APPENDIX X.1

SOCIAL IMPACT ASSESSMENT

Social Impact Assessment

Snowy 2.0 Main Works EIS

Client: EMM Consulting on behalf of Snowy Hydro Pty Ltd
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Executive summary

This Social Impact Assessment (SIA) report documents the social impacts of the Snowy 2.0 Main Works (the Project) as part of a package of technical documents that inform its Environmental Impact Statement (EIS). It has been prepared by Elton Consulting for EMM Consulting on behalf of Snowy Hydro Limited (Snowy Hydro) for the purpose of identifying and analysing the potential social impacts associated with the Project.

Snowy 2.0 is a large-scale pumped hydro-electric storage and generation project embedded within the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme) in southern NSW. Due to the Project's size, economic value and potential impacts it has been declared to be both State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) by the NSW Minister for Planning. The first phase of Snowy 2.0, the Exploratory Works, was assessed in a separate EIS and approved in 2019. The Main Works phase, the subject of this SIA, covers the main construction elements of Snowy 2.0 and its ongoing operation.

The technical details of the Project are complex. A full description of the Project and the purpose of the SIA is provided at Sections 1 and 2.

What is Social Impact Assessment?

SIA is the practice of identifying, predicting, evaluating and developing responses to social change caused by a project. For the purposes of this SIA, the term 'social impact' can be either positive or negative, depending on the circumstances of the activity causing the impact. Social impacts vary widely in their nature; presenting as tangible, intangible, direct, indirect, quantitative or qualitative and above all, social impacts can be experienced by people differently according to how a person interacts with a project.

SIA is undertaken by qualified practitioners of social science. The purpose of SIA is to use findings to ensure that all positive impacts resulting from a project are enhanced and any negative impacts are reasonably mitigated. To do this effectively, practitioners undertake a series of research activities both desktop-based and in the field. The series of activities involves scoping the potential social impacts, conducting community and stakeholder engagement with potentially affected parties, preparing a summary of the baseline conditions of the project area, identifying and analysing the resultant social impacts and finally developing responses in the form of mitigation and enhancement strategies that include how to monitor change over the project lifecycle.

Methodology overview

As a project considered to be of great public interest, the methodology employed in this SIA has been proportionately tailored to suit the scale and nature of Snowy 2.0 Main Works.

This SIA meets the Secretary's Environmental Assessment Requirements (SEARs) as part of the NSW Department of Planning, Industry and Environment (DPIE) planning approvals process. The methodology for this SIA adopts an approach and principles supported by both international and NSW best practice guidance documents. An important part of the methodology was establishing a study area for the SIA. The resulting area of social influence is significantly broader than the site of the Project. The SIA concludes that both positive and negative social impacts of the Project will be felt in communities stretching from Canberra across to Wagga Wagga, and encompasses the numerous townships between including Cooma, Adaminaby, Tumut, Jindabyne and Tumbarumba.

In addition to the extensive engagement already undertaken by Snowy Hydro during the preparation of the EIS, Elton Consulting conducted a series of targeted social impact-specific engagement activities. These activities utilised a variety of techniques including focus groups, surveys and in-depth interviews with Service Level Providers (including representatives from both Snowy Valleys Council and Snowy Monaro Regional Council).

After combining the findings from both the social baseline analysis and engagement activity outcomes, a precautionary approach generated the identification of a number of potential social impacts. Each category of social impact aligns to the definitions of social impact provided in best practice guidance material. Analysis considered the characteristic of each impact from both a positive and negative standpoint.

Two general mitigation strategies are recommended for the purposes of addressing social impacts identified in this SIA. Firstly, to refine and implement a Social Impact Management and Monitoring Plan (SIMMP). Secondly, to

incorporate regular liaison with a range of key stakeholders into the Community and Stakeholder Management Plans (CSMP) for the management of community and stakeholder relations and communication for the Project.

A full description of the methodology used for the SIA is described in Section 3.

Social baseline context

Establishing a comprehensive baseline social context of the area of social influence is a central part of this SIA. It provides an accurate 'before' Project description of communities that will help ensure accurate 'post' Project comparisons can be made. This baseline social context also briefly describes each of the townships within the area of social influence, provided in Annexure D-1.

This SIA adopted a 'community capitals' approach to establish what level of access communities in the area of social influence have to various types of assets. This was used as a way of understanding any areas of strengths or weaknesses which could affect the way people cope with the social impacts resulting from the Project. A full analysis of the five types of community capital available in the area of social influence is provided at Annexure D-2.

The 'community capitals' approach led to a decisive assessment that there is overall a significant degree of resilient capacity exhibited by potentially affected groups of people. It is very likely this will substantially assist communities to cope with the social changes that are predicted to arise from the Project. Key strengths were the presence of strong existing social networks and high levels of trust in, and goal alignment with, the proponent Snowy Hydro. This baseline resilience will grant people a considerable degree of tolerance and understanding as they experience the effects of social impacts. It also increases the likelihood that impacted people can adapt to social impacts more easily than might otherwise have been the case. Section 4 of this SIA summarises key findings on areas of resilience and vulnerability from the 'community capitals' analysis, with full analysis available at Annexure D.

A notable finding of the social baseline context was how the legacy of the original Snowy Scheme continues to influence the viewpoints of affected communities. Built between 1949 and 1974, the Snowy Scheme has created a shared local history and cultural pride leading to overwhelming public support for the Project's overall objective. Throughout the engagement activities undertaken for this SIA, it was an unprompted and regularly expressed aspiration of people to be part of an infrastructure project that will leave a long-term legacy for their children and grandchildren. This aspiration has likely tempered the way people expressed their concerns about any short to medium term inconveniences that the Project's construction might cause to their day to day lives.

Another feature of the social baseline context was how well informed the general public were about the Project in terms of awareness and understanding. This has probably arisen due to a combination of mainstream media attention and the long running communications and community consultation program undertaken by the proponent. The fact that people are well informed about the Project is relevant to this SIA because it means that those consulted with were more likely to have possessed the ability to accurately understand and anticipate how the Project might impact them, and prepare responses accordingly.

Finally, it is important to be cognisant that this SIA builds on prior work undertaken for the Exploratory Works component of the Project. The social baseline context has therefore encompassed any impacts already predicted or currently being felt throughout the area of social influence as part of the 'before' Project description. This SIA found that part of the baseline social situation is that preparatory Project related activities are already being observed by people in communities, for example through an increased presence of consultants collecting information to formulate technical reports, including this SIA. Particularly since communities in the area of social influence have relatively small populations, these signs of Project momentum have already created preliminary indications of both positive and negative impacts. For this SIA, manifestations of these existing speculations and opinions have no doubt influenced the way impacts were predicted, as well as predisposed assessments of their extent. The underlying assumption made is that current behaviour could accurately foreshadow how future Project activities might be experienced.

Identified positive and negative social impacts

This SIA identified a total of 38 potential social impacts of the Project. Full analysis of these are outlined in Section 5.

Overall, the SIA concludes that construction of the Project will generate both positive and negative social change processes within all of its surrounding communities. Distributional analysis suggests range of impacts will be particularly felt in the town of Cooma.

This SIA took into account that as the Project is considered a State significant infrastructure project, its public interest objective has the potential to create state-wide positive social benefits that flow from the creation of future energy security. The assessment of impacts is therefore focused principally on amelioration: how effective management of the Project over its lifetime can ensure negative impacts are avoided or minimised, while ensuring that benefits of the Project are maximised.

Many of the identified positive social impacts were found to be linked to the substantial hopes people have that economic stimulus potentially created from local employment on the Project will create benefits for themselves and their families. If this does not eventuate, there is some risk of widespread disappointment, where communities experience a feeling of being 'let down'. This indicates that the extensive consultation and engagement activities facilitated by Snowy Hydro in the lead up to the Project will continue to have substantial bearing on how supportive communities feel towards the Project.

As experience on other major infrastructure projects suggests, this SIA predicts that not everyone can benefit from the economic opportunities created by the Project's prospective employment offering. Social risk ratings therefore factor in how potential impacts might be felt by vulnerable groups within communities, particularly people who are not in the labour force. It is also noted that upon completion, the longer-term employment generation prospects of the Project's operational phase is minimal.

The highest rated positive and negative social impact identified in the SIA are described below.

» **Positive impact: Benefits arising from increased economic opportunity**

  The SIA found that the Project has significant potential to improve people's livelihoods through new income generated by economic activity relating to the Project. This impact is further quantified in the Economic Impact Assessment (Gillespie Economics, 2019) compiled separately to this SIA. These economic impacts are relevant to this SIA because of the positive expectations communities have regarding local employment and local procurement opportunities. The potential income derived from economic stimulus can directly shape other social aspects of people's lives such as their access to health, housing, education and transport. It was identified that if the Project can maximise local content, this impact has the most potential to affect positive social change processes throughout the area of social influence.

» **Negative impact: Reductions in housing availability and decreased housing affordability**

  This SIA found that regardless of the planned provision for worker accommodation camps to cater to the housing needs of the Project workforce, it remains likely that rental housing availability and affordability will be negatively impacted, particularly in Cooma. This new demand for housing arises for two main reasons. Firstly, because Project workers may choose to relocate to the area of social influence either by themselves or with their families for the duration of their work contracts. Secondly, because of indirect employment workforces who may choose to relocate to the area of social influence in order to take advantage of ancillary employment opportunities the Project creates. As the existing local housing market has constrained ability to adapt to projected new demand, it is likely there will be a short-term housing 'squeeze'.

Mitigation and management

This SIA views the currently underway Exploratory Works as a unique opportunity to anticipate degrees of workforce population in-migration that might be triggered by the Project. Preparing for and adequately monitoring the degree of population change that arises will be the main way of managing social impacts when Main Works commence. Depending on the population change scenario that eventuates, appropriate interventions can then be designed that are proportionate to the scale of change being experienced.

Section 9 of this SIA recommends reasonable and feasible ways communities within the area of social influence can be supported to cope with social changes likely to arise from the Project. This is structured as a Social Impact Management and Monitoring Plan (SIMMP) designed to be refined and implemented throughout the life of the Project.

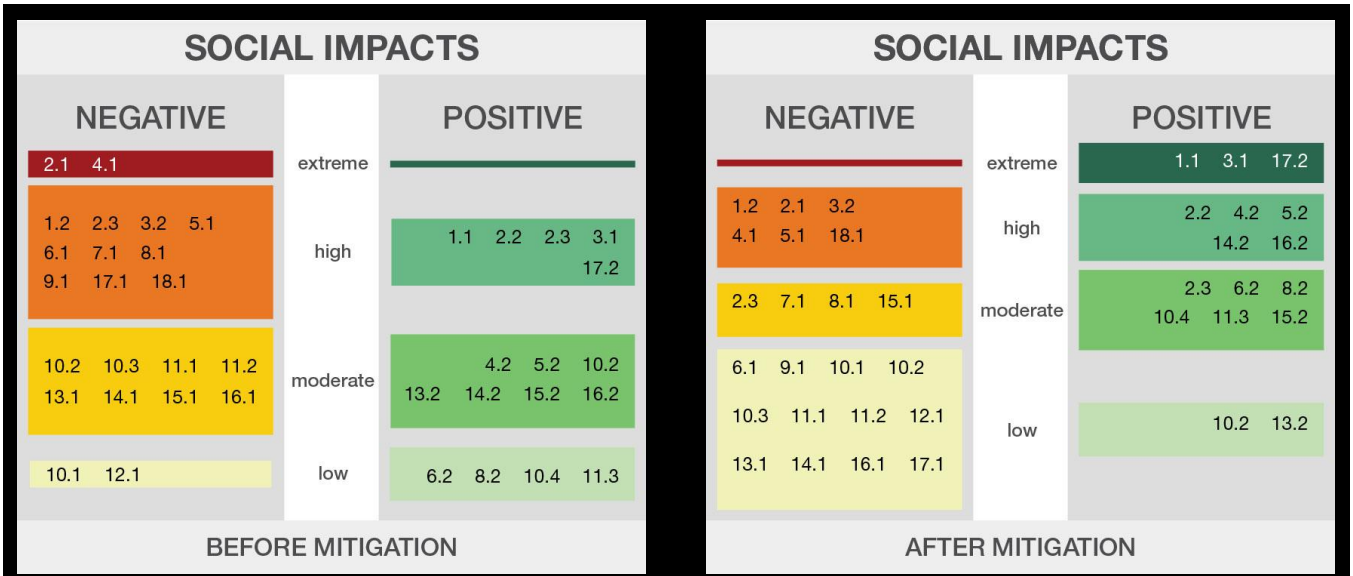
Designing an appropriate transition response to the cessation of Project construction works will also ensure there is not an abrupt rupture of social processes that are likely to be built up over the Project's six-year construction period. It was a clearly expressed desire of communities in the area of social influence that the Project will return ongoing benefit to its communities.

Summary of social impact risks

The images in Figure 1 overleaf illustrate all identified potential social impacts plotted on a social risk matrix. It shows their 'before mitigation' risk rating (without mitigation interventions) and their 'residual' social risk rating (after mitigation and enhancement measures have been implemented).

