684	7,563
Medical (non-emergency)	5,854	5,872	5,891	6,337	6,586	6,916
Other acute (emergency)	184	216	239	259	301	297
Other acute (non-emergency)	1,353	1,466	1,587	1,554	1,570	1,952
Mental health	375	364	432	408	430	450
Rehabilitation	38	27	<5	0	0	0
Palliative	<5	7	<5	6	0	0
Other subacute and non-acute	5	14	<5	0	0	<5
Total	**19,565**	**20,296**	**19,224**	**19,496**	**20,365**	**23,028**

Source: myhospitals.gov.au

ii Primary health care services

a General practitioner services

Dubbo Community Health Centre is the main community health centre in Dubbo. It offers a wide range of services including child and family health services, dietetics, audiology, women's health services, psychology, and counselling services (Healthdirect Australia 2020). According to the National Health Services Directory (Healthdirect Australia 2020) there are 11 other listed General Practitioners (GPs) in the local area. GP practices in the local area are summarised in Table B.13.

Table B.13 GP practices in the local area

Suburb	Service name	GP services	Community health services	Aboriginal health services	Mental health services	Maternal, child, and family health services	Aged care services	Other specialist services
Dubbo	Dubbo Family Doctors	✓	x	✓	x	✓	x	x
	South Dubbo Family Medical Practice	✓	x	x	x	x	x	x
	Western Plains Medical Centre	✓	x	x	x	x	x	✓
	DubboCare Family Practice	✓	x	x	x	x	x	✓
	Bawrunga Medical Centre - Dubbo	✓	✓	✓	x	x	x	✓
	Macquarie Valley Family Practice	✓	x	x	✓	✓	✓	✓
	Dubbo Medical and Allied Health Group - Bultje Street	✓	x	✓	✓	✓	x	✓
	Dubbo Regional Aboriginal Medical Service	✓	x	✓	x	✓	x	x
	Gumtree Medical	✓	x	x	x	✓	x	x
	Delroy Park Medical Centre	✓	x	✓	x	✓	x	✓
	Dubbo Medical and Allied Health Group - Delroy Park	✓	x	✓	✓	✓	x	✓
	Dubbo Community Health Centre	✓	✓	x	x	✓	x	✓

Source: Healthdirect Australia 2020

b Other health services

Dubbo is one of four regional centres in the Western NSW Primary Health Network (PHN). As such, a significant number of specialist and other health services are located in the local area. Residents both within and outside of the local area access these services.

There are a range of mental health services and facilities available in the local area. The services operating within the local area include general psychology services, as well as mental health services that specialise in child and youth mental health services, adult mental health, senior mental health, Aboriginal and Torres Strait Islanders services, addiction mental health services, and mental health services for persons managing a debilitating disease or illness. Some of these services are stand-alone psychology services, while others operate out of hospitals, general practices, and offer home visits. Services specialising in mental health include:

- Barranminya, Sub Acute Mental Health Unit, Dubbo;
- Dubbo Community Mental Health & Drug & Alcohol Services;
- Dubbo Primary & Community Health Centre;
- Lifeline Central West, Dubbo; and
- headspace Dubbo.

B.5.4 Emergency services

There is 1 police station, 1 ambulance station, and 2 fire and rescue stations in the local area. The local area also has a local State Emergency Service (SES) unit and is home to the SES Western Zone Headquarters. In addition to these, the Ambulance Service of NSW Western Regional Office and the Orana-Mid Western Police District office are in the local area. The number of available emergency services in the local area is shown in Table B.14.

Table B.14 Emergency services

Police station	Ambulance station	Fire and rescue station	SES
1	1	2	2

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

B.5.5 Transport infrastructure

Transportation in the local area is facilitated through the provision of three movement networks: a public transport network, a bike/walk network, and a road network.

i Modes of travel

The vast majority of people in the local area travel to work by car, either as the driver or as a passenger (80.8%), with only 0.5% of the population using public transport. This is significantly higher than the NSW average of 64.6%, indicating a less comprehensive public transport system. Modes of travel in the area of social influence are summarised in Table B.15.

Table B.15 Modes of travel, 2016

	By car (as driver, as passenger)	By public transport (train, bus, ferry, tram)
Local area	80.8%	0.5%
Regional area	74.9%	0.6%
NSW	**64.6%**	**16.0%**

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

ii Public transport

Public transport is available in the local area, with a bus service that runs 6 days a week. Dubbo Buslines includes a School Student Transport Scheme that enables eligible students to travel to and from school under no cost to them or their families (Buslines Group 2019).

There is also a taxi service that consists of 21 radio cabs and 3 accessible cabs, and 5 companies that offer bike, bus, and car rental (TfNSW 2019a).

A regional train runs daily from Sydney Central Station to Dubbo and reverse, stopping at 15 stations in between, going through Lithgow, Bathurst, and Orange on its route. In addition to the train, there are 4 regional coach lines leaving from Dubbo Station that travel to Bourke, Lightening Ridge, Orange, and Broken Hill Town, stopping multiple station in between (TfNSW 2019b).

iii Road network

B84, Golden Highway, runs from the local area to Newcastle in the east, running through Merriwa, Jerrys Plains, and Mount Thorley. Route A32, Mitchell Highway, connects the local area to Adelaide to the west, moving through Cobar and Broken Hill in NSW, and Burra in South Australia. Route A39, the Newell Highway runs through the local area, connecting it to Toowoomba in Queensland to the north east and Melbourne to the south west.

As of May 2019, the NSW Government is investing $195 million in five major road projects in Dubbo (NSW Government Roads and Maritime Services 2019). These include:

1. LH Ford bridge strengthening—started November 2018
2. Newell Highway upgrade, West Dubbo—started April 2019
3. Mitchell Highway (Cobra Street) and Fitzroy Street interception upgrade—starting late 2019
4. Newel Highway and Mitchell Highway Intersection upgrade—starting late 2019
5. New Dubbo Bridge—starting late 2021

iv Air

Dubbo City Regional Airport is located about 10 km from the central district of the local area. Dubbo City Regional Airport offers multiple domestic services from the local area through Qantas, Fly Corporate, Fly Pelican, Regional Express, and Air Link. Flights are available to the major centres of Sydney, Brisbane, and Melbourne. Other destinations include Newcastle, Broken Hill, Walgett, Bourke, and Lightening Ridge.

Transport options to and from the airport include taxis and rental car services.

The closest major international airport to the local area is Sydney Kingsford Smith Airport.

B.5.6 Community services

Many community services are provided by the Dubbo Regional Council, including childcare services, public health, cultural development, Aboriginal and Torres Strait Islander services, youth services, and social planning (Dubbo Regional Council 2020b; Ask Izzy 2020). The Dubbo Neighbourhood Centre and the Department of family and community services are two notable community service providers in Dubbo.

There are also numerous multifaceted service provision organisations with locations in the local area. These organisations provide a range of services for various demographics, including programs and services for youth, seniors, homeless persons, and specialised Aboriginal and Torres Strait Islander services, among others. Organisations include Uniting, the Salvation Army, Anglicare, Mission Australia, and St Vincent de Paul Society.

Additional information related to selected services is presented in the sections below. Many of the services are multi-service providers and do not solely provide for one service sector.

i Aboriginal community services

There are multiple providers of Indigenous services in the local area. These services offer a wide range of Aboriginal services in including health services, housing and accommodation services, child and family services, elder services, and other support services. Aboriginal community services in the local area are summarised in Table B.16.

Table B.16 Aboriginal community service in the local area, 2020

Suburb	Service	Aboriginal health services	Housing and accommo-dation services	Education programs	Child and family services	Youth services	Elder services	Counselling services	Justice, represent-ation, and cultural services	Self-help and support services
Dubbo	NSW Aboriginal Housing Office (AHO), Western Region	x	✓	x	x	x	x	x	x	x
	DCJ Housing Services, Dubbo Office	x	✓	x	x	x	x	x	x	x
	Multi-Purpose Allira Gathering Association	✓	✓	x	✓	x	✓	x	x	x
	Grey Street Hostel	x	✓	x	x	x	x	x	x	x
	Uniting, Out-of-Home Care Western & Ngurambang	x	✓	x	✓	✓	x	x	x	✓

Table B.16 Aboriginal community service in the local area, 2020

Suburb	Service	Aboriginal health services	Housing and accommo-dation services	Education programs	Child and family services	Youth services	Elder services	Counselling services	Justice, represent-ation, and cultural services	Self-help and support services
	Dubbo Local Aboriginal Land Council	x	✓	x	x	x	x	x	✓	✓

Source: askizzy.com.au

ii Child and family services

In the local area, Uniting, Centacare, and Connecting Community Services provide the most comprehensive child and family services in the local area. Each of these providers offer education services, counselling and mediation services, and other child and family support services. Other providers within the local area also offer parenting skills development services and childcare services. Child and family services in the local area are described in Table B.17.

Table B.17 Child and family services in the local area, 2020

Suburb	Service	Education Services	Counselling and mediation services	Parenting skills development	Childcare services	Child and family support services
Dubbo	Multi-Purpose Allira Gathering Association	x	x	x	✓	✓
	Mission Australia Community Services, Dubbo	x	✓	x	x	✓
	Uniting, Out-of-Home Care Western & Ngurambang	x	x	x	x	✓
	Interrelate, Dubbo	x	✓	✓	x	✓
	Uniting, Child & Family Services	✓	✓	✓	x	✓
	Centacare Bathurst, Dubbo	✓	✓	✓	x	✓
	Connecting Community Services	✓	✓	x	✓	✓

Source: askizzy.com.au

iii Youth services

The youth service providers in the local area each offer youth support services of various types. Uniting provides the most comprehensive youth services, including counselling services, youth crisis services, recreational activities, and other youth support services.