A full summary of all social impacts is provided at Section 8.

Figure 1 Summary of social impact risk ratings

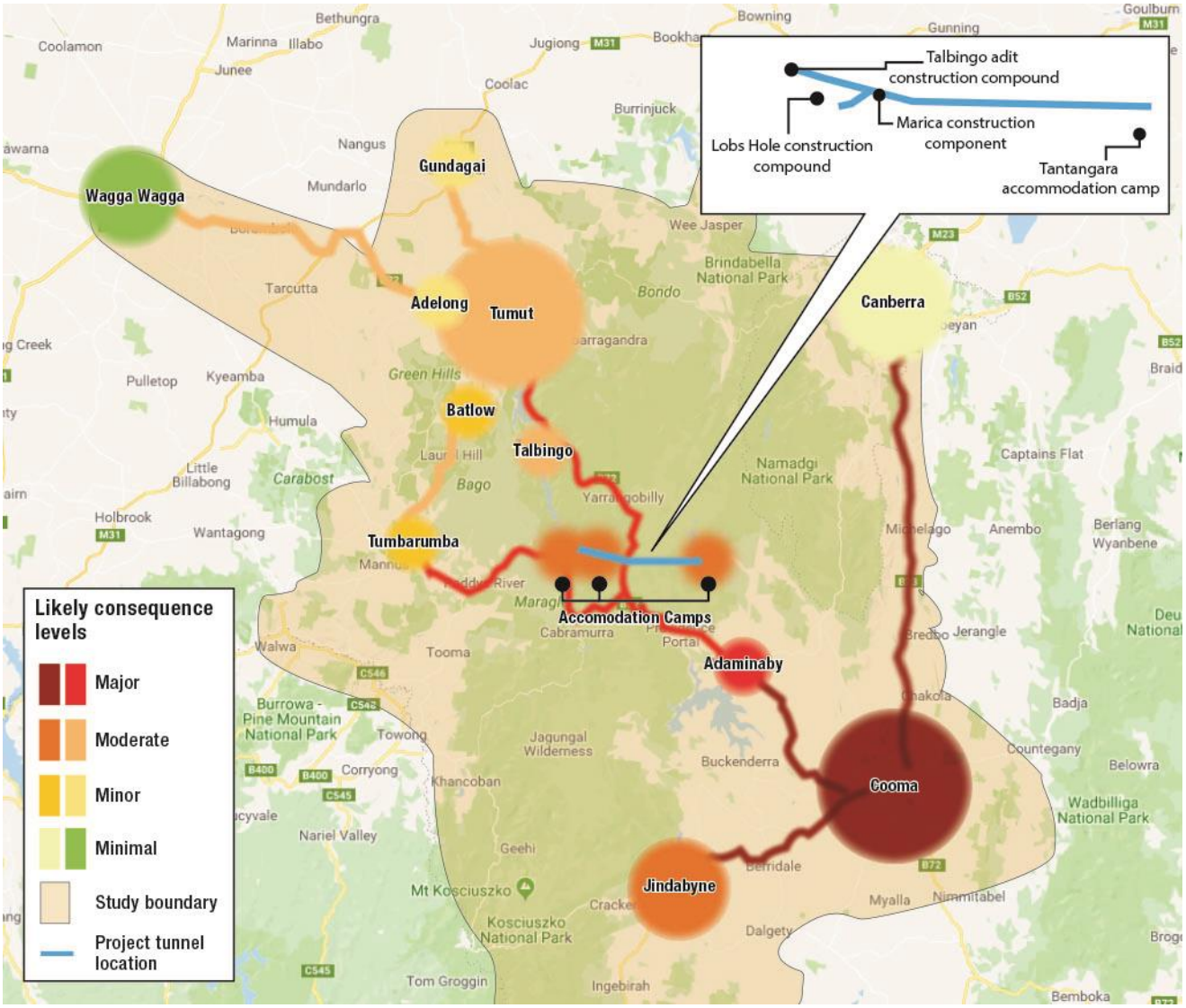


	Potential positive effects		Potential negative effects
1.1.	Effective planning and management of population change	**1.2**	Ineffective planning and management of population change
2.2	New demand for residential housing to purchase	**2.1**	New demand for residential housing to rent
2.3	Changes to visitor demand for short stay accommodation	**2.3**	Changes to visitor demand for short stay accommodation
3.1	Opportunities to maximise economic benefits	**3.2**	Ability to access skilled labour force
4.2	Expectation of new road upgrades	**4.1**	Expectation of worsened traffic congestion
5.2	Improved amenity and new visitor destinations	**5.1**	Disrupted access to recreation and tourist activities
6.2	Opportunities to improved social cohesion	**6.1**	Concern about reduced social cohesion
		7.1	Increased pressure on health and medical services
8.2	Increased vibrancy of local schools	**8.1**	Increased pressure on education services
		9.1	Increased pressure on welfare services
		10.1	Potential for additional loss of Aboriginal cultural heritage
10.2	Formation of new social identities	**10.2**	Formation of new social identities
10.4	Opportunities to strengthen culture	**10.3**	Changes to sense of place
11.3	Economic security for workforce	**11.1**	Workforce (direct employee) wellbeing
		11.2	Recreational user wellbeing
		12.1	Perceived risks of environmental damage
13.2	Restricted public access to Project works sites	**13.1**	Changes to water levels at Tantangara Reservoir
14.2	Changes to aesthetic values and amenity at recreational sites	**14.1**	Changes to aesthetic values and amenity at recreational sites
15.2	Personal economic advantage	**15.1**	Personal economic disadvantage
16.2	Creation of local content supporting SHL social license to operate	**16.1**	Potential for decreased levels of trust in the planning system
17.2	Hope for a more secure, renewable energy marker	**17.1**	Disappointment if Project does not create expected economic benefits
		18.1	Risk of inadequate planning to meet challenges of concurrent projects

Distribution of social impacts

Social impacts, both positive and negative, will be experienced to different degrees across the area of social influence. Cooma and Adaminaby are considered the most likely communities to experience both benefit and inconvenience, as shown in the map below.

Figure 2 Summary of social impact distribution



Conclusion

Overall, this SIA anticipates that the Project will create many social and economic benefits for people in the area of social influence while also creating some short term inconvenience and disruptions. The identified impacts are highly temporal in nature, occurring primarily within the overall Project construction period of six years. A key advantage of Snowy 2.0 is that the Exploratory Works phase offers a unique opportunity for social effects to be observed and studied for emerging trends. The recommended draft Social Impact Management and Monitoring Plan (SIMMP) can be refined so that social impact indicators trigger the development and implementation of appropriate mitigation interventions.

Glossary of terms

Term	Definition
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, songlines, and places) cultural places and traditions associated with past and present-day Aboriginal communities.
Accommodation camp	Area used for temporary housing and facilities for construction personnel
Area of social influence	Geographical area in which the predicted social impacts will occur.
Community	A group of people living in a specific geographic area or with mutual interests that could be affected by a project.
Community capitals	The five key community capitals (assets) that collectively create community capacity and resilience include natural, economic, physical, human and social. The use of community capitals in the baseline social context is adapted from Coakes and Sadler (2011).
Cumulative social impacts	The successive, incremental and combined impacts (both positive and negative) of activities on society, the economy and the environment.
Distributive equity	Considers how social impacts are distributed within the current generation and between future generations.
Environment	As defined within the Environmental Protection & Assessment Act 1979 all aspects of the surroundings of humans, whether affecting any humans as an individual or in his or her social groupings.
Environmental Impact Statement	The process of identifying, predicting, evaluating and mitigating the environmental, social, economic and other relevant effects of the project.
Exploratory Works	A program of approved exploratory works for Snowy 2.0.
Exploratory Works SA	The Social Assessment prepared for the Exploratory Works EIS.
Future Generation	The construction contractor responsible for Snowy 2.0 made up of a joint venture between Clough, Salini Impregilo and Lane Construction.
Hydro-electric	Generation of electricity using flowing water (typically from a reservoir held behind a dam or barrage) to drive a turbine which powers a generator.
Impact	Influence or effect exerted by a project or other activity on the natural, built and human environment.
Index of Relative Socio-Economic Advantage and Disadvantage	Socio-economic advantage and disadvantage are defined broadly by the index of Relative Socio-Economic Disadvantage (IRSD) in terms of people's access to material and social resources and their ability to participate in society.
Lobs Hole	A former settlement location within Kosciuszko National Park, and a primary location of Exploratory Works and Main Works.
Lobs Hole accommodation camp	Area used for temporary housing and facilities for construction personnel at Lobs Hole.
Lobs Hole construction compound	Main area used for construction facilities at Lobs Hole, including ancillary facilities, laydown, storage, and environmental controls.
Lobs Hole Ravine Road	The existing access road to Lobs Hole connecting to Link Road.
Machine hall	Section of the power station containing the pump/turbines.
Main Works	The second phase of Snowy 2.0. this phase of the project covers the major elements of Snowy 2.0, including the underground power station, power waterways, access tunnels and access, power and communications infrastructure, as well as supporting infrastructure to support construction.

Term	Definition
Marica	A primary location for construction, including construction of vertical shafts to the underground power station and headrace tunnel, and a temporary accommodation camp.
Marica construction compound	Area used for construction facilities near the existing Marica track, including ancillary facilities, laydown and storage, and environmental controls.
People	Includes individuals, households, groups, communities, organisations and the NSW population generally.
Project area	The area required to access and build project infrastructure, including surface and tunnel components of the project.
Proponent	An individual, group or entity lodging the development applications, or carryout out the project approved under the development consent, or any person who seeks to carry out any part of the project to which the consent applies.
Power station	An industrial facility for the generation of electric power.
Qualitative	Relating to or concerned with quality or qualities, rather than quantity or measured value.
Quantitative	An assessment based on quantifiable, measured data.
Resident	People living in a specific area.
Sensitive receiver	A local where a person works or resides, including residential, hospitals, hotels, shopping centres, play grounds, recreational centres or similar.
Snowy 2.0	A pumped-hydro expansion of the Snowy Scheme that will link the two existing reservoirs of Tantangara and Talbingo through underground tunnels, and include a new underground power station with pumping capabilities.
Snowy 2.0 Connection Project	The direct connection to the transmission network to enable Snowy 2.0 to connect to the electricity grid.
Snowy Hydro Limited	The proponent of Snowy 2.0 Main Works.
Snowy Scheme	Snowy Mountains Hydro-electric Scheme.
Social	Of, or relating to, the lives, activities, relationships and networks of people and communities.
Social infrastructure	In the context of this SIA, social infrastructure refers to community facilities, libraries, education and health facilities and services, childcare facilities, justice and emergency services, recreation spaces including indoor and outdoor active and passive open space.
Stakeholder	Person or group affected by or concerned with an issue.
Sustainable Livelihoods Approach	Refers to a way of thinking about communities and people in terms of their capabilities, livelihood resources (assets, capitals) and livelihood strategies (activities) they undertake to make their living and conduct their way of life.
Tantangara accommodation camp	Area used for temporary housing and facilities for construction personnel near Tantangara Reservoir.
Tantangara construction compound	Area used for construction for the Tantangara intake and Tantangara adit, including ancillary facilities, laydown and storage, and environmental controls.
TRC	TRC Tourism Pty Ltd
Voluntary Planning Agreement	The proponent may agree to dedicate land free of cost, pay a monetary contribution or provide any other material public benefit (or any combination of these).

Abbreviations

Abbreviation	Definition
ABS	Australian Bureau of Statistics
ACHA	Aboriginal cultural heritage assessment
AHD	Australian Height Datum
APPs	Australia Privacy Principles
CALD	Cultural and linguistically diverse
CATI	Computer-assisted telephone interview
Census	Population and housing census
CSSI	Critical State Significant Infrastructure
DIDO	Drive-in/drive-out
DPIE	NSW Department of Planning, Industry and Environment
ECVT	Emergency egress, cable and ventilation tunnel
EIS	Environmental Impact Statement
Elton Consulting	Elton Consulting Group Pty Ltd
EMM	EMM Consulting Pty Ltd
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)
FIFO	Fly-in/Fly-out
FSL	Full supply level
GP	General practitioner
GWh	Gigawatt hours
IAP2	International Association for Public Participation
IAIA	International Association of Impact Assessment
IRSD	Index of Relative Socio-Economic Disadvantage
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
km	kilometre
KNP	Kosciuszko National Park
LGA	Local government area
LHD	Local health district
m	metres
m2	square metre
m3	cubic metre

Abbreviation	Definition
m	million
MAT	Main access tunnel
MOL	Minimum operating level
MNES	Matters of national environmental significance
MW	Megawatts
NPWS	National Parks and Wildlife Service
n.d.	No date
NEM	National Energy Market
NSW	New South Wales
PHIDU	Public Health Information Development Unit
SA	Social Assessment submitted as part of the Exploratory Works EIS
SA1	Statistical Areas Level 1
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-economic index for areas
SHL	Snowy Hydro Limited
SIA	Social impact assessment
SIMP	Social impact management plan
SLP	Service level provider
SSC	State suburbs
SSI	State significant infrastructure
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
TV	Television
The project	Snowy 2.0 Main Works
UCL	Urban Centre and Localities
VPA	Voluntary Planning Agreement

1 Introduction

This Social Impact Assessment (SIA) has been prepared by Elton Consulting on behalf of EMM Consulting who have been engaged by Snowy Hydro Limited to develop the Environmental Impact Assessment (EIS) for the Snowy 2.0 Main Works Project. The EIS will be assessed by the NSW Department of Planning, Industry and Environment (DPIE) as part of the planning approvals process. This SIA is a technical report that will inform the EIS by making a comprehensive effort to estimate in advance the intended or unintended likely social consequences of a decision by DPIE to approve the Project.

1.1 The Project

Snowy Hydro Limited (Snowy Hydro) proposes to develop Snowy 2.0, a large-scale pumped hydro-electric storage and generation project which would increase hydro-electric capacity within the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme). Snowy 2.0 is the largest committed renewable energy project in Australia and is critical to underpinning system security and reliability as Australia transitions to a decarbonised economy. Snowy 2.0 will link the existing Tantangara and Talbingo reservoirs within the Snowy Scheme through a series of underground tunnels and a new hydro-electric power station will be built underground.

Snowy 2.0 has been declared to be State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) by the former NSW Minister for Planning under Part 5 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) and is defined as CSSI in clause 9 of Schedule 5 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). CSSI is infrastructure that is deemed by the NSW Minister to be essential for the State for economic, environmental or social reasons. An application for CSSI must be accompanied by an environmental impact statement (EIS).

Separate applications are being submitted by Snowy Hydro for different stages of Snowy 2.0 under Part 5, Division 5.2 of the EP&A Act. This includes the preceding first stage of Snowy 2.0, Exploratory Works for Snowy 2.0 (the Exploratory Works) and the stage subject of this current application, Snowy 2.0 Main Works (the Main Works). In addition, an application under Part 5, Division 5.2 of the EP&A Act is also being submitted by Snowy Hydro for a segment factory that will make tunnel segments for both the Exploratory Works and Main Works stages of Snowy 2.0.

The first stage of Snowy 2.0, the Exploratory Works, includes an exploratory tunnel and portal and other exploratory and construction activities primarily in the Lobs Hole area of the Kosciuszko National Park (KNP). The Exploratory Works were approved by the former NSW Minister for Planning on 7 February 2019 as a separate project application to DPIE (SSI 9208).

This SIA has been prepared to accompany an application and supporting EIS for the Snowy 2.0 Main Works. As the title suggests, this stage of the project covers the major construction elements of Snowy 2.0, including permanent infrastructure (such as the underground power station, power waterways, access tunnels, chambers and shafts), temporary construction infrastructure (such as construction adits, construction compounds and accommodation), management and storage of excavated rock material and establishing supporting infrastructure (such as road upgrades and extensions, water and sewage treatment infrastructure, and the provision of construction power). Snowy 2.0 Main Works also includes the ongoing operation of Snowy 2.0.

Snowy 2.0 Main Works is shown in Figure 5. If approved, the Snowy 2.0 Main Works would commence before completion of Exploratory Works.

The Snowy 2.0 Main Works do not include the transmission works proposed by TransGrid (TransGrid 2018) that provide connection between the cableyard and the NEM. These transmission works will provide the ability for Snowy 2.0 (and other generators) to efficiently and reliably transmit additional renewable energy to major load centres during periods of peak demand, as well as enable a supply of renewable energy to pump water from Talbingo Reservoir to Tantangara Reservoir during periods of low demand. While the upgrade works to the wider transmission network and connection between the cableyard and the network form part of the CSSI declaration for Snowy 2.0 and Transmission Project, they do not form part of this application and will be subject to separate application and

approval processes, managed by TransGrid. This project is known as the HumeLink and is part of AEMO's Integrated System Plan.

With respect to the provisions of the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), on 30 October 2018 Snowy Hydro referred the Snowy 2.0 Main Works to the Commonwealth Department of the Environment and Energy (DoEE) and, on a precautionary basis, nominated that Snowy 2.0 Main Works has potential to have a significant impact on MNES and the environment generally.

On 5 December 2018, Snowy 2.0 Main Works were deemed a controlled action by the Assistant Secretary of the DoEE. It was also determined that potential impacts of the project will be assessed by accredited assessment under Part 5, Division 5.2 of the EP&A Act. This accredited process will enable DPIE to manage the assessment of Snowy 2.0 Main Works, including the issuing of the assessment requirements for the EIS. Once the assessment has been completed, the Commonwealth Minister for the Environment will make a determination under the EPBC Act.

1.2 Project location

Snowy 2.0 Main Works are within the Australian Alps, in southern NSW, about mid-way between Canberra and Albury. Snowy 2.0 Main Works is within both the Snowy Valleys and Snowy Monaro Regional local government areas (LGAs).

The nearest large towns to Snowy 2.0 Main Works are Cooma and Tumut. Cooma is located about 50 kilometres (km) south east of the project area (or 70 km by road from Providence Portal at the southern edge of the project area), and Tumut is located about 35 km north west of the project areas (or 45 km by road from Tumut 3 power station at the northern edge of the project area). Other townships near the project area include Talbingo, Cabramurra, Adaminaby and Tumbarumba. Talbingo and Cabramurra were built for the original Snowy Scheme workers and their families, while Adaminaby was relocated in 1957 to make way for the establishment of Lake Eucumbene.

The location of Snowy 2.0 Main Works with respect to the region is shown in Figure 3.

The pumped hydro-electric scheme elements of Snowy 2.0 Main Works are mostly underground between the southern ends of Tantangara and Talbingo reservoirs, a straight-line distance of 27 km. Surface works will also occur at locations on and between the two reservoirs. Key locations for surface works include:

- **Tantangara Reservoir** - at a full supply level (FSL) of about 1,229 metres (m) to Australian Height Datum (AHD), Tantangara Reservoir will be the upper reservoir for Snowy 2.0 and include the headrace tunnel and intake structure. The site will also be used for a temporary construction compound, accommodation camp and other temporary ancillary activities;
- **Marica** - this site will be used primarily for construction including construction of vertical shafts to the underground power station (ventilation shaft) and headrace tunnel (surge shaft), and a temporary accommodation camp;
- **Lobs Hole** - the site will be used primarily for construction but will also become the main entrance to the power station during operation. Lobs Hole will provide access to the Exploratory Works tunnel, which will be refitted to become the main access tunnel (MAT), as well as the location of the emergency egress, cable and ventilation tunnel (ECVT), portal, associated services and accommodation camp; and
- **Talbingo Reservoir** - at a FSL of about 546 m AHD, Talbingo Reservoir will be the lower reservoir for Snowy 2.0 and will include the tailrace tunnel and water intake structure. The site will also be used for temporary construction compounds and other temporary ancillary activities.

Works will also be required within the two reservoirs for the placement of excavated rock and surplus cut material. Supporting infrastructure will include establishing or upgrading access tracks and roads and electricity connections to construction sites.

Most of the proposed pumped hydro-electric and temporary construction elements and most of the supporting infrastructure for Snowy 2.0 Main Works are located within the boundaries of KNP, although the disturbance footprint for the project during construction is less than 0.25% of the total KNP area. Some of the supporting infrastructure and construction sites and activities (including sections of road upgrade, power and communications

infrastructure) extends beyond the national park boundaries. These sections of infrastructure are primarily located to the east and south of Tantangara Reservoir. One temporary construction site is located beyond the national park along the Snowy Mountains Highway about 3 km east of Providence Portal (referred to as Rock Forest).

The Project is described in more detail in Section 2.

1.2.1 Project area

The project area for Snowy 2.0 Main Works has been identified and includes all the elements of the Project, including all construction and operational elements. The project area is shown overleaf at Figure 1 (Snowy Regional Setting) and Figure 2 (Project Area).

Key features of the project area are:

» the water bodies of Tantangara and Talbingo reservoirs, covering areas of 19.4 square kilometres (km^2) and 21.2 km^2 respectively. The reservoirs provide the water to be utilised in Snowy 2.0;

» major watercourses including the Yarrangobilly, Eucumbene and Murrumbidgee rivers and some of their tributaries;

» KNP, within which the majority of the project area is located. Within the project area, KNP is characterised by two key zones: upper slopes and inverted treelines in the west of the project area (referred to as the 'ravine') and associated subalpine treeless flats and valleys in the east of the project area (referred to as the 'plateau'); and

» farm land southeast of KNP at Rock Forest.

The project area is interspersed with built infrastructure including recreational sites and facilities, main roads as well as unsealed access tracks, hiking trails, farm land, electricity infrastructure, and infrastructure associated with the Snowy Scheme.

1.2.2 SIA study area

The study area used in this SIA is henceforth known as the area of social influence. A detailed description of how the area of social influence was identified and what is included within it is provided in Section 3.3.

Figure 3 Snowy 2.0 regional setting

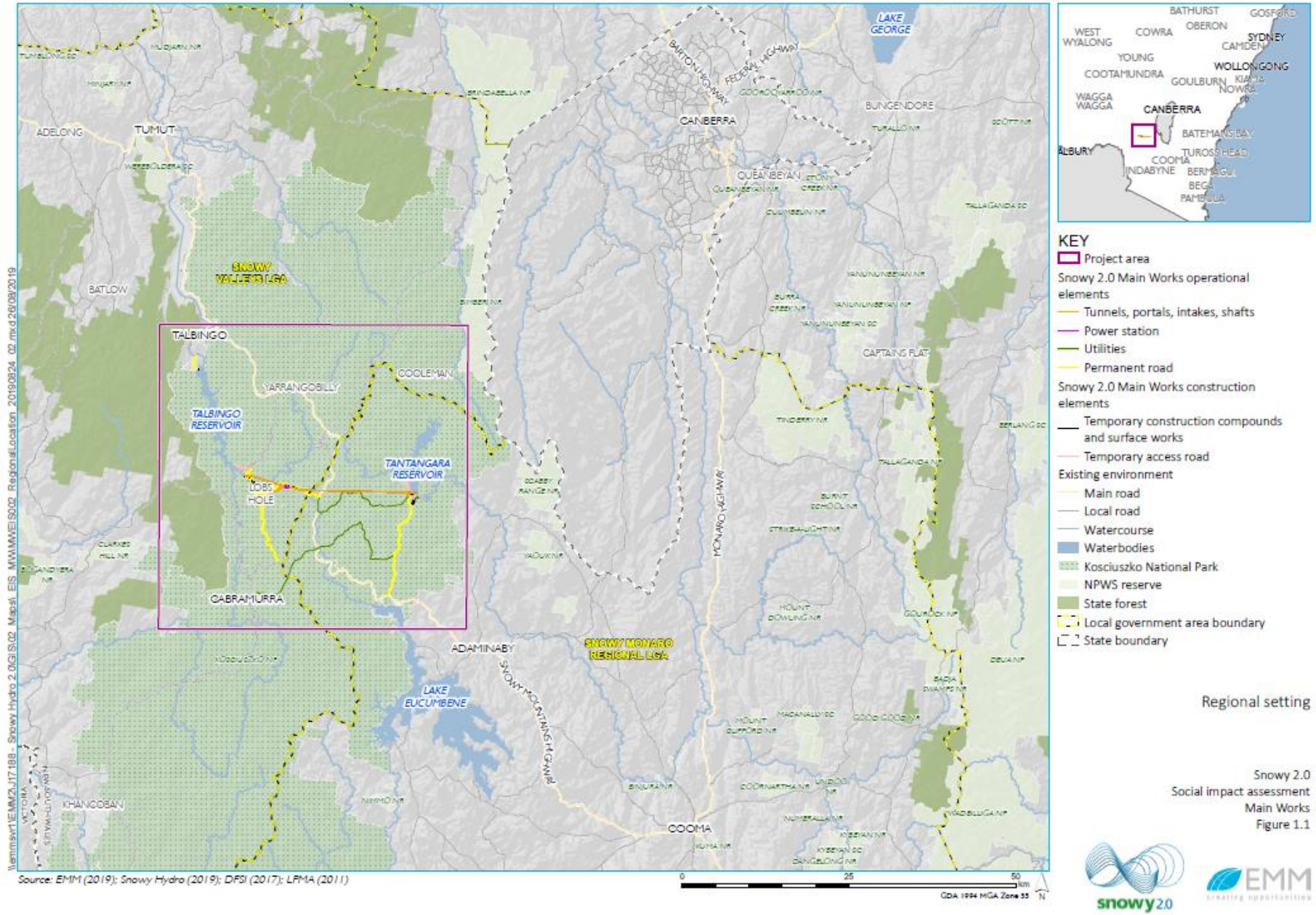
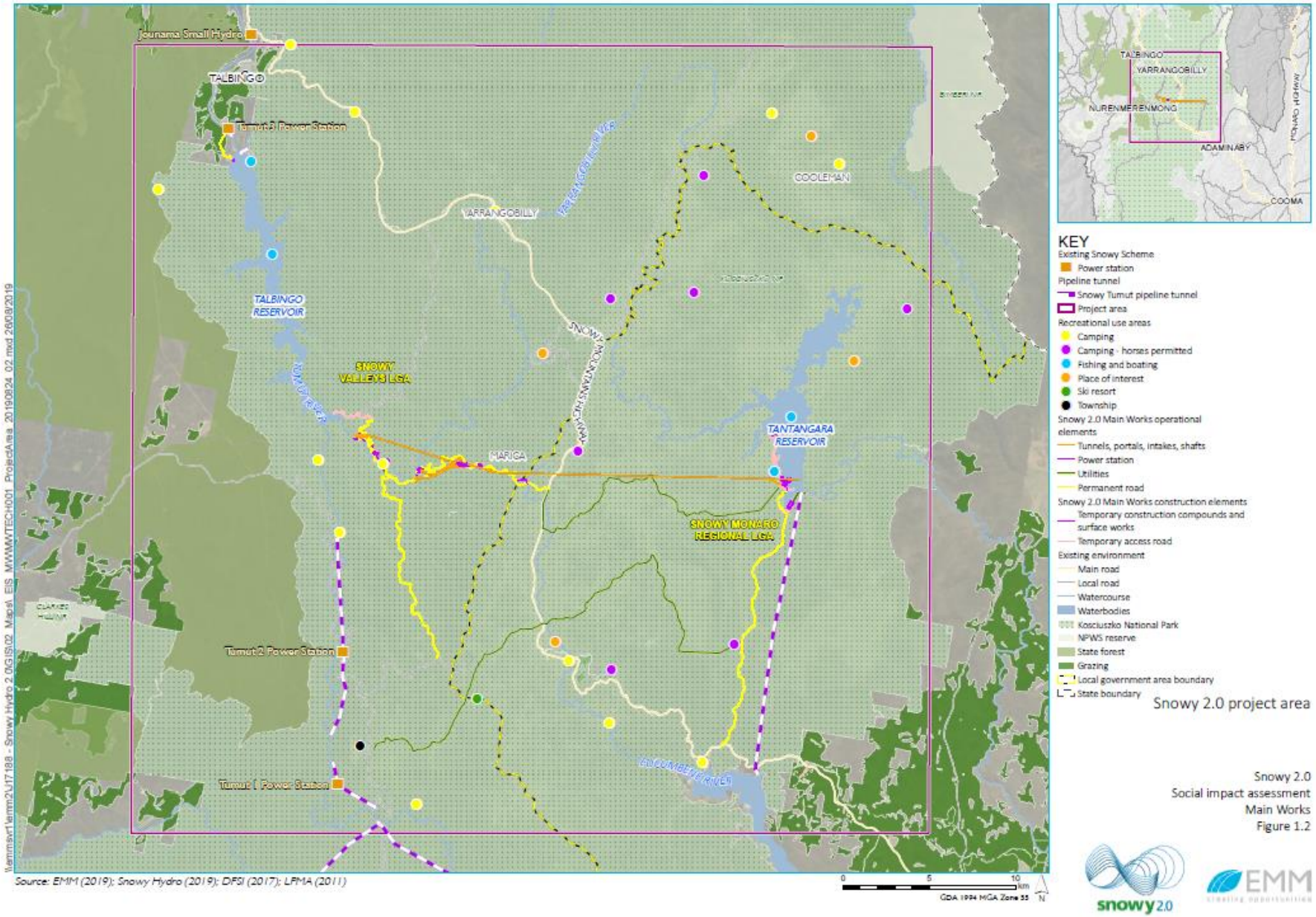