Youth in Dubbo can also become actively involved in the community as part of the Dubbo Youth Council, which provides a means for the youth of the city to have direct input into the Dubbo Regional Council (Dubbo City 2019). The Youth Council consisting of 25 youth aged 12–25 meets monthly to provide input on Council driven plans and projects that affect youth in Dubbo.

Youth community services in the local area are presented in Table B.18.

Table B.18 Youth community services in the local area, 2020

Suburb	Service	Counselling services	Referral services	Youth crisis services	Recreational activities	Youth support services
Dubbo	Mission Australia Community Services, Dubbo	✓	✓	x	x	✓
	Uniting, Child & Family Services	✓	x	✓	✓	✓
	Connecting Community Services	✓	x	x	x	✓
	headspace, Dubbo	✓	x	x	✓	✓
	Dubbo Police & Community Youth Club (PCYC)	x	x	x	✓	x
	Uniting, Reconnect Program	x	x	x	x	✓

Source: askizzy.org.au

iv Housing and homelessness services

Housing and homelessness services in the local area are largely provided by Orana Support Service, which offers multiple forms of accommodation services (ie transitional, crisis, and short-term) as well as housing and homelessness support services. Both the NSW Aboriginal Housing Office and Mission Australia Community Services provide housing referrals and referral services. Public and community housing services are also available from DCJ Housing Services and Compass Housing Services. Housing and homelessness services in the local area are summarised in Table B.19.

Table B.19 Housing and homelessness services in the local area, 2020

Suburb	Service	Public and community housing services	Transitional accommod-ation	Crisis accommod-ation	Short-term accommod-ation	Housing referrals and referral services	Support services
Dubbo	Orana Support Service	x	✓	✓	✓	x	✓
	NSW Aboriginal Housing Office (AHO), Western Region	x	x	x	x	✓	✓
	DCJ Housing Services, Dubbo Office	✓	x	x	x	x	✓
	Compass Housing Services	✓	x	x	x	x	x
	Multi-Purpose Allira Gathering Association	x	x	x	x	x	✓
	Grey Street Hostel	x	x	x	✓	x	x
	Mission Australia Community Services, Dubbo	x	x	x	x	✓	✓

Source: askizzy.org.au

v Employment services

In the local area, multiple employment services offer employment placements in addition to training services, apprenticeship and traineeship services, and employment support services. Employment services in the local area are summarised in Table B.20.

Table B.20 Employment services in the local area, 2020

Suburb	Service	Employment placement	Training services	Apprenticeship and traineeship services	Employment support services
Dubbo	Sureway Employment & Training, Dubbo	✓	x	x	x
	Joblink Plus, Dubbo	✓	✓	✓	✓
	VERTO, Dubbo	x	✓	✓	✓
	Aboriginal Employment Strategy, Western NSW	✓	x	✓	x

Table B.20 Employment services in the local area, 2020

Suburb	Service	Employment placement	Training services	Apprenticeship and traineeship services	Employment support services
	Regional Enterprise Development Institute	✓	✓	x	✓

Source: askizzy.org.au

vi Disability services

Disability services in the local area are offered through a variety of providers. These services range from social and community participation services, advocacy services, employment services, and other disability support services. Challenge Community Services and Westhaven Support Services are the primary disability service providers in the local area. A summary of disability services in the local area is presented in Table B.21.

Table B.21 Disability services in the local area, 2020

Suburb	Service	Social and community participation	Advocacy support services	Employment services	Disability accommodation	Disability support services
Dubbo	Compass Housing Services	x	x	x	✓	x
	Life Without Barriers	x	x	x	✓	✓
	Challenge Community Services	✓	x	✓	✓	✓
	Westhaven, Support Services	✓	x	✓	✓	✓
	Sureway Employment & Training, Dubbo	x	x	✓	x	x
	Joblink Plus, Dubbo	x	x	✓	x	x
	Challenge Community Services, Dubbo Day Programs	✓	✓	✓	✓	✓
	breakthru, Dubbo	x	x	✓	x	✓
	Advanced Personnel Management	x	x	✓	x	✓

Source: askizzy.org.au

vii Aged services

Most aged service providers in the local area offer services in the form of care facilities and living units for aged persons. These facilities include both high-level and low-level care options, services for residential respite care, and self-contained independent living units.

The Connecting Community Services hosts a weekly senior citizens social group featuring games and refreshments as an opportunity to socialise with others in the community. They also organise a Senior's Week program each year as well as day trips and concerts throughout the year.

Aged care services in the local area are presented in Table B.22.

Table B.22 Aged services in the local area, 2020

Suburb	Service	High-level care facility	Low-level care facility	Residential respite care	Self-contained independent living	Aged care support services
Dubbo	Multi-Purpose Allira Gathering Association	x	x	x	x	✓
	Orana Gardens	✓	✓	✓	✓	x
	RFBI Dubbo Masonic Village	✓	✓	✓	✓	x
	Opal	✓	✓	✓	✓	x
	Catholic Healthcare, St Mary's Villa Dubbo	✓	✓	✓	✓	x
	Catholic Healthcare, Holy Spirit Dubbo	✓	✓	✓	✓	x
	Connecting Community Services	x	x	x	x	✓

Source: askizzy.org.au

viii Domestic violence services

Domestic violence services in the local area are mainly provided by multi-service providers. Available services include counselling services, referral services, prevention and intervention services, court advocacy and legal services, and domestic violence support services. Domestic violence services in the local area are summarised in Table B.23.

Table B.23 Domestic violence services in the local area, 2020

Suburbs	Service	Drug and alcohol services	Counselling services	Referral services	Prevention and intervention service	Court advocacy and legal services	Domestic violence support services
Dubbo	Connecting Community Services	x	✓	✓	x	x	✓
	Western Women's Domestic Violence Court Advocacy Service	x	x	x	x	✓	x
	Centacare Bathurst, Dubbo	x	✓	x	✓	x	x
	Dubbo Base Hospital	x	✓	x	x	x	✓
	Western NSW Community Legal Centre	x	x	x	x	✓	x

Source: askizzy.org.au

B.5.7 Arts and cultural community facilities

The local area boasts abundant arts and cultural sites and facilities. Both residents and visitors can attend art exhibitions and galleries and theatre and musical performances. The local area is also home to the Dubbo Observatory which allows attendees to observe the night sky and its phenomena using telescopes.

There are also facilities and programs in the local area dedicated to local history and heritage. The Western Plains Cultural Centre houses both an art gallery and museum with regular changing exhibits.

There are 5 venues throughout the local area that are suitable for hosting large and small conferences and meetings.

The arts and cultural sites and facilities in the local area are summarised in Table B.24.

Table B.24 Arts and cultural sites and facilities, 2020

Name	Indigenous cultural sites/facilities	Theatres	Open air performance centre	Art gallery/art studio	Music facilities	Museum and historical centre	Observatory	Library	Community centres and halls
Local area	✓	✓		✓	✓	✓	✓	✓	✓
Regional area	✓	✓		✓	✓	✓	✓	✓	✓

Source: DRC 2020b

B.5.8 Recreation services

The local area offers a wide range of parks facilities, natural areas, and sporting facilities. There are multiple botanic and city gardens throughout the local area which display diverse flora and provide green spaces for both residents and visitors to enjoy. There are also numerous nature reserves, lookouts, and campgrounds and caravan parks within the local area.

The Taronga Western Plains Zoo includes a safari-style zoo circuit which visitors can explore via car, foot, bicycle, or cart. The zoo is home to hundreds of rare and endangered animals.

There are a variety of sporting facilities within the local area, including sporting fields and grounds, netball courts, a skate park, a cycle track, golf clubs, equestrian grounds, and an aquatic centre.

The recreational and sporting facilities within the local area are presented in Table B.25.

Table B.25 Parks and sporting facilities in the local area, 2020

Parks facilities		Sporting facilities	
Facility	**Count**	**Facility**	**Count**
Community parks	25	Netball courts	20
Botanic and city gardens	3	Cricket pitches	22
Dog parks	3	AFL/rugby/touch fields	25
Nature reserves	18	Hockey fields	2
Lookouts	6	Tennis courts	17
Campgrounds and caravan parks	4	Skate parks	1
Zoo	1	BMX track	2
		Track and field facilities	1
		Soccer field	23
		Softball fields	4
		Croquet club	2
		Cycle track	1
		Aquatic centres	1
		Golf clubs and driving ranges	2
		Equestrian grounds	4

Source: DRC 2020b

B.6 Workforce and income

B.6.1 Employment

The unemployment rate in the local area is 5.5%, which is lower than both the regional area and NSW. The youth unemployment rate in the local area (14.4%) is higher than the rate within the regional area (11.5%) and NSW (13.6%). The unemployment and labour force participation rates are presented in Table B.26.

Table B.26 Unemployment and labour force participation rates, 2016

	Unemployment rate	Youth unemployment rate	Labour force participation rate (15 years and older)
Local area	5.5%	14.4%	62.4%
Regional area	6.2%	11.5%	57.2%
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 labourers, managers, and professionals. Occupations within the area of social influence are presented in Table B.27, with the top three occupations highlighted in each area.

Table B.27 Occupations, 2016

Occupation	Local area	Regional area	NSW
Managers	18.2%	16.5%	13.5%
Professionals	14.5%	13.7%	23.6%
Technicians and trades workers	12.5%	12.3%	12.7%
Community and personal service workers	13.5%	11.9%	10.4%
Clerical and administrative workers	11.3%	9.7%	13.8%
Sales workers	6.0%	6.5%	9.2%
Machinery operators and drivers	10.9%	11.5%	6.1%
Labourers	18.2%	16.5%	8.8%

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

B.6.2 Income

The weekly median personal income and median household income in the local area is $691 and $1,341, respectively. Individual weekly income is slightly higher than the NSW average, while median weekly household income is lower. Median incomes in the area of social influence are presented in Table B.28.