Figure 4 Snowy 2.0 project area



1.3 Proponent

Snowy Hydro is the proponent for the Snowy 2.0 Main Works. Snowy Hydro is an integrated energy business – generating energy, providing price risk management products for wholesale customers and delivering energy to homes and businesses. Snowy Hydro is the fourth largest energy retailer in the NEM and is Australia's leading provider of peak, renewable energy.

1.4 Purpose of this report

This SIA informs the EIS for the Snowy 2.0 Main Works. It documents the assessment method employed to scope, identify, analyse and manage all identified social impacts of Snowy 2.0 Main Works. It details the specific community and stakeholder engagement activities undertaken to inform the identification and analysis of social impacts and provides the findings of each activity. This SIA provides an analysis of how social impacts were identified, their level of significance evaluated including which stakeholder group would be most likely to experience the impact and when. Lastly, this SIA provides a detailed program of management and monitoring measures to ensure all significant social impacts are either avoided, offset or mitigated.

This SIA is the means by which the above information is provided to DPIE, so that it may appropriately assess the social impacts, both positive and negative, of Snowy 2.0 Main Works, and make a final determination.

1.4.1 Assessment guidelines and requirements for the SIA

This SIA has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for Snowy 2.0 Main Works, issued on 31 July 2019, as well as relevant government assessment requirements, guidelines and policies, and in consultation with the relevant government agencies.

The SEARs must be addressed in the EIS. Table 1 lists the matters relevant to this assessment and where they are addressed in this report.

Table 1 Relevant matters raised in SEARS

Requirements		Section addressed
Social	The EIS must include » an assessment of the social impacts of the project on: > the locality, including Tumut, Talbingo, Adaminaby and Cooma; > the demand for infrastructure and services in the Snowy Valleys and Snowy Monaro local government areas; > users of the Kosciuszko National Park, including recreational fishing, bushwalking, camping and boating; » a strategy to offset the impacts of the project on users of the Kosciuszko National Park.	This SIA report provides the assessment of social impacts of the project.

This SIA details the social impacts and benefits of the Main Works phase of Snowy 2.0 to the local region, and to the State of NSW. Economic impacts associated with Main Works have been assessed by a separate technical consultant and its relevant findings have been incorporated into this SIA.

To inform the preparation of the SEARs for Main Works, DPIE invited relevant government agencies to advise on matters to be addressed in the EIS. These matters were taken into account by the Secretary of DPIE when preparing the SEARs.

1.4.2 Related projects

There are three other projects related to Snowy 2.0 Main Works, they are:

» Snowy 2.0 Exploratory Works (SSI-9208) – a Snowy Hydro project with Minister's approval;

» Snowy 2.0 Transmission Connect Project (SSI-9717) – a project proposed by TransGrid; and

» Snowy 2.0 – Segment Factory (SSI-10034) – a project proposed by Snowy Hydro.

While these projects form part of the CSSI declaration for Snowy 2.0 and Transmission Project, they do not form part of Snowy Hydro's application for Snowy 2.0 Main Works. These related projects are subject to separate application and approval processes. Staged submission and separate approval is appropriate for a project of this magnitude, due to its complexity and funding and procurement processes. However, cumulative impacts have been considered in this report where relevant.

1.5 Other related reports

This SIA has been prepared with reference to many other technical reports that were prepared as part of the Snowy 2.0 Main Works EIS. The relevant reports appended to the EIS and referenced in this SIA are listed below.

» Aboriginal Cultural Heritage Assessment (NSW Archaeology 2019)

» Air Quality and Greenhouse Gas Impact Assessment (EMM 2019)

» Economic Impact Assessment (Gillespie 2019)

» Landscape Character and Visual Impact Assessment (Spackman Mossop Michaels, 2019)

» Noise and Vibration Impact Assessment (EMM 2019)

» Recreational Users Impact Assessment (TRC 2019)

» Traffic and Transport Assessment Report (SCT 2019).

2 Description of the project

This Section provides a summary of the Snowy 2.0 Main Works project. It outlines the functional infrastructure required to operate Snowy 2.0, as well as the key construction elements and activities required to build it. A more comprehensive detailed description of the project is provided in Chapter 2 (Project description) of the EIS, which has been relied upon for the basis of this technical assessment.

2.1 Overview of Snowy 2.0

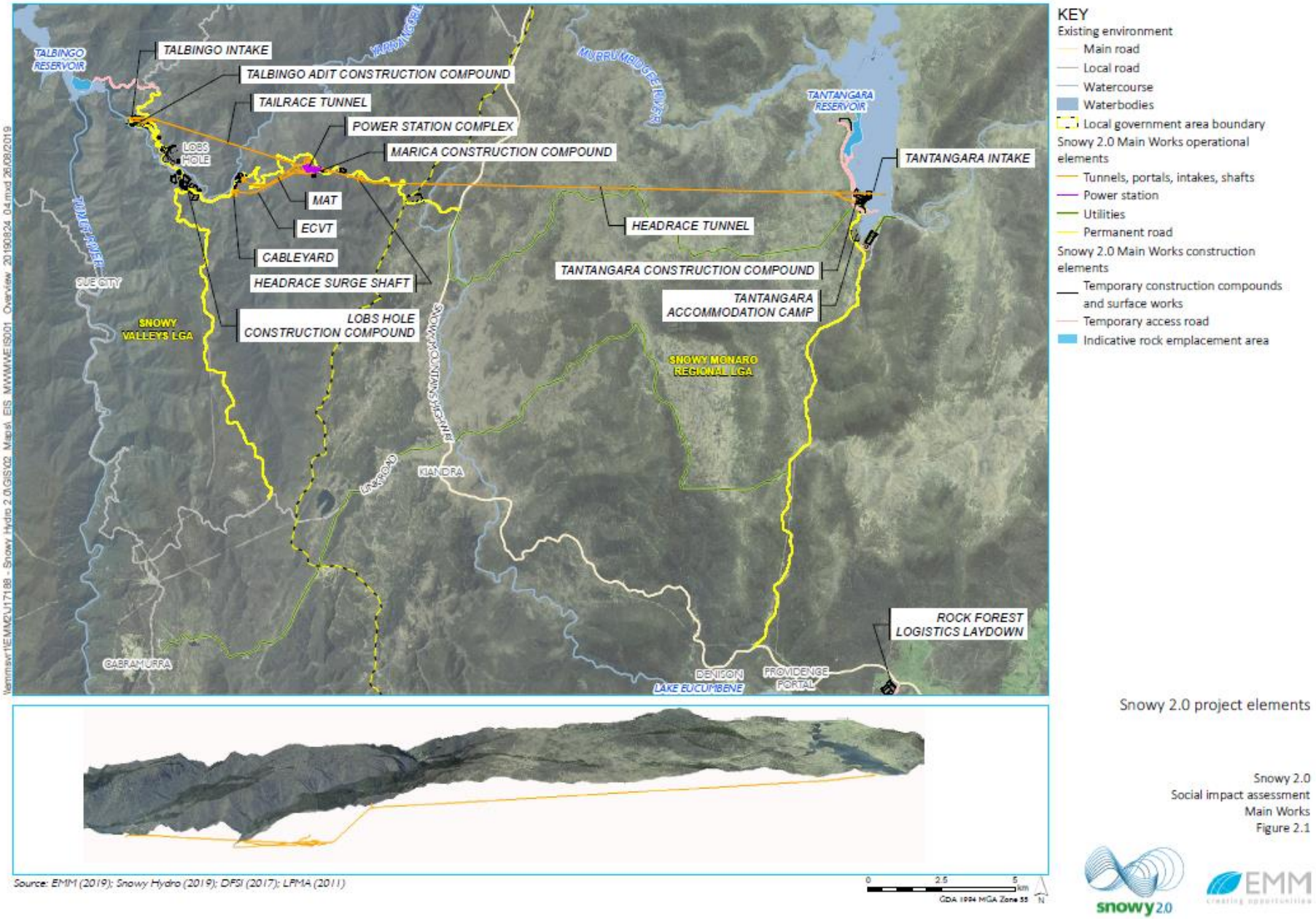
Snowy 2.0 will link the existing Tantangara and Talbingo reservoirs within the Snowy Scheme through a series of underground tunnels and a new hydro-electric power station will be built underground. An overview of Snowy 2.0 is shown on Figure 5 and the key Project elements of Snowy 2.0 are summarised below in Table 2.

Table 2 Overview of Snowy 2.0 Main Works

Project element	Summary of the project
Project area	The project area is the broader region within which Snowy 2.0 will be built and operated, and the extent within which direct impacts from the Snowy 2.0 Main Works are anticipated.
Permanent infrastructure	Snowy 2.0 infrastructure to be built and operated for the life of the assets include: » intake and gate structures and surface buildings at Tantangara and Talbingo reservoirs; » power waterway tunnels primarily comprising the headrace tunnel, headrace surge structure, inclined pressure tunnel, pressure pipelines, tailrace surge tank and tailrace tunnel; » underground power station complex comprising the machine hall, transformer hall, ventilation shaft and minor connecting tunnels; » access tunnels (and tunnel portals) to the underground power station comprising the main access tunnel (MAT) and emergency egress, communication, and ventilation tunnel (ECVT); » establishment of a portal building and helipad at the MAT portal; » communication, water and power supply including the continued use of the Lobs Hole substation; » cable yard adjacent to the ECVT portal to facilitate the connection of Snowy 2.0 to the NEM; and » access roads and permanent bridge structures needed for the operation and maintenance of Snowy 2.0 infrastructure; and » fish control structures on Tantangara Creek and near Tantangara Reservoir wall.
Temporary infrastructure	Temporary infrastructure required during the construction phase of Snowy 2.0 Main Works are: » construction compounds, laydown, ancillary facilities and helipads; » accommodation camps for construction workforce; » construction portals and adits to facilitate tunnelling activities; » barge launch ramps; » water and wastewater management infrastructure (treatment plants and pipelines); » communication and power supply; and » temporary access roads.