Table B.28 Median income, 2016

	Local area	Regional area	NSW
Individual (median income $ weekly)	691	617	664
Household (median income $ weekly)	1,341	1,176	1,486

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

B.7 Housing and accommodation

B.7.1 Housing type and structure

In the local area, most private dwellings are separate houses (83.4%). This is also true of the regional area (87.4%). The proportion of unoccupied private dwellings in the study area reflects the proportion of NSW. Housing type and structure is presented in Table B.29.

Table B.29 Housing type and structure, 2016

	Local area	Regional area	NSW
Separate house	83.4%	87.4%	66.4%
Semi-detached, row or terrace house, townhouse	7.0%	4.6%	12.2%
Flat or apartment	8.5%	5.7%	19.9%
Other dwelling	0.7%	1.6%	0.9%
Total private dwellings	15,327	28,015	2,889,057
Total occupied dwellings	89.9%	88.0%	90.1%

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

In the local area, and in the regional area, most households are composed of families, followed by lone person households, and then group households. These are consistent with NSW trends (see Table B.30).

Table B.30 Household composition, 2016

Household type	Local area	Regional area	NSW
Family households	71.0%	69.9%	72.1%
Group households	3.3%	2.7%	4.2%
Lone person households	25.8%	27.3%	23.7%

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

B.7.2 Tenure

In the local area, most private dwellings are owned with a mortgage (34.3%). Although there is some slight variation in tenure compared to the regional area and NSW, the trends are relatively similar. Tenure within the area of social influence is presented in Table B.31.

Table B.31 Tenure (based on total private dwellings), 2016

	Local area	Regional area	NSW
Owned outright	28.9%	34.7%	32.2%
Owned with a mortgage	34.3%	31.3%	32.3%
Rented	32.7%	29.6%	31.8%

Table B.31 Tenure (based on total private dwellings), 2016

	Local area	Regional area	NSW
Other tenure	2.8%	1.2%	0.9%

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

B.7.3 Mortgage repayment and rent

Rent and mortgage repayments constitute a significant proportion of household costs. Both mortgage repayments and rent payments throughout the study area are substantially lower than NSW averages. Lower repayments can be indicative of greater levels of disadvantage within the area (see Table B.32).

Table B.32 Mortgage repayment and rent, 2016

	Local area	Regional area	NSW
Mortgage repayments (median mortgage repayments $ monthly)	1,517	1,365	1,986
Rent (median rent $ weekly)	265	220	380

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

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. Housing affordability in the area of social influence is demonstrated in Table B.33.

Table B.33 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 (%)
Local area	10.6%	5.1%
Regional area	9.0%	4.7%
NSW	12.9%	7.4%

Source: ABS 2016, Quickstats

As exhibited by the table above, there is a smaller proportion of household with rent and mortgage payments greater than or equal to 30% of their household income in the study area compared to NSW. This could be a result of the lower rent and mortgage repayments in the area of social influence, combined with slightly higher individual median income.

B.7.4 Housing and rental market trends

i Mortgage repayment and rent trends

Mortgage repayment growth trends in the local area generally reflect the growth trends of the regional area from 2011–2016. However, mortgage payments in the local area and regional area from 2011–2016 increased by a much larger proportion compared to NSW.

Median rent repayments in the local area increased a slower rate than in NSW from 2006–2016. However, median rent payments from 2011–2016 in the local area and regional area increased by a greater proportion compared to NSW. Mortgage and rent repayment growth trends in the area of social influence are presented in Table B.34.

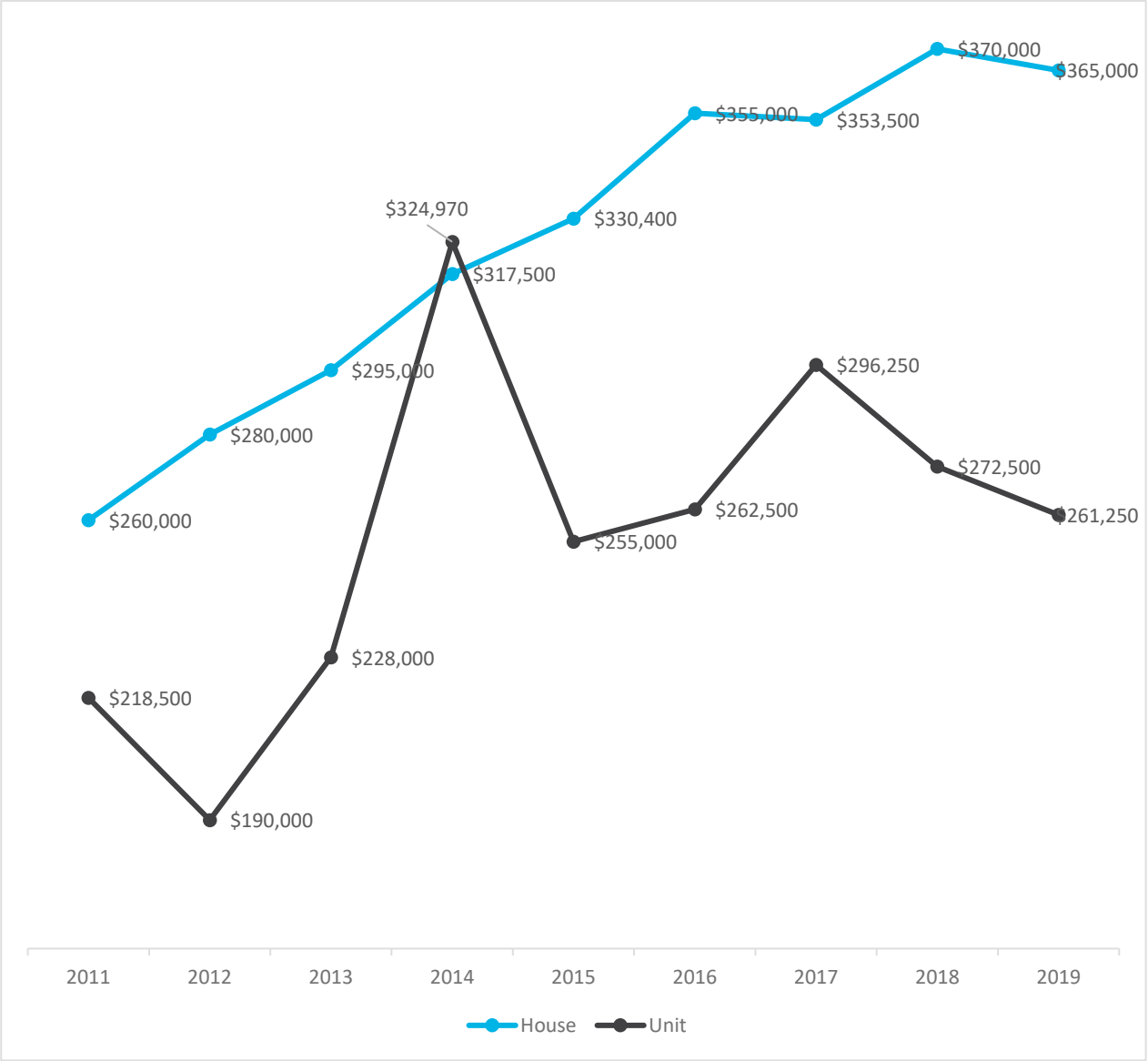
Table B.34 Mortgage repayment and rent growth rates, 2006–2016

	Mortgage payments		Rent payments	
	2006–2016	**2011–2016**	**2006–2016**	**2011–2016**
Local area	35.9%	3.0%	65.6%	32.5%
Regional area	--	5.0%	--	37.5%
NSW	**30.9%**	**0.4%**	**81.0%**	**26.7%**

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

ii Median property price trends

House prices in the local area have gradually increased from 2011–2019, while unit prices have been more volatile, with a spike in 2014, and decreasing prices since 2017. Housing price trends for the local area from 2011–2019 are demonstrated in Figure B.9.



Source: realestate.com.au/neighbourhoods

Figure B.9 Median property price trends for houses and units in the local area, 2011 – 2019

iii Residential vacancy rates

On 24 January 2020, there were 227 properties listed for sale and 136 properties listed for rental in the local area.

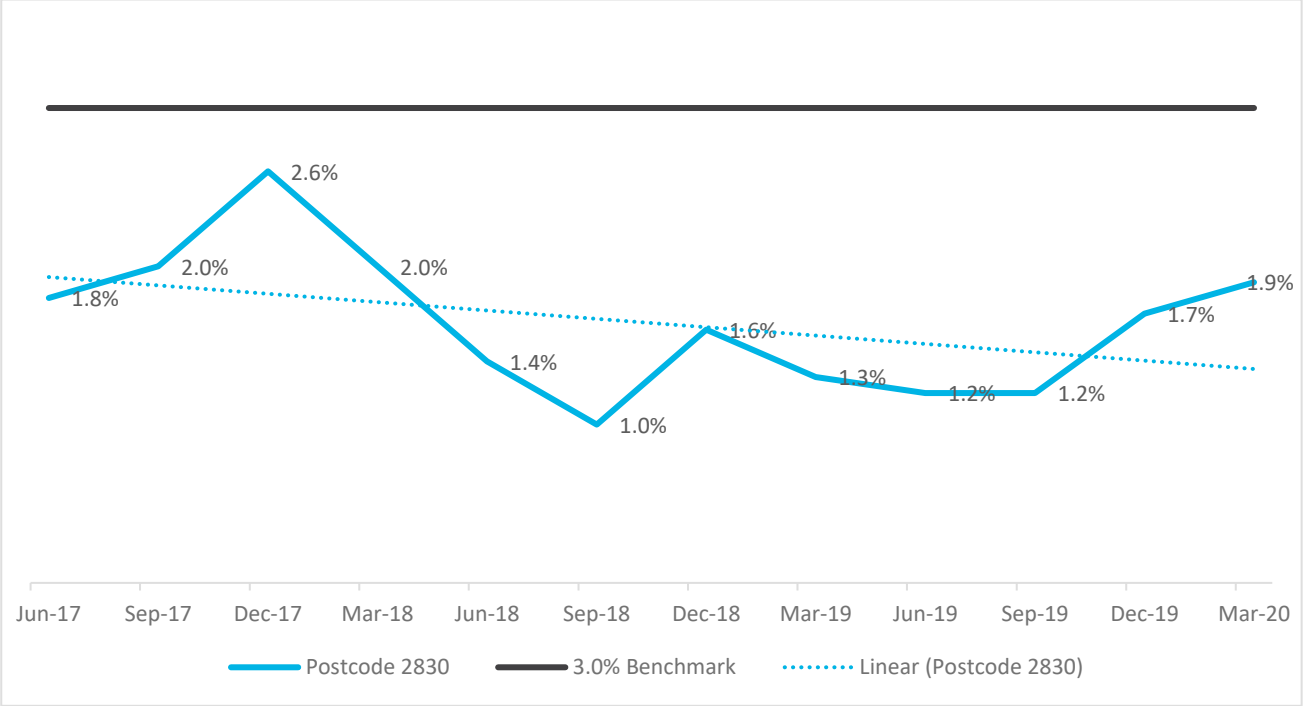
Table B.35 Properties for sale and rent in the local area, 22 January 2020

Suburb	Number of properties for sale	Number of properties for rent
Dubbo	227	136

Source: realestate.com.au/neighbourhoods

According to REINSW, 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% are low and indicate a tight rental market with an undersupply rental options while vacancy rates above 3% indicate an oversupply of rental options. A rental market with a vacancy rate of 3% is considered at equilibrium (Brewsters Property Group n.d.).

Overall, the residential vacancy rate in the local area has been decreasing since June 2017 with a low in September 2018. The residential vacancy rate for the local area has consistently remained below the 3.0% equilibrium benchmark and has remained under 2.0% since March 2018. This indicates a lack of available rental housing (undersupply). The residential vacancy rate trend for the local area (postcode 2830) is available in Figure B.10.



Source: SQM Research 2020, *Residential Vacancy Rates*.

Figure B.10 Residential vacancy rate trends, 2017–2019

B.7.5 Tourist accommodation

There is abundant tourist accommodation available in the local area. There are 70 listed tourist accommodation providers plus 20 vacation rental options (Google 2020). These accommodation options include hotels, motels, rental homes and apartments, bed and breakfasts, and caravan parks.

B.8 Local business and industry

In the local area, the top three industries of employment are healthcare and social assistance, retail trade, and education and training. As the local area is a regional centre that services the wider western NSW and Far West NSW regions, the higher proportion of persons working in healthcare and social services reflects the greater concentration of community and health services available in the local area. The industries of employment within the area of social influence are available in Table B.36, with the top three industries in each area highlighted.

Table B.36 Industry of employment, 2016

Industry	Local area	Regional area	NSW
Agriculture, Forestry and Fishing	2.5%	10.8%	2.1%
Mining	1.1%	1.1%	0.9%
Manufacturing	6.2%	5.1%	5.8%
Electricity, Gas, Water and Waste Services	1.3%	1.2%	0.9%
Construction	8.7%	7.6%	8.4%
Wholesale Trade	3.2%	2.7%	3.1%
Retail Trade	11.4%	10.1%	9.7%
Accommodation and Food Services	7.7%	6.9%	7.1%
Transport, Postal and Warehousing	4.1%	4.1%	4.7%
Information Media and Telecommunications	1.0%	0.8%	2.2%
Financial and Insurance Services	2.0%	1.5%	4.9%
Rental, Hiring and Real Estate Services	1.2%	1.0%	1.8%
Professional, Scientific and Technical Services	4.3%	3.8%	8.1%
Administrative and Support Services	2.8%	2.6%	3.5%
Public Administration and Safety	7.5%	7.5%	6.0%
Education and Training	9.4%	9.5%	8.4%
Health Care and Social Assistance	15.7%	14.5%	12.5%
Arts and Recreation Services	1.7%	1.3%	1.5%
Other Services	4.6%	4.2%	3.7%

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

In 2018, there were 5,127 registered businesses in the local area, none of which employed more than 200 employees. Of these registered businesses, 97.5% were classed as small businesses employing fewer than 20 people or non-employing. Additionally, 7.0% of businesses turned over $2 million or more, with most businesses operating within the $200k to $2 million range (see Table B.37 and Table B.38).

Table B.37 Registered businesses by employment size, 2018

Area	Non-employing	1–19 employees	20–199 employees	200+ employees	Total
Dubbo Regional LGA	60.1%	37.4%	2.5%	0.0%	5,127

Source: ABS 2019, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2014 to June 2018

Table B.38 Registered businesses by turnover range, 2018

Area	$0 to less than $50k	$50k to less than 200k	$200k to less than $2m	$2m or more	Total
Dubbo Regional LGA	21.5%	33.5%	38.0%	7.0%	456

Source: ABS 2019, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2014 to June 2018

Of the 5,127 registered businesses in the local area, 23.1% were in the agriculture, forestry, and fishing industry. The industry with the next highest proportion of registered businesses was construction (17.7%), followed by rental, hiring and real estate services (8.4%), and professional, scientific, and technical services (6.2%). Registered businesses by industry in the local area are presented in Table B.39.

Table B.39 Registered businesses by industry, 2018

Industry	No.	%
Agriculture, forestry, and fishing	1,183	23.1%
Mining	9	0.2%
Manufacturing	155	3.0%
Electricity, gas, water, and waste services	14	0.3%
Construction	907	17.7%
Wholesale trade	149	2.9%
Retail trade	281	5.5%
Accommodation and food services	225	4.4%
Transport, postal and warehousing	290	5.7%
Information media and telecommunications	7	0.1%
Financial and insurance services	314	6.1%
Rental, hiring and real estate services	433	8.4%
Professional, scientific, and technical services	317	6.2%
Administrative and support services	162	3.2%
Public administration and safety	13	0.3%
Education and training	52	1.0%
Health Care and Social Assistance	252	4.9%
Arts and recreation services	51	1.0%
Other services	292	5.7%
Total	**5,127**	

Source: ABS 2019, 8165.0—Counts of Australian Businesses, including Entries and Exists, June 2014 to June 2018

B.8.1 Tourism

Tourism is an increasingly important industry in the local area. The average number of total visitors per year in the regional area from 2015–2018 was 1,257 visitors. Of these visitors per year, most were domestic overnight visitors (629) followed by domestic day visitors (617) and international visitors (11). The primary reason for visiting was for holiday purposes. Tourism metrics in the regional are provided in Table B.40.

Table B.40 Tourism statistics in the regional area, 2018

	International	Domestic overnight	Domestic day	Total
Reason for visiting:				
Holiday ('000)	6	217	230	454
Visiting friends or relatives ('000)	3	176	119	298
Business ('000)	NA	148	NA	NA
Other ('000)	NA	88	191	NA
Total visitors ('000)	**11**	**629**	**617**	**1,257**
Stay metrics:				
Nights ('000)	228	1,398	--	1,626
Average stay (nights)	21	2	--	3
Average spend per trip ($)	1,067	395	181	296
Average spend per night ($)	51	178	--	160
Average spend (commercial accommodation) per night ($)	66	208	--	193

Source: TRA 2020.