Project element	Summary of the project
Disturbance area	The disturbance area is the extent of construction works required to build Snowy 2.0. The maximum disturbance area is about 1,680 hectares (ha), less than 0.25% of the total area of KNP. Parts of the disturbance area will be rehabilitated and landformed and other parts will be retained permanently for operation (operational footprint).
Operational footprint	The operational footprint is the area required for permanent infrastructure to operate Snowy 2.0. The maximum operational footprint is about 99 ha. This is 0.01% of the total area of KNP.
Tunnelling and excavation method	The primary tunnelling method for the power waterway is by tunnel boring machine (TBM), with portals and adits using drill and blast methods. Excavation for other underground caverns, chambers and shafts will be via combinations of drill and blast, blind sink, and/or raise bore techniques.
Excavated rock management	Excavated rock will be generated as a result of tunnelling activities and earthworks. The material produced through these activities will be stockpiled and either reused by the contractor (or NPWS), placed permanently within Tantangara or Talbingo reservoirs, used in final land forming and rehabilitation of construction pads in Lobs Hole, or transported offsite.
Construction water and wastewater management	Water supply for construction will be from the two existing reservoirs (Talbingo and Tantangara) and reticulated via buried pipelines (along access roads). Raw water will be treated as necessary wherever potable water is required (e.g. at accommodation camps). Water to be discharged (comprising process water, wastewater and stormwater) will be treated before discharge to the two existing reservoirs (Talbingo and Tantangara) as follows: » treated process water will be reused onsite where possible to reduce the amount of discharge to reservoirs, however excess treated water will be discharged to the reservoirs; » collected sewage will be treated at sewage treatment plants to meet the specified discharge limits before discharge and/or disposal; and » stormwater will be captured and reused as much as possible.
Rehabilitation	Rehabilitation of areas disturbed during construction including reshaping to natural appearing landforms or returning to pre-disturbance condition, as agreed with NPWS and determined by the rehabilitation strategy. This includes construction areas at Lobs Hole which comprise surplus cut materials that are required for the construction. Areas to be used by Snowy Hydro in the long-term may be re-shaped and rehabilitated to maintain access and operational capabilities (e.g. intakes and portal entrances).
Construction workforce	The construction workforce for the project is expected to peak at around 2,000 personnel.
Operational life	The operational life of the project is estimated to be 100 years.
Operational workforce	The operational workforce is expected to be 8-16 staff, with fluctuations of additional workforce required during major maintenance activities.
Hours of operation	Construction of Snowy 2.0 will be 24/7 and 365 days per year. Operation of Snowy 2.0 will be 24/7 and 365 days per year.
Capital investment value	Estimated to be $4.6 billion.

Figure 5 Snowy 2.0 project overview



Snowy 2.0 project elements

Snowy 2.0
Social impact assessment
Main Works
Figure 2.1

2.2 Construction of Snowy 2.0

A number of construction activities will be carried out concurrently, and across a number of different sites. Specific details on these activities as well as an indicative schedule of construction activities is provided in Chapter 2 (Project description) of the EIS. This section summarises the key construction elements of the project.

Table 3 provides an overview of the construction elements, their purpose and location within the project area.

Table 3 Snowy 2.0 construction elements

Element	Purpose	Location
Construction sites	Due to the remoteness of Snowy 2.0, construction sites are generally needed to: » Provide ancillary facilities such as concrete batching plants, mixing plants and on-site manufacturing; » Store machinery, equipment and materials to be used in construction; » Provide access to underground construction sites; and » Provide onsite accommodation for the construction workforce.	Each construction site needed for Snowy 2.0 is shown on Figures 4 to Figure 9.
Substations and power connection	One substation is required to provide permanent power to Snowy 2.0, at Lobs Hole. This substation is proposed as part of a modification to the Exploratory Works with a capacity of 80 mega volt amp (MVA). It will continue to be used for Main Works, however requires the establishment of further power supply cables to provide power to the work sites and TBM at Tantangara, as well as Talbingo, in particular to power the TBMs via the MAT, ECVT, Talbingo and Tantangara portals.	The supporting high voltage cable route mostly follows access roads to each of the work sites, using a combination of aerial and buried arrangements.
Communications system	Communications infrastructure will connect infrastructure at Tantangara and Talbingo reservoirs to the existing communications system at the Tumut 3 power station (via the submarine communications cable in Talbingo Reservoir established during Exploratory Works) and to Snowy Hydro's existing communications infrastructure at Cabramurra.	The cable will be trenched and buried in conduits within access roads. Crossing of watercourses and other environmentally sensitive areas will be carried out in a manner that minimises environmental impacts where possible, such as bridging or underboring.
Water and waste water servicing	Drinking water will be provided via water treatment plants located at accommodation camps. Water for treatment will be sourced from the nearest reservoir. There are three main wastewater streams that require some form of treatment before discharging to the environment, including: » tunnel seepage and construction wastewater (process water); » domestic sewer (wastewater); and » construction site stormwater (stormwater).	Utility pipelines generally follow access roads. Water treatment plants (drinking water) will be needed for the accommodation camps and will be located in proximity. Waste water treatment plants will similarly be located near accommodation camps. Process water treatment plants will be at construction

Element	Purpose	Location
		compounds and adits where needed to manage tunnel seepage and water during construction.
Temporary and permanent access roads	Access road works are required to: » provide for the transport of excavated material between the tunnel portals and the excavated rock emplacement areas; » accommodate the transport of oversized loads as required; and » facilitate the safe movement of plant, equipment, materials and construction workers into and out of construction sites. The access road upgrades and establishment requirements are shown on Figure 2.2 to Figure 2.6. These roads will be used throughout construction including use of deliveries to and from site and the external road network. Some additional temporary roads will also be required within the footprint to reach excavation fronts such as various elevations of the intakes excavation or higher benches along the permanent roads.	The access road upgrades and establishment requirements are shown across the project area. Main access and haulage to site will be via Snowy Mountains Highway, Link Road and Lobs Hole Ravine Road (for access to Lobs Hole), and via Snowy Mountains Highway and Tantangara Road (for access to Tantangara Reservoir) (see Figure 10).
Excavated rock management	Approximately 9 million m^3 (unbulked) of excavated material will be generated by construction and require management. The strategy for management of excavated rock will aim to maximise beneficial reuse of materials for construction activities. Beneficial re-use of excavated material may include use for road base, construction pad establishment, selected fill and tunnel backfill and rock armour as part of site establishment for construction. Excess excavated material that cannot be re-used during construction will be disposed of within Talbingo and Tantangara reservoirs, used in permanent rehabilitation of construction pads to be left in situ in Lobs Hole, or transported for on-land disposal if required.	Placement areas are shown on Figure 6, Figure 10 and Figure 11.
Barge launch facilities	Barge launch facilities on Talbingo Reservoir will have already been established during Exploratory Works for the placement of the submarine communications cable, and will continued to be used for Main Works for construction works associated with the Talbingo intake structure. The Main Works will require the establishment of barge launch facilities on Tantangara Reservoir to enable these similar works (removal of the intake plug).	Barge launch sites are shown on Figure 6, Figure 10 and Figure 11.
Construction workforce	The construction workforce will be accommodated entirely on site, typically with a FIFO/DIDO roster. Private vehicles will generally not be permitted and the workforce bused to and from site.	Access to site will be via Snowy Mountains Highway

The key areas of construction are shown on Figure 6 to Figure 11 and can be described across the following locations:

» **Talbingo Reservoir** – Talbingo Reservoir provides the lower reservoir for the pumped hydro-electric project and will include the tailrace tunnel and water intake structure. The site will also be used for temporary construction compounds and other temporary ancillary activities;

» **Lobs Hole** – this site will be used primarily for construction (including construction of the MAT and ECVT portals and tunnels to the underground power station and the headrace tunnel (and headrace tunnel surge shaft), underground tailrace surge shaft and a temporary accommodation camp);

» **Marica** – the site will be used primarily for construction to excavate the ventilation shaft to the underground power station as well as for the excavation and construction of the headrace surge shaft;

» **Plateau** – the land area between Snowy Mountains Highway and Tantangara Reservoir is referred to as the Plateau. The Plateau will be used to access and construct a utility corridor, and construct a fish weir on Tantangara Creek;

» **Tantangara Reservoir** – Tantangara Reservoir will be the upper reservoir for the pumped hydro project and include the headrace tunnel and intake structure. The site will also be used for a temporary construction compound, accommodation camp and other temporary ancillary activities; and

» **Rock Forest** – a site to be used temporarily for logistics and staging during construction. It is located beyond the KNP along the Snowy Mountains Highway about 3 km east of Providence Portal.

During the construction phase, all work sites will be restricted access and closed to the public. This includes existing road access to Lobs Hole via Lobs Hole Ravine Road. Restrictions to water-based access and activities will also be implemented for public safety and to allow safe construction of the intakes within the reservoirs. Access to Tantangara Reservoir via Tantangara Road will be strictly subject to compliance with the safety requirements established by the contractor.

A key construction element for the project is the excavation and tunnelling for underground infrastructure including the power station, power waterway (headrace and tailrace tunnels) and associated shafts. The primary methods of excavation are shown in Figure 12 and include with further detail on construction methods provided at Appendix D of the EIS.

Figure 6 Snowy 2.0 construction areas – Talbingo Reservoir

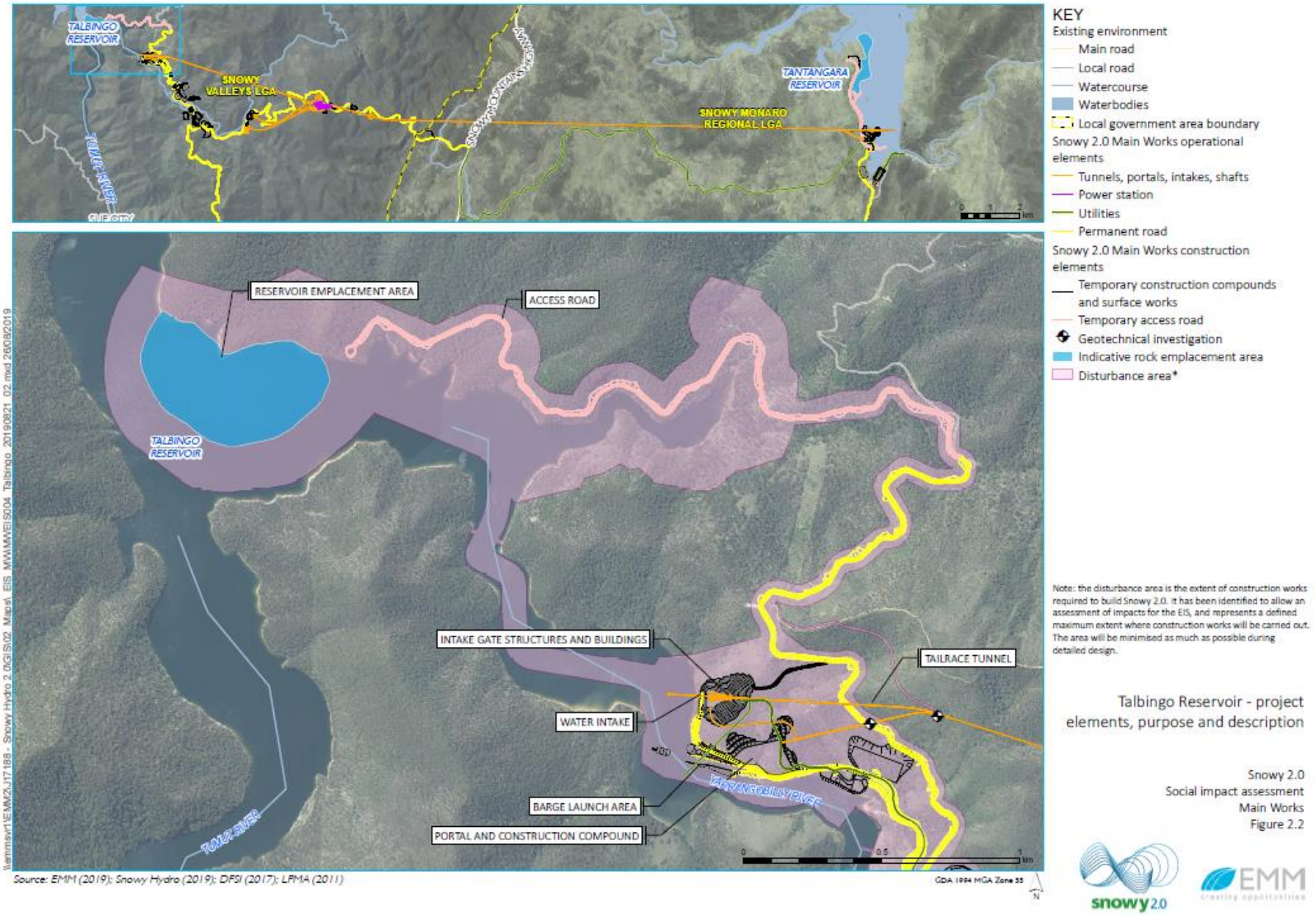


Figure 7 Snowy 2.0 construction areas – Lobs Hole

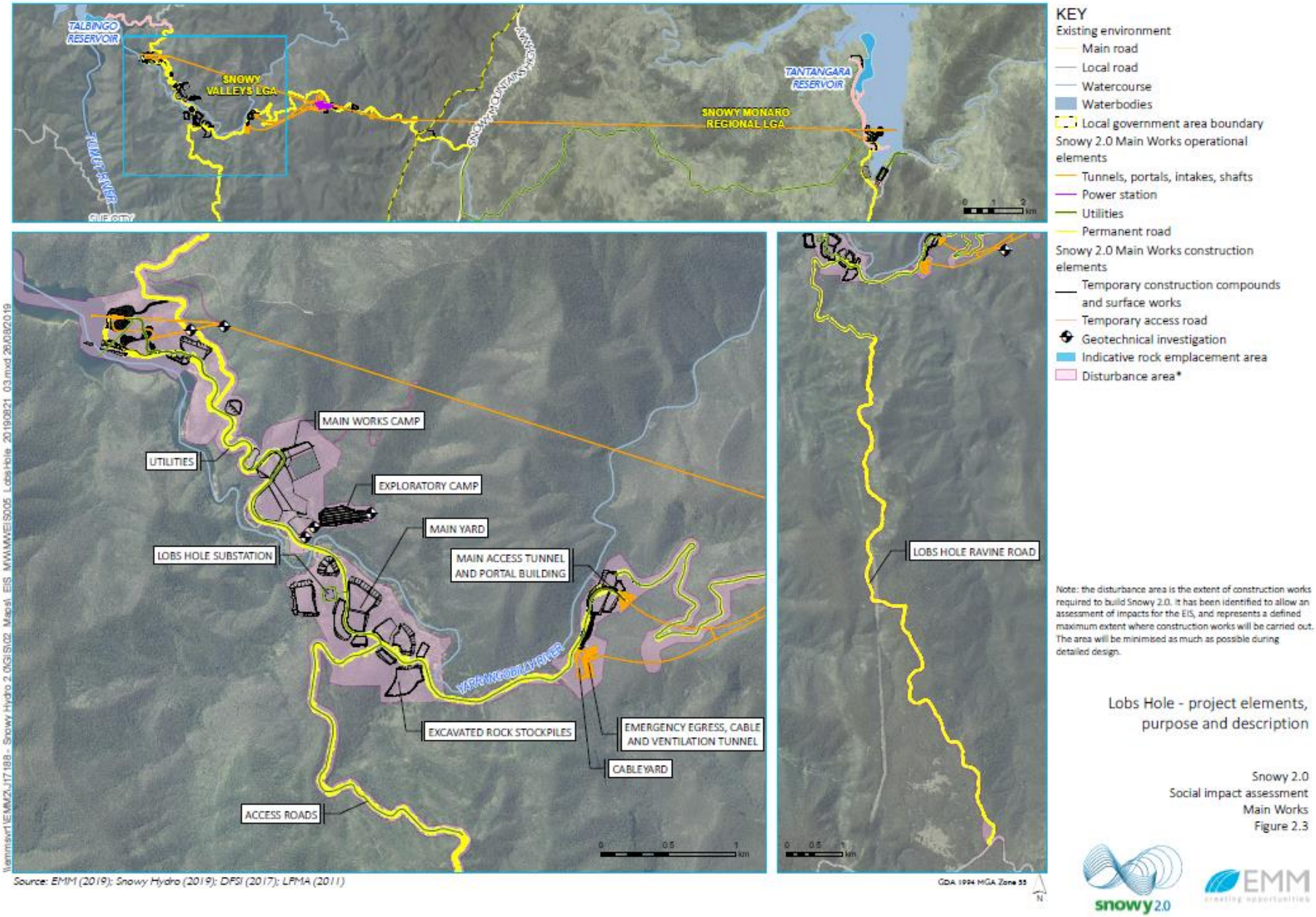


Figure 8 Snowy 2.0 construction areas - Marica

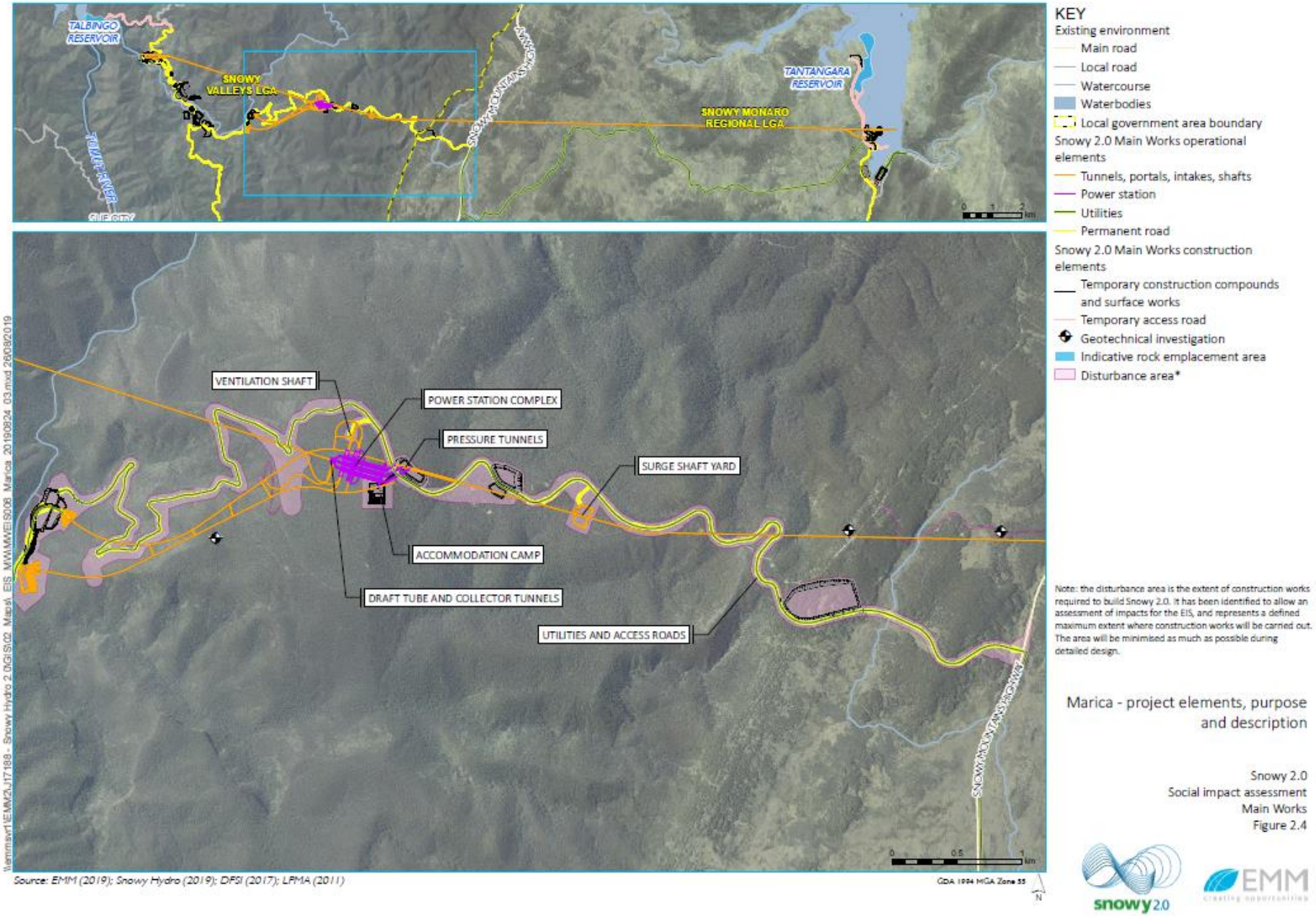


Figure 9 Snowy 2.0 construction areas - Plateau

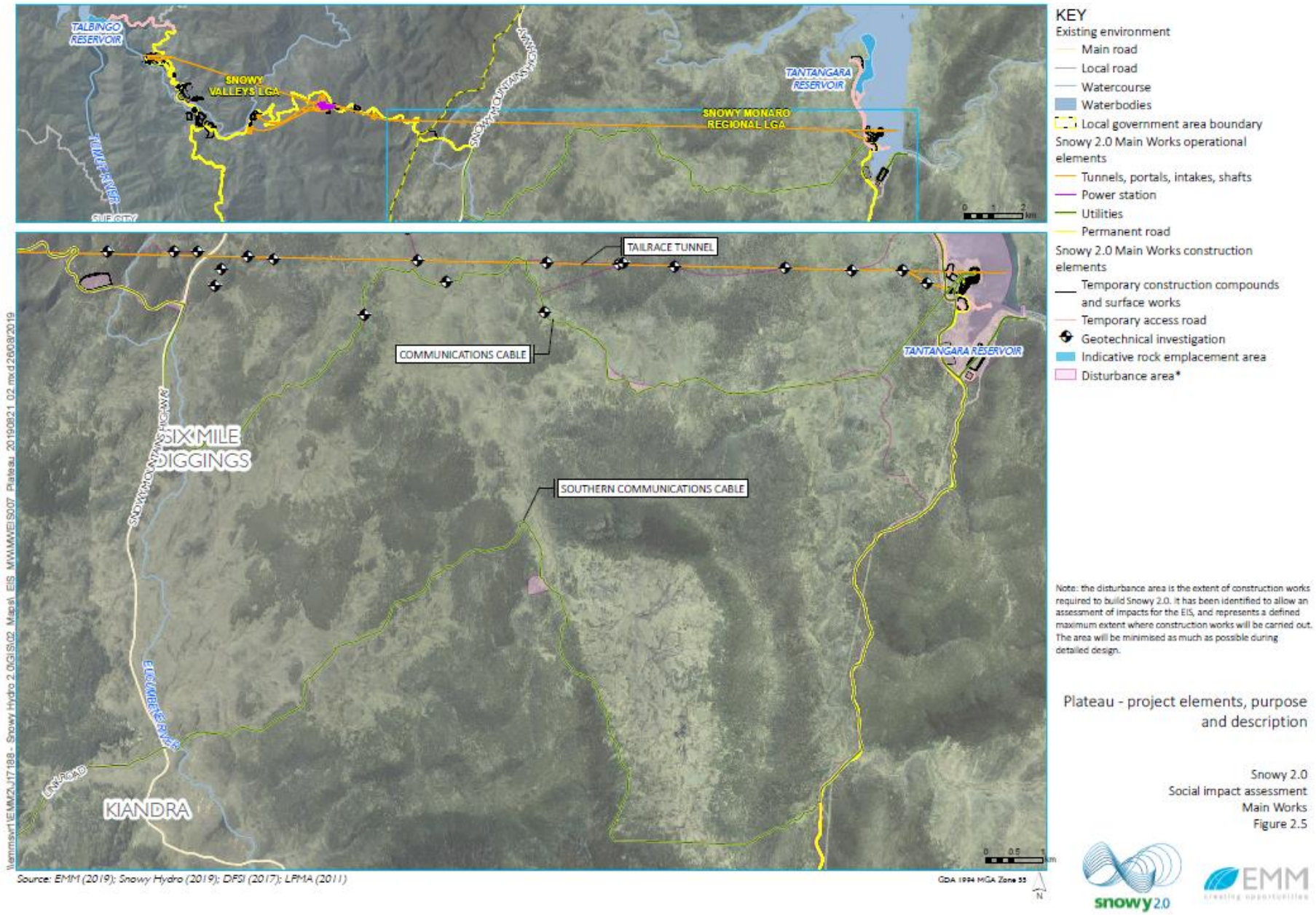


Figure 10 Snowy 2.0 construction areas – Tantangara Reservoir

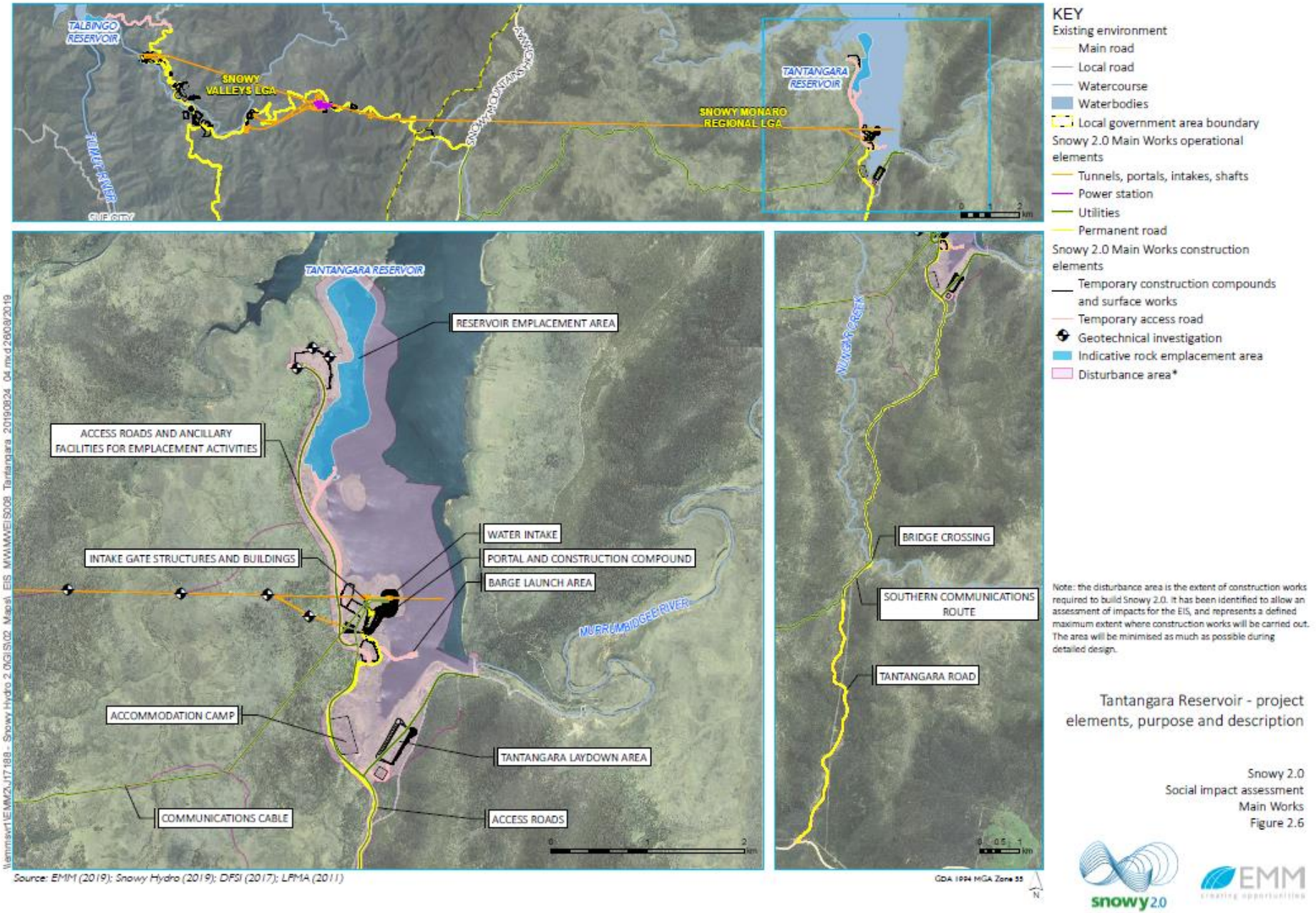


Figure 11 Snowy 2.0 construction areas – Rock Forest

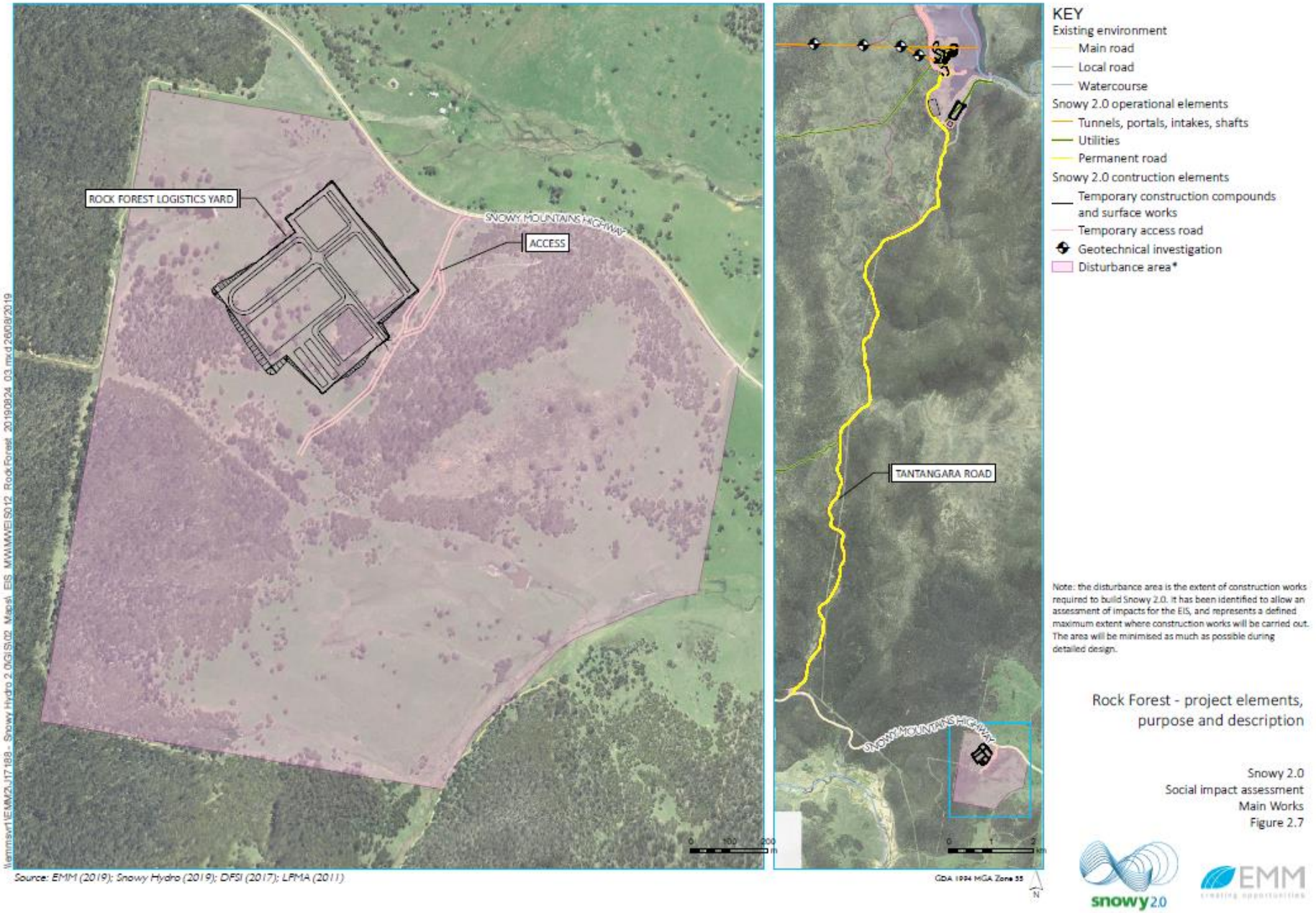
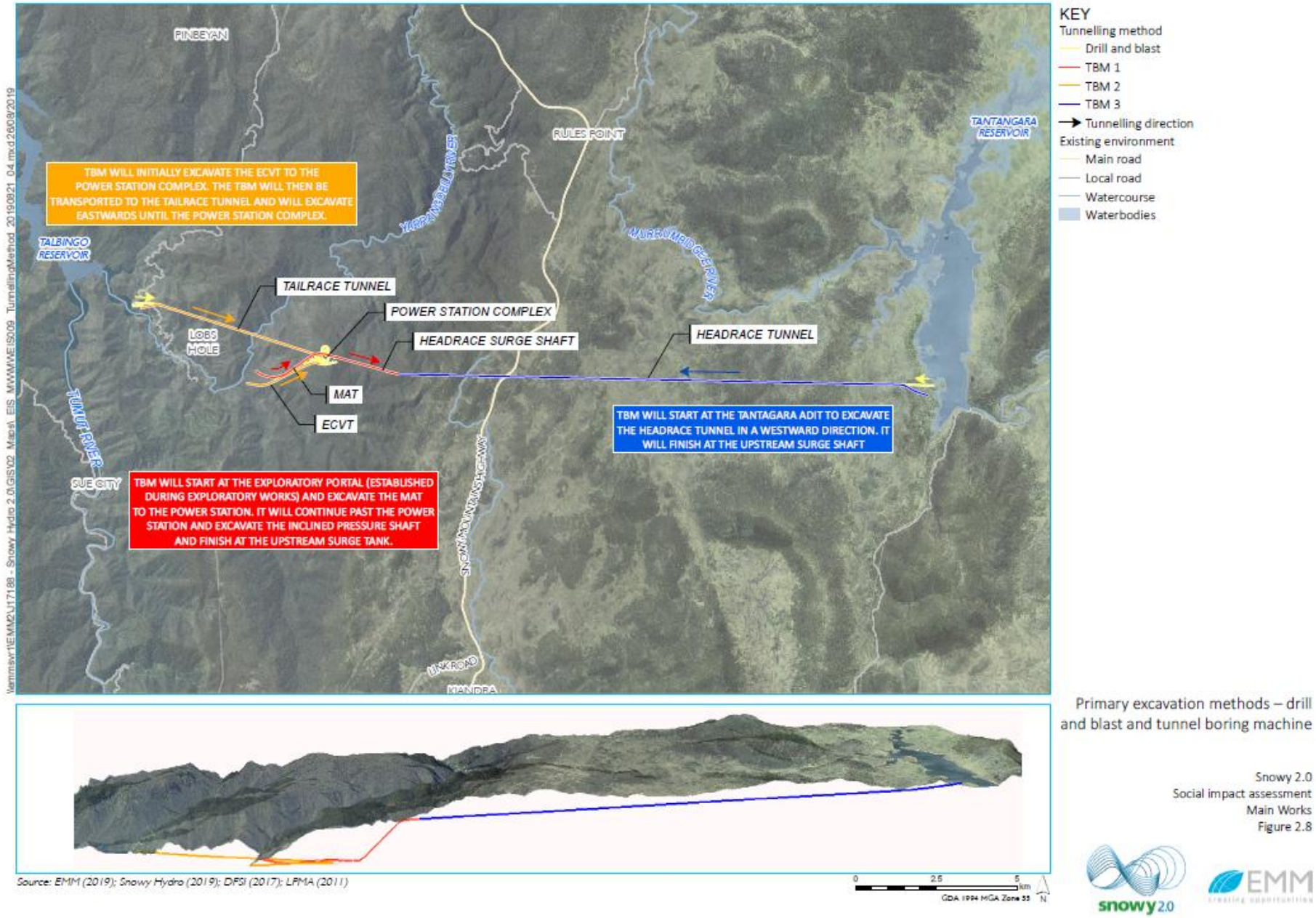


Figure 12 Snowy 2.0 excavation and tunnelling methods



2.3 Operation of Snowy 2.0

2.3.1 Scheme operation and reservoir management

Snowy 2.0 would operate within the northern Snowy-Tumut Development, connecting the existing Tantangara and Talbingo reservoirs.

Tantangara Reservoir currently has the following operational functions within the Snowy Scheme:

» collects releases from the Murrumbidgee River and the Goodradigbee River Aqueduct,

» provides a means for storage and diversion of water to Lake Eucumbene via the Murrumbidgee-Eucumbene Tunnel, and

» provides environmental releases through the Tantangara Reservoir river outlet gates to the Murrumbidgee River.

Talbingo Reservoir currently has the following operational functions:

» collects releases from Tumut 2 power station,

» collects releases from the Yarrangobilly and Tumut rivers,

» acts as head storage for water pumped up from Jounama Pondage, and

» acts as head storage for generation at Tumut 3 power station.

Due to its historic relationship to both the upstream Tumut 2 power station and downstream Tumut 3 power station, Talbingo Reservoir has had more operational functions than Tantangara Reservoir in the current Snowy Scheme.

Following the commencement of the operation of Snowy 2.0, both Tantangara and Talbingo reservoirs will have increased operational functions. Tantangara Reservoir will have the additional operational functions of acting as a head storage for generation from the Snowy 2.0 power station and also acting as a storage for water pumped up from Talbingo Reservoir. Talbingo Reservoir will have the additional operational function of acting as a tail storage from Snowy 2.0 generation.

As a result of the operation of Snowy 2.0, the water level in Tantangara Reservoir will be more variable than historically. Notwithstanding this, operations will not affect release obligations under the Snowy Water Licence nor will it involve any change to the currently imposed Full Supply Levels (FSLs). No additional land will be affected by virtue of the inundation of the reservoirs through Snowy 2.0 operations. Water storages will continue to be held wholly within the footprint of the existing FSLs.