B.9 Health and community well-being

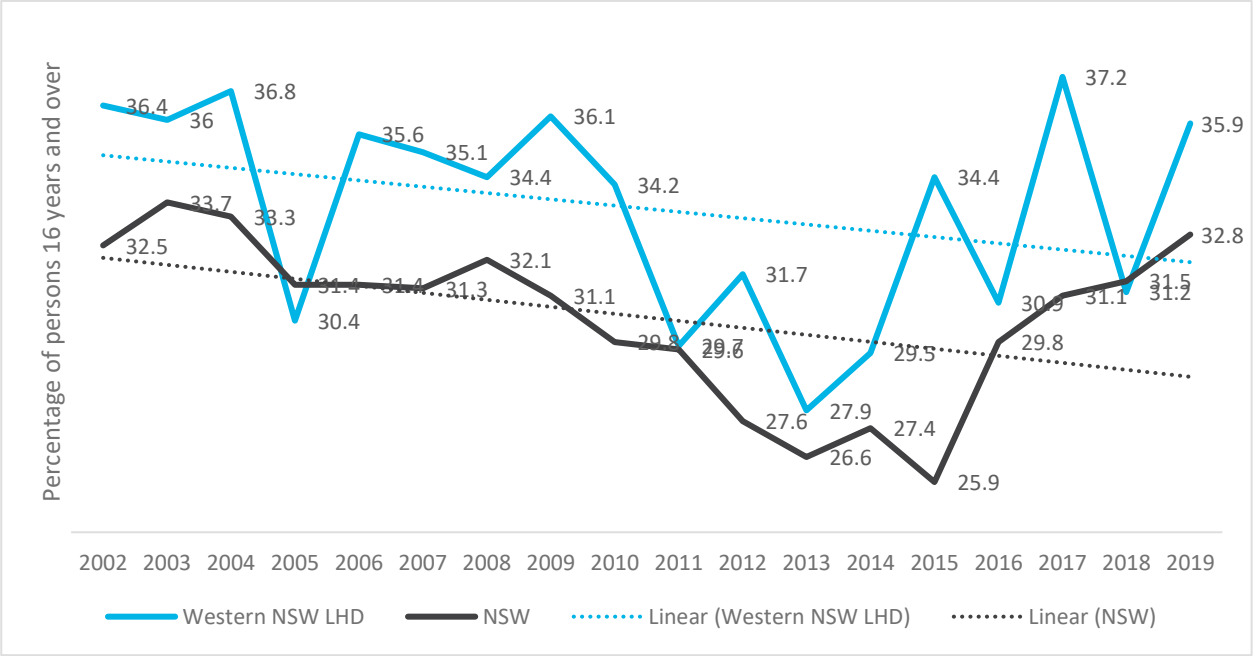
B.9.1 Community health

i Physical health

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

Trends for alcohol consumption at levels posing a long-term health risk were not available for the local or regional area. However, trends were available for Western NSW LHD which includes both the local and regional area. The percentage of persons aged 16 years and older who consume alcohol at levels posing a long-term health risk[3] is consistently higher in Western NSW LHD compared to the NSW proportion. Risky drinking in Western NSW LHD is also more volatile year-on-year compared to NSW, with greater increases and decreases. However, the trends demonstrate that the proportion of people who consume alcohol at levels posing a long-term health risk in the Western NSW LHD is decreasing at a similar rate to NSW.

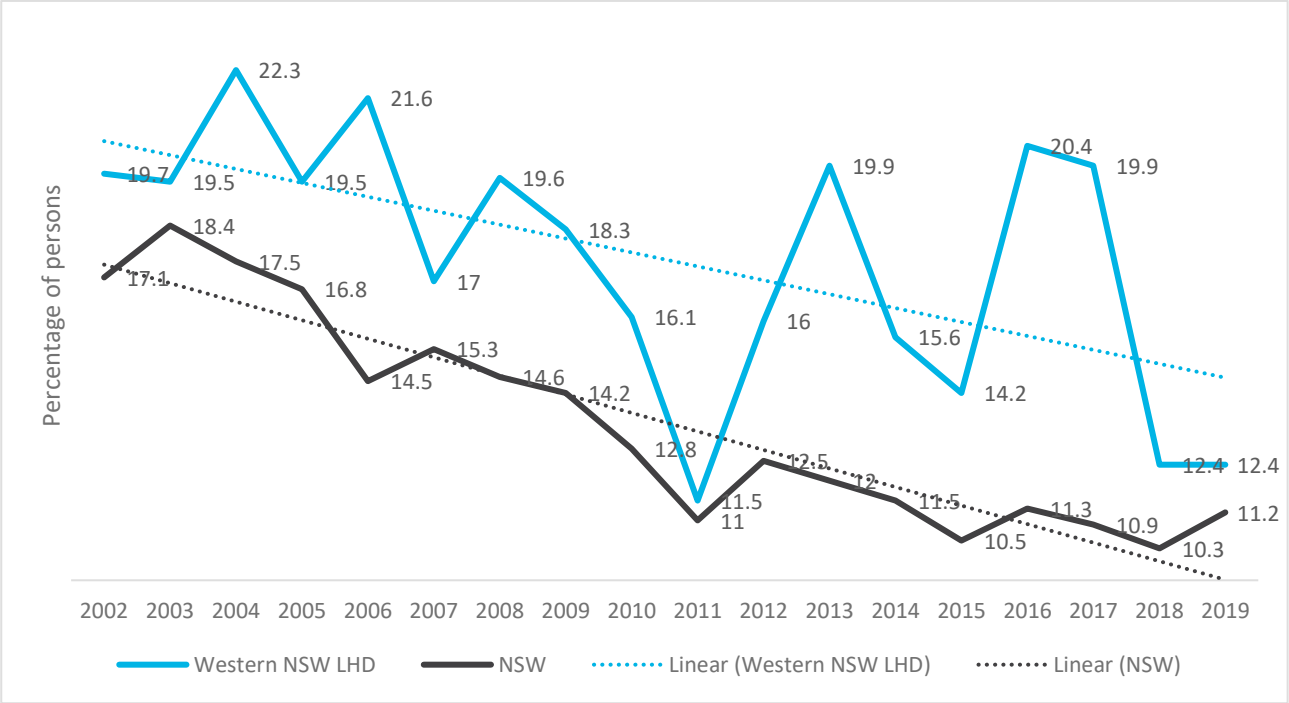
[3] High risk drinking is defined as the consumption of more than 2 standard drinks per day.



Source: Ministry of Health 2020, *Health Statistics NSW*

Figure B.11 Alcohol consumption at levels posing a long-term health risk (proportion of persons aged 16 years and older), 2002–2019

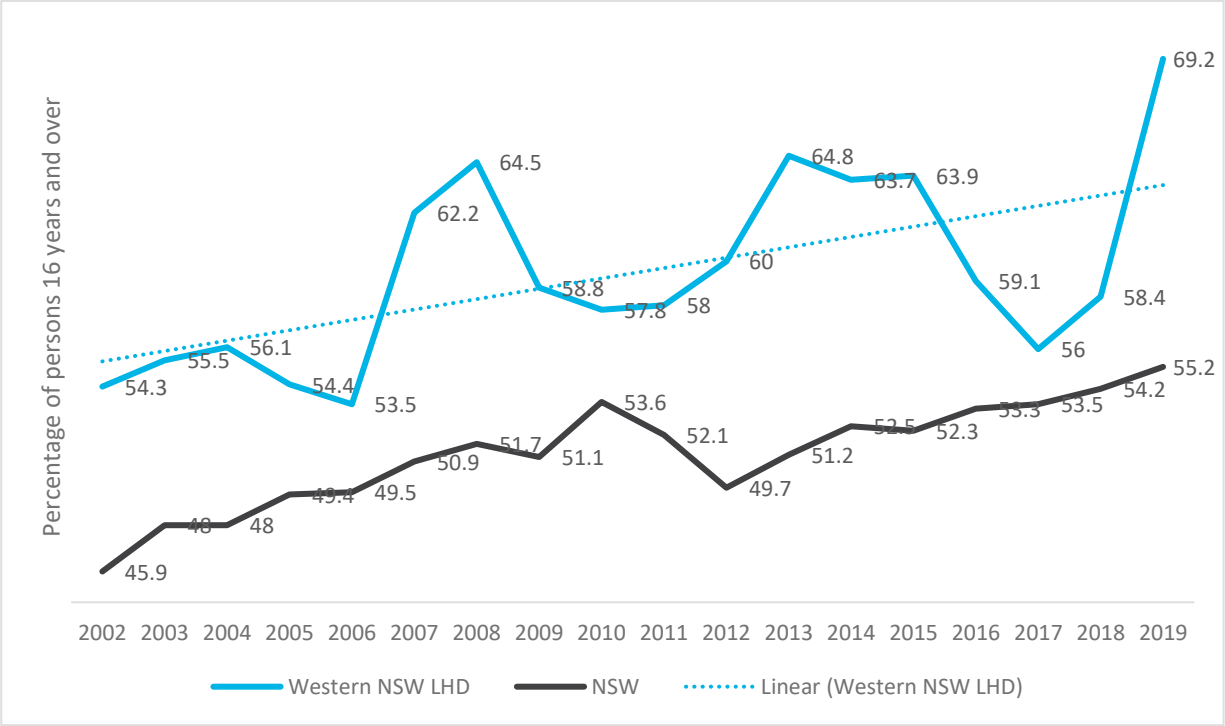
The percentage of persons who smoke in Western NSW LHD were also consistently above the NSW average from 2002–2019. Although the percentage of smokers has been greater in Western NSW LHD compared to NSW, with greater variability in the proportion of smokers each year, the overarching trends are decreasing at a similar rate (see Figure B.12).



Source: Ministry of Health 2020, *Health Statistics NSW*

Figure B.12 Daily smoking in adults (proportion of persons), 2002–2019

There has been a much higher rate of overweight and obesity among the Western NSW LHD population compared to NSW). Trends can be identified through self-reported data at the LHD level regarding people reporting as either overweight or obese. The data indicates that, whilst the Western NSW LHD rates are slightly above those seen throughout NSW, the overarching trend is comparable to NSW (Figure B.13).



Source: Ministry of Health 2020, *Health Statistics NSW*

Figure B.13 Overweight or obese adults (proportion of persons aged 16 years and older), 2002–2019

Trend data for prevalence of asthma in the Western NSW LHD indicates that asthma has been more prevalent in the Western NSW LHD compared to the whole of NSW from 2002–2019 (Ministry of Health 2019). Approximately 19.3% of adults within Western NSW LHD reported prevalence of asthma in 2019 compared to 11.5% of adults across NSW.

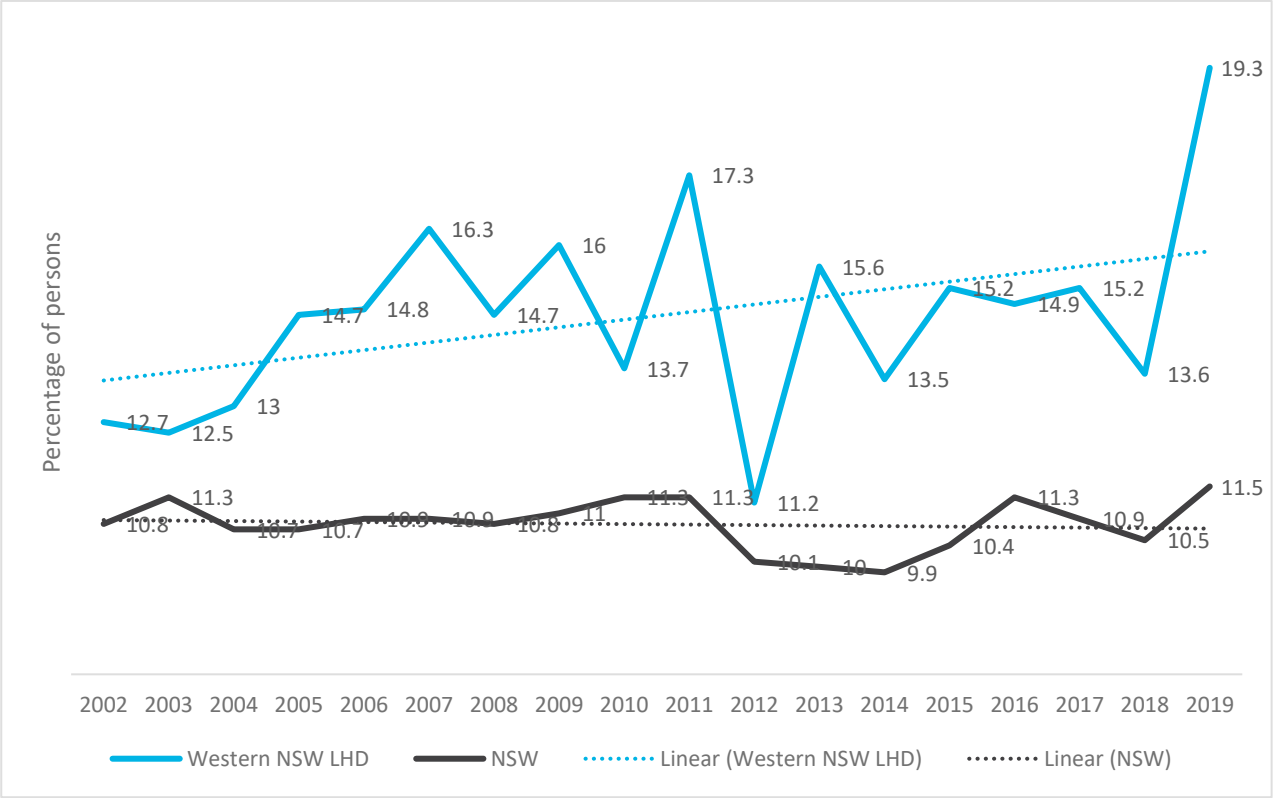
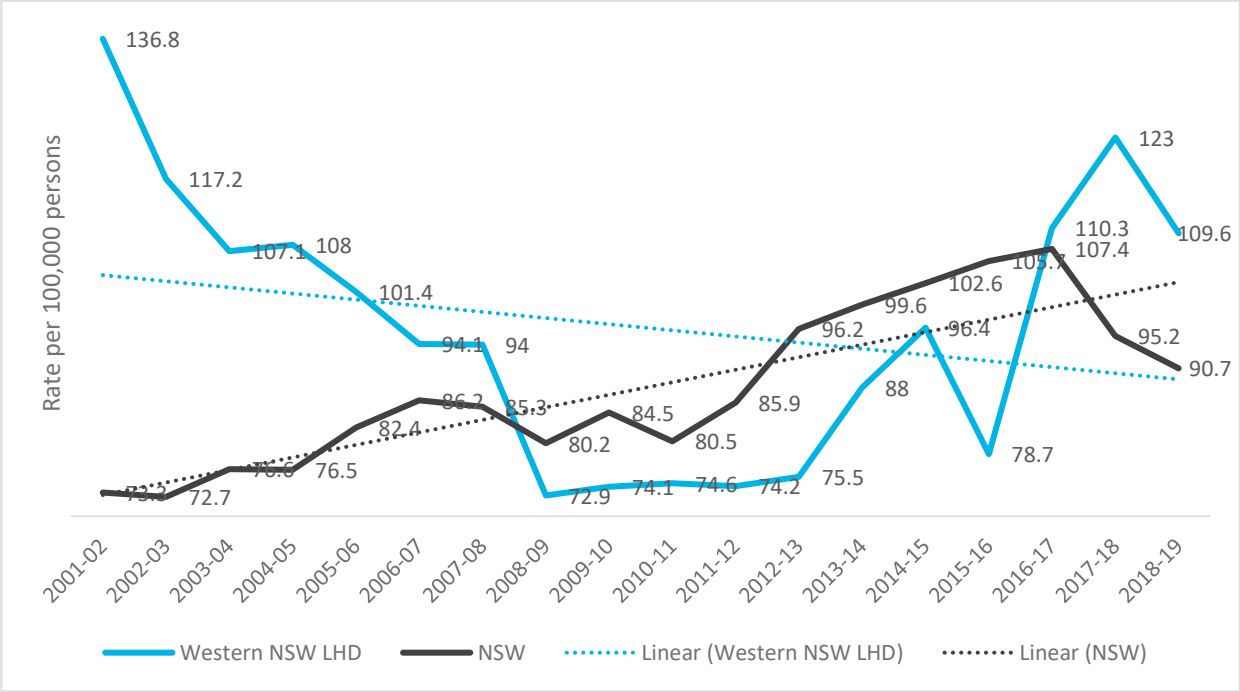


Figure B.14 Prevalence of asthma (proportion of persons 16 years and older), 2002–2019

Although the data indicates that the Western NSW LHD community experiences a lower level of physical health compared to NSW, the health trends do not indicate any significant increases in physical health indicators specific to the Western NSW LHD compared to NSW.

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 Western NSW LHD have differed significantly to intentional self-harm hospitalisations trends for NSW. From 2001–2002 to 2008–2009, the rate of intentional self-harm hospitalisations per 100,000 population in Western NSW LHD decreased significantly. However, the rate has generally been increasing since 2009–2010, with a significant spike from 2015–2016 to 2016–2017. The trend for NSW has generally been increasing since 2001–2002, with more recent decreases beginning 2016–2017. Data for intentional self-harm hospitalisations is presented in Figure B.15.



Source: Ministry of Health 2020, *Health Statistics NSW*

Figure B.15 Intentional self-harm hospitalisations (rate per 100,000 persons of all ages), 2001–2002 to 2018–2019

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.

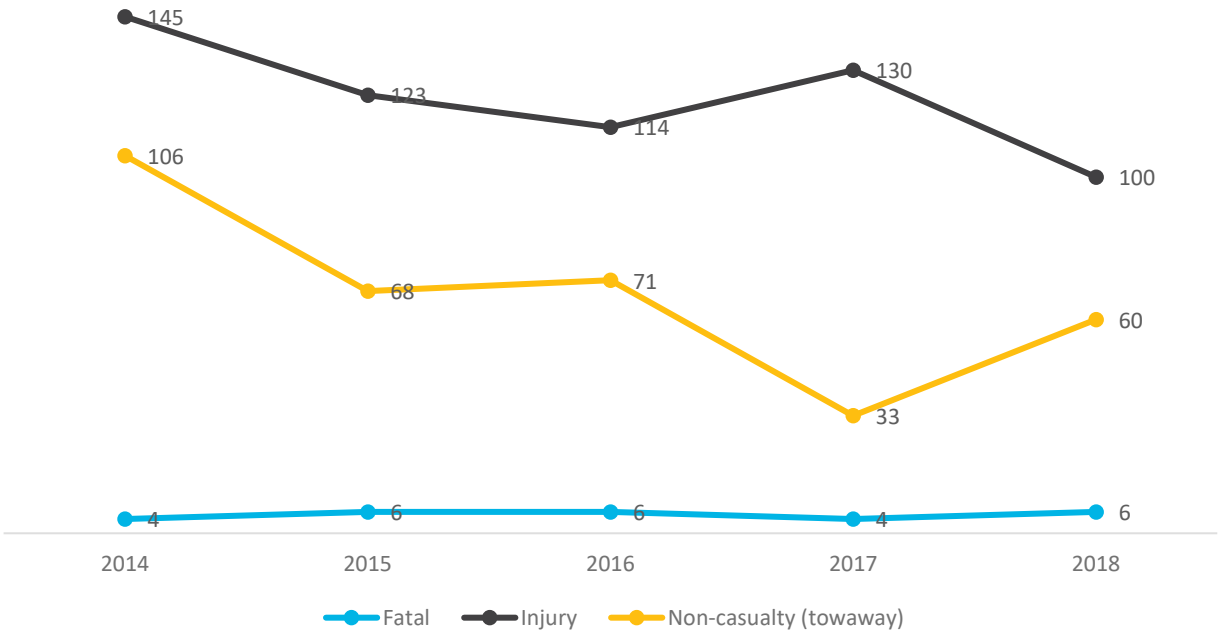
The trend data is only available at the LHD level and indicates that levels of psychological distress rated between high and very high in the Western NSW LHD have been mostly in line with those seen across NSW, with a slight decrease in Western NSW LHD since 2017 (see Figure B.16 for more detail).

Source: Ministry of Health 2020, *Health Statistics NSW*

Figure B.16 High and very high levels of psychological distress based on Kessler 10 scale (proportion of persons aged 16 years and older), 2003–2019

B.9.2 Road incidents

Overall, road incidents resulting in injury and non-casualty (towaway) have decreased in the regional area from 2014–2018, while fatal crashes have remained fairly stable. Most crashes result in some level of injury. Crash trends for the regional area are presented in Figure B.17.



Source: Transport for NSW 2019

Figure B.17 Crash trends in the regional area, 2014–2018

B.9.3 Voluntary work

Volunteering rates can give an indication of social cohesion in a community, and the willingness of people to help each other. The proportion of the population who engaged in voluntary work in the study area are slightly higher than volunteering rates for NSW (see Table B.41).

Table B.41 Volunteering rates, 2016

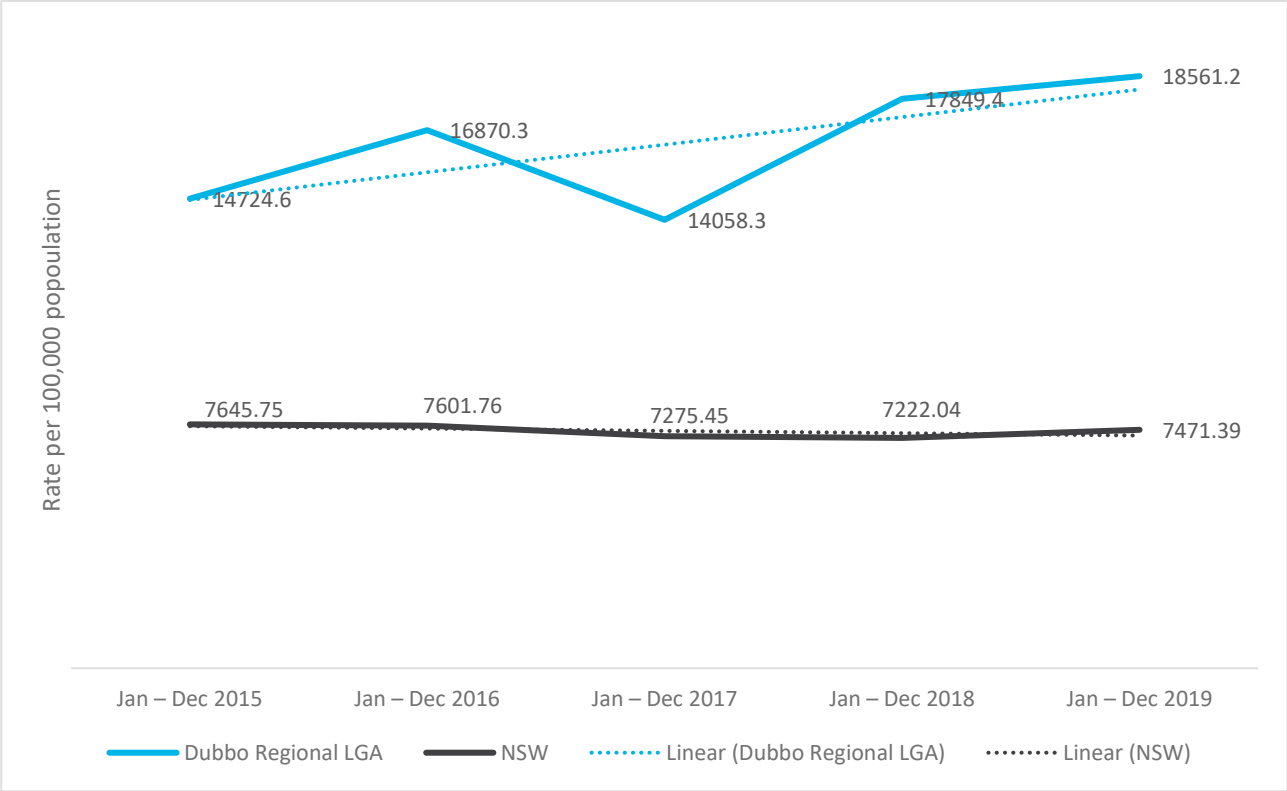
	Did voluntary work through an organisation or group (last 12 months)
Local area	19.4%
Regional area	21.9%
NSW	18.1%

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

B.9.4 Community safety and crime

The following data has been sourced from the NSW Bureau of Crime Statistics and Research (BOCSAR). The following data for Dubbo LGA is assumed to be similar within the local and regional areas.

There has been some variability in offence rates in the regional area from 2015–2019. However, the rate of recorded offences per 100,000 people in the regional area has consistently remained above the rate of recorded offences in NSW over the same period (see Figure B.18 and Table B.42).



Source: Bureau of Crime Statistics and Research 2019— NSW Local Government Area excel crime tables

Figure B.18 Total offences rates per 100,000 population, 2015–2019

Table B.42 Crime trends, 2019

Offence category	Rate per 100,000 population				
	Jan – Dec 2015	Jan – Dec 2016	Jan – Dec 2017	Jan – Dec 2018	Jan – Dec 2019
Assault	1,502.5	1,566.0	1,496.2	1,959.1	2,186.3
Homicide	2.0	1.9	0.0	0.0	0.0
Robbery	41.3	46.7	34.5	54.5	35.7
Sexual offences	334.3	359.9	347.2	375.7	311.8
Theft	6,346.5	7,991.6	5,670.1	6,271.6	6,093.2
Malicious damage to property	2,143.7	2,085.4	1,874.1	2,218.3	2,130.0
Against justice procedures	1,372.7	1,906.5	1,799.2	2,834.3	3,643.9
Disorderly conduct	656.9	614.7	506.4	817.1	646.1
Drug offences	603.8	554.4	485.3	766.3	1,010.5
Other offences	1,720.8	1,743.1	1,845.3	2,552.6	2,503.8
TOTAL	**14,724.6**	**16,870.3**	**14,058.3**	**17,849.4**	**18,561.2**

Table B.42 Crime trends, 2019

	Offence category	Rate per 100,000 population				
		Jan – Dec 2015	Jan – Dec 2016	Jan – Dec 2017	Jan – Dec 2018	Jan – Dec 2019
NSW	Assault	819.9	817.9	801.1	802.4	824.5
	Homicide	1.5	1.4	1.0	1.3	1.4
	Robbery	35.4	30.5	30.9	31.2	32.0
	Sexual offences	155.8	158.9	173.1	173.6	182.0
	Theft	3117.0	3031.9	2855.3	2800.1	2820.4
	Malicious damage to property	840.8	812.4	777.7	733.5	713.9
	Against justice procedures	776.8	851.2	814.4	827.4	928.8
	Disorderly conduct	285.0	282.4	260.2	247.6	251.7
	Drug offences	604.1	610.2	580.3	598.6	654.1
	Other offences	1009.3	1005.0	981.3	1006.3	1062.6
	TOTAL	**7645.7**	**7601.8**	**7275.5**	**7222.0**	**7471.4**

Source: NSW Department of Justice 2019, Bureau of Crime Statistics and Research — Recorded crime reports: Local Government Area Trends

Recorded offences categories that have consistently had the highest rates in the regional area are theft, malicious damage to property, assault, against justice procedures, and other offences (see Figure B.19). The offence category with the highest rate in the local area in 2019 was theft (6,093.2 per 100,000).

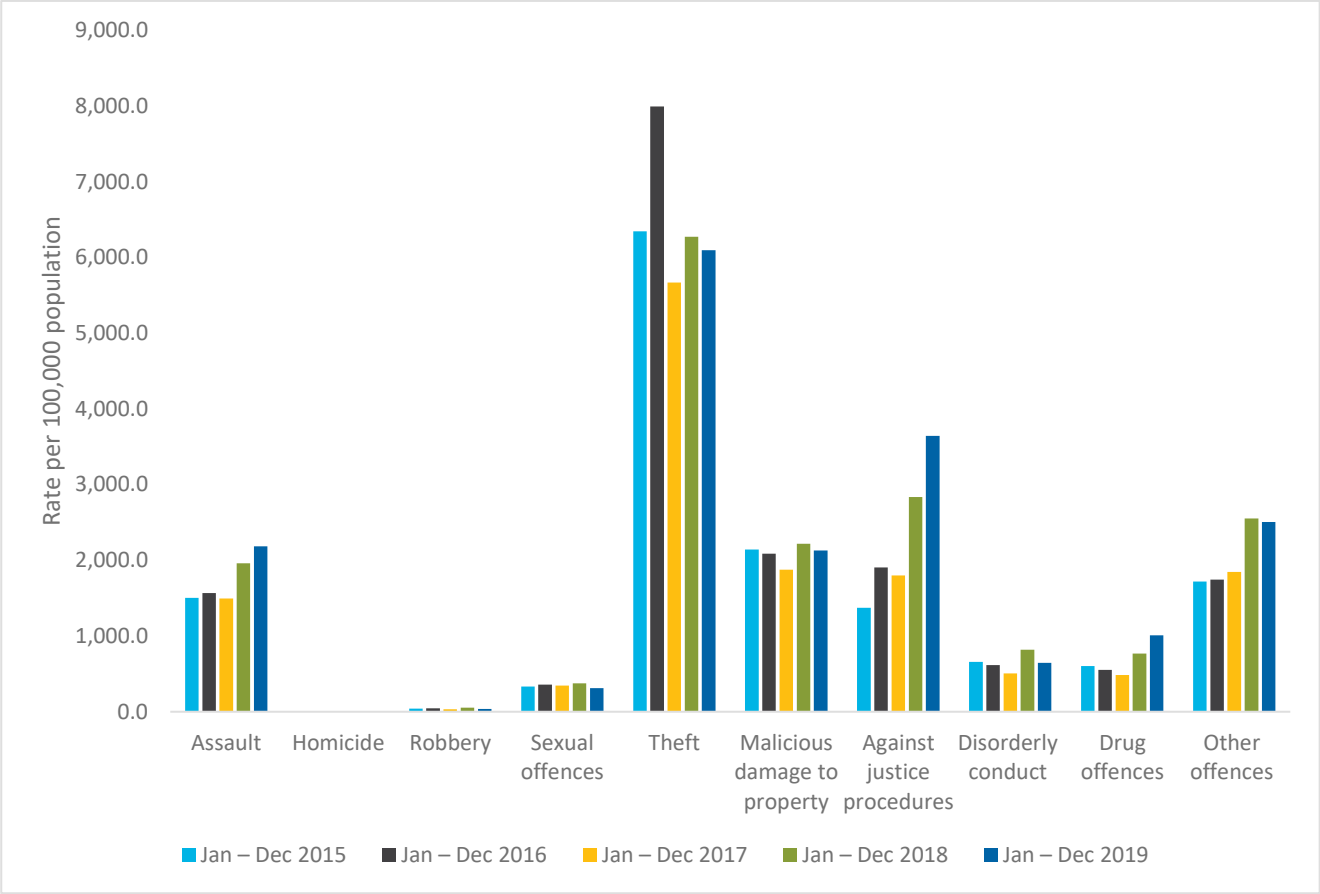


Figure B.19 Offences rates per 100,000 population in Dubbo Regional LGA, 2015–2019

Appendix C

Community information sheet

DUBBO QUARRY CONTINUATION PROJECT: UPDATE

WHAT IS THE DUBBO QUARRY CONTINUATION PROJECT

Holcim (Australia) Pty Limited (Holcim) are the owners and operators of Dubbo Quarry located on Sheraton Road, Dubbo (refer Figure 1). The Dubbo Quarry has operated since 1980 under a development consent granted by Dubbo Regional Council. Accessible basalt resources within the existing quarry boundary are close to exhaustion and planning approval is required to allow the Dubbo Quarry to continue operating. Holcim is, therefore, seeking approval for the Dubbo Quarry Continuation Project which involves the continued operation of the Dubbo Quarry through the development of two new resource areas to the south and west of the existing quarry boundary.

WHAT IS THE PLANNING APPROVALS PROCESS?

The Dubbo Quarry Continuation Project is classified as a State Significant Development under Part 4, Division 4.1 of the NSW Environmental Planning & Assessment Act 1979. Holcim is seeking approval through the Department of Planning, Industry and Environment for the Dubbo Quarry Continuation Project. The approvals process (Figure 2) requires Holcim to prepare an environmental impact statement to accompany the State significant development application for the Dubbo Quarry Continuation Project.

Scoping

Holcim has completed the scoping stage where details of the specialist environmental studies were agreed with the State government, with input from stakeholders, including Dubbo Regional Council. In December 2019, the scoping report for the Dubbo Quarry Continuation Project was submitted to the Department of Planning, Industry and Environment. Following consideration of the scoping report, the Secretary's Environmental Assessment Requirements were issued by the Department of Planning, Industry and Environment on 3 April 2020. The Secretary's Environmental Assessment Requirements outline the specific studies to be undertaken as part of the environmental impact statement.

Figure 2 Approvals process

EIS Delivery

The environmental impact statement will involve a range of technical studies that assess the economic, environmental, and social impacts of the proposed Dubbo Quarry Continuation Project to address the Secretary's Environmental Assessment Requirements.

EMM Consulting has been engaged by Holcim to prepare an environmental impact statement for the Dubbo Continuation Project. This will require the following technical studies to be conducted between June – August 2020 by EMM Consulting's technical specialists and are typical requirements for the approval of quarry operations in NSW:

- Quarrying;
- Air quality;
- Biodiversity;
- Groundwater;
- Hazards;
- Heritage;
- Noise and vibration;
- Soils and rehabilitation;
- Social;
- Surface water;
- Traffic; and
- Visual

Public Exhibition

Once the technical studies are complete, an environmental impact statement will be prepared and placed on public exhibition for community and stakeholder review.

The community and other stakeholders will be invited to make a submission on the exhibited environmental impact statement.

Response to submissions

Holcim will then provide a response to the community and stakeholder submissions in a report to the Department of Planning, Industry and Environment.

Assessment and determination

The Department of Planning, Industry and Environment will then prepare an assessment report including recommended conditions of consent. As this proposed project is categorised as State significant, the consent authority will be a delegate of the Minister for Planning and Public Spaces or the Independent Planning Commission.

Your feedback is an important part of the planning approvals process and assists in ensuring that the environmental impact statement addresses your issues and/or concerns and acknowledges the benefits to the community.

Throughout July and August 2020 EMM Consulting will be conducting a range of engagement activities with the community and interested stakeholders to inform the social impact assessment and the environmental impact statement. They include:

- in-depth interviews;
- workshops;
- community information sheets;
- Community Consultative Committee meetings;
- community information session;
- online survey; and
- web updates.

To complete a 5-minute survey please visit the following link: https://www.surveymonkey.com/r/RRTCKB3

Holcim are committed to working with the community to understand your views, interests and what is important to you.

Stakeholder Engagement during COVID-19

All community consultation will be undertaken in line with current government guidelines, which will include social distancing and increased hygiene practices. Wherever possible the project team will provide you with options for engagement that best suit your circumstances while keeping you and the project team safe.

Contact us

For more information about the Dubbo Quarry Continuation Project you can contact Holcim using the details below or on Holcim's project website: **https://www.holcim.com.au/Dubbo**

For more information about the environmental impact statement or social impact assessment you can contact EMM Consulting on the details below.

Alternatively you can find out more information on the Department of Planning, Industry and Environment Major Projects website: **https://www.planningportal.nsw.gov.au/major-projects/project/26601**

EMM Consulting

Name: Andrea Kanaris

Phone: 07 3648 1217

Email: **sia@emmconsulting.com.au**

Holcim

Name: Luke Edminson

Phone: 0429 790 756

Email: **luke.edminson@lafargeholcim.com**

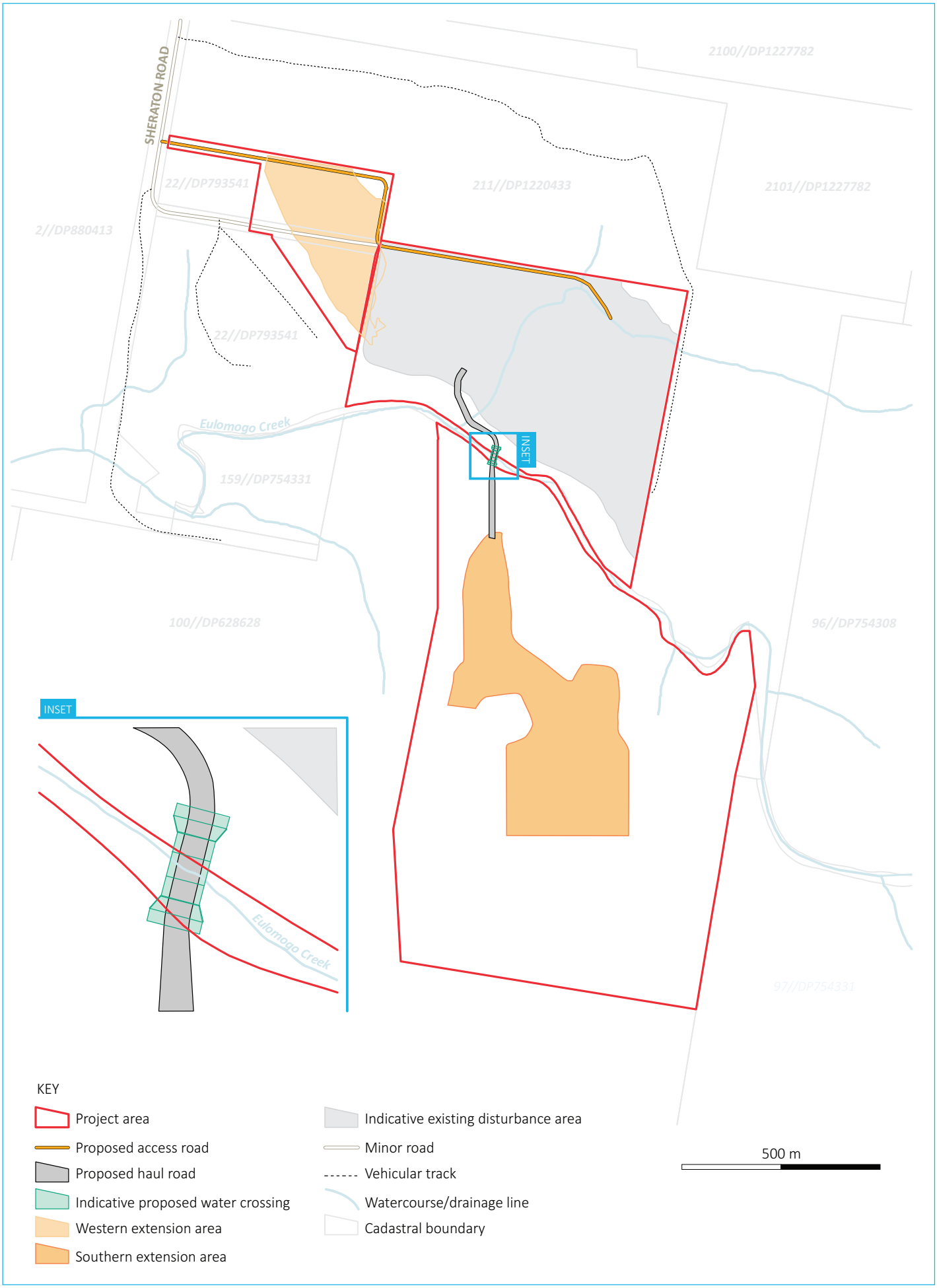


Figure 1 Project area


FIELD
NOTES