2.3.2 Permanent access

Permanent access to Snowy 2.0 infrastructure is required. During operation, a number of service roads established during construction will be used to access surface infrastructure including the power station's ventilation shaft, water intake structures and gates, and the headrace tunnel surge shaft. Permanent access tunnels (the MAT and ECVT) will be used to enter and exit the power station. For some roads, permanent access by Snowy Hydro will require restricted public access arrangements.

2.3.3 Maintenance requirements

Maintenance activities required for Snowy 2.0 will be integrated with the maintenance of the existing Snowy Scheme. Maintenance activities that will be required include:

» maintenance of equipment and systems within the power station complex, intake structures, gates and control buildings;

» maintenance of access roads (vegetation clearing, pavement works, snow clearing);

» dewatering of the tailrace and headrace tunnel (estimated at once every 15 to 50 years, or as required); and

» maintenance of electricity infrastructure (cables, cable yard, cable tunnel).

2.3.4 Rehabilitation and final land use

A Rehabilitation Strategy has been prepared for Snowy 2.0 Main Works and appended to the EIS.

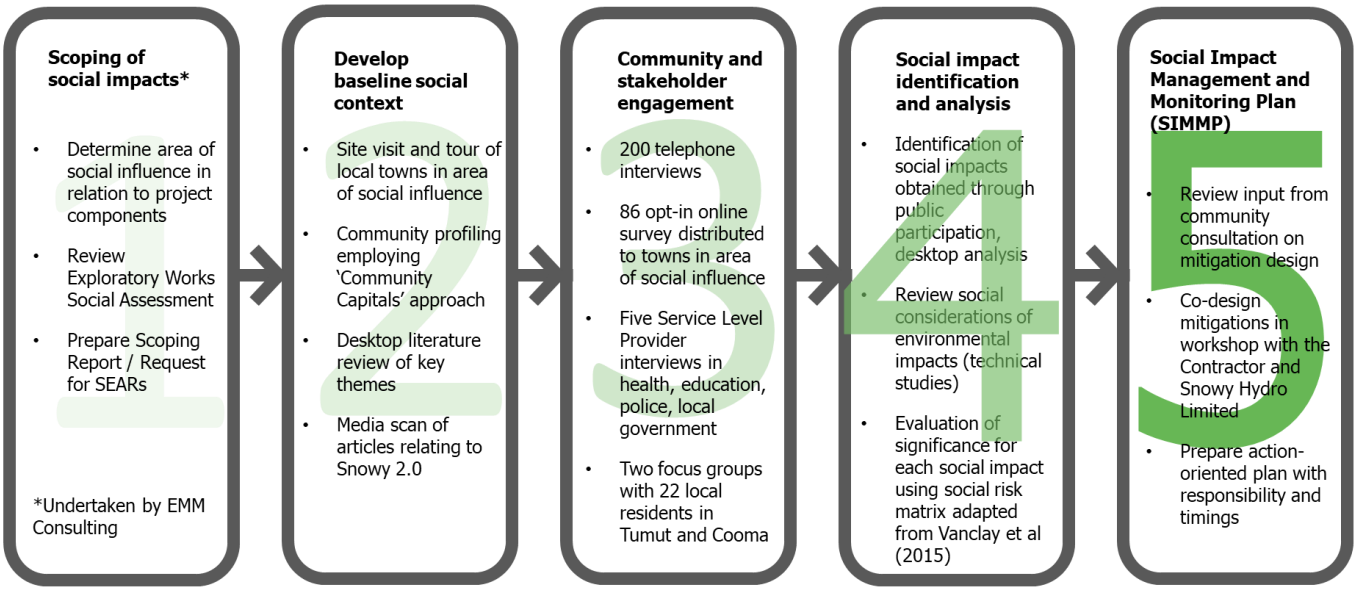
It is proposed that all areas not retained for permanent infrastructure will be revegetated and rehabilitated. At Lobs Hole, final landform design and planning has been undertaken to identify opportunities for the reuse of excavated material in rehabilitation to provide landforms which complement the surrounding topography in the KNP.

Given that most of Snowy 2.0 Main Works is within the boundaries of the KNP, Snowy Hydro will liaise closely with NPWS to determine the extent of decommissioning of temporary construction facilities and rehabilitation activities to be undertaken following the construction of Snowy 2.0 Main Works.

3 Approach and methodology

This Section outlines how the approach and tasks involved in the preparation of the SIA respond appropriately to the current stage of planning for the Project phase. This includes an overview of SIA and its key objectives, the specific methods used to collect primary and secondary data and information, and the stakeholders involved in shaping the content. An overview of the five key stages of SIA development is provided below.

Figure 13 Overview of assessment methodology



3.1 Social impact assessment guidelines and standards

The methodological approach used for this SIA was guided by international social impact assessment principles and methods as described in *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay 2015), and endorsed by the International Association for Impact Assessment (IAIA). The approach is further guided by the DPIE *Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development* released in September 2017. The principles of social impact assessment used in this report have been adapted from both the DPIE SIA Guideline and the Vanclay (2015) guidance document.

Table 4 Principles used to guide social impact assessment

Principle	Description
Action-oriented	Delivers outcomes that are practical, achievable and effective.
Adaptive	Establishes systems to actively respond to new or different circumstances and information and support continuous improvement.
Distributive equity	Considers how social impacts are distributed within the current generation (particularly across vulnerable and under-represented groups) and between current and future generations.
Impartial	Is undertaken in a fair, unbiased manner and follows relevant ethical standards.

Principle	Description
Inclusive	Seeks to hear, understand and respect the perspectives of the full diversity of potentially affected groups of people. It is also informed by respectful, meaningful and effective engagement that is tailored to suit the needs of those being engaged (for example, culturally sensitive, accessible)
Integrated	Uses and references relevant information and analysis from other assessments to avoid duplication and double counting of impacts in the future assessments. It also supports effective integration of social, economic and environmental considerations in decision-making.
Life cycle focus	Seeks to understand potential impacts (including cumulative impacts) at all project stages.
Material	Identifies which potential social impacts matter the most, and/or pose the greatest risk to those expected to be affected.
Precautionary	If there is a threat of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental (including social) degradation.
Proportionate	Scope and scale should correspond to the potential social impacts.
Rigorous	Uses appropriate, accepted social science methods and robust evidence from authoritative sources.
Transparent	Information, methods and assumptions are explained, justified and accessible; and people can see how their input has been considered.

Table 5 Relevant social impact assessment guidelines

Guideline	Relevance
Social Impact Assessment: Guidance for assessing and managing the social impacts of projects (Vanclay 2015)	The IAIA defines social impact assessment as the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.
Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development (DPIE 2017)	The NSW Department of Planning, Industry and Environment released this guideline for use in the State significant resource projects. Given the close alignment to the 2015 IAIA guidance for preparing SIAs this guideline is applicable to the nature of Snowy 2.0 Main Works. It acknowledges that SIA is the process of identifying, predicting, evaluating and developing responses to the social impacts of a proposed State significant project, as part of the overall EIA of that project. SIA is not a one-size-fits-all process and needs to be proportionate and tailored to suit the project's context and nature and scale of its impacts.

3.2 Scoping social impacts

The scoping component of this SIA was completed by EMM Consulting as part of the Main Works EIS Scoping Report. It drew upon the extensive work completed during preparation of the Exploratory Works SA with regard to the nature of the project area and its surrounding communities. Areas of social impact identified during the scoping phase for Main Works included health, safety, community facilities and services, housing availability and social cohesion. These issues have been included and expanded upon in this SIA.

3.3 Social baseline context development

Defining the area of social influence

By definition all social impacts relate to people and their welfare. For this SIA, this means that defining an area of social influence required going beyond the Project's geographic location (as described in Section 1.2). The area of social influence takes into account the way people organise themselves and move around the broader geographic area.

For the Exploratory Works SA, the area of social influence was divided into two distinct areas:

» immediate Project area in the KNP where material impacts such as noise and reduced access to recreational areas would be felt

» broader Snowy Monaro Regional and Snowy Valleys LGAs and major traffic corridors where transportation activities will occur (EMM Consulting 2019)

For this SIA, the area of social influence was determined by identification of the main place-based communities where people live, work and visit, as well as the existing networks of travel between them. As a result of this approach, the area of social influence for the Project ends up being made up of townships, employment locations, recreational areas and major roads that are connected to the location of Project construction works.

This approach to defining the area of social influence means that each key inhabited area is considered as its own potentially affected place-based community:

» worker accommodation camps and worksite locations

» villages and townships nearby the Project location

» major connecting roads

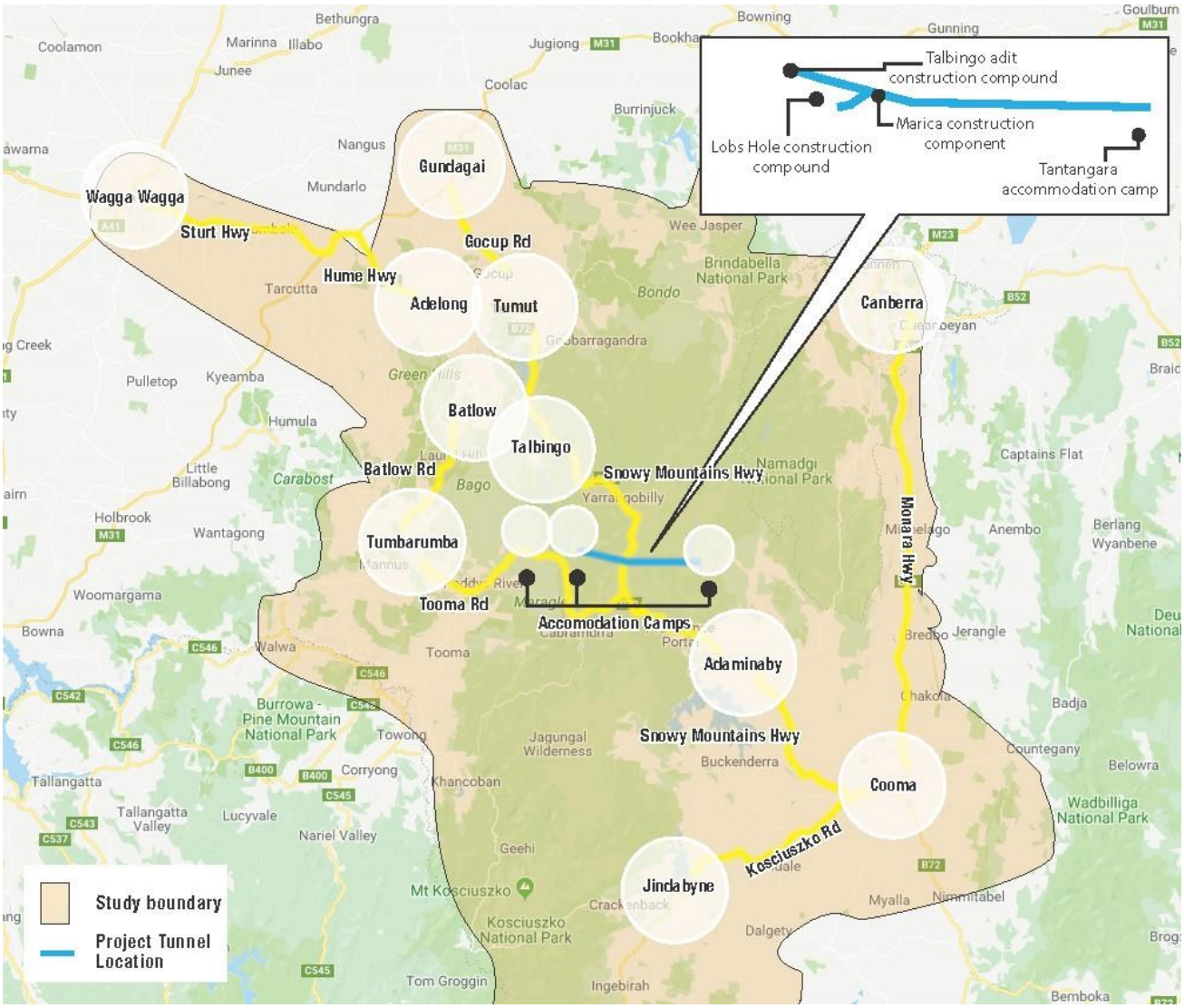
» major cities providing core services to villages and townships nearby the Project location.

A map of the Project's area of social influence is shown in Figure 14. A baseline description of each key place-based community within the area of social influence is provided at Annexure D-1.

This SIA also analyses the spatial distribution of potential social impacts. The area of social influence map is presented in the conclusion of this SIA as a 'hot spot' map to show where clusters of social impact categories are expected to occur (see Section 7).

In addition to variable spatial distribution of social impacts, there will also be temporal variance during the construction and operation phases of the Project due to fluctuations in worker numbers across different project phases (see Annexure F for additional detail).

Figure 14 Project area of social influence



Key social context considerations

To develop the social context baseline understanding of the Project and set a foundation for analysing social impacts, this SIA has included a review of:

» relevant local and state policy and planning documents

» literature review of articles relating to Fly In/Fly Out workforces and potential impacts on local townships

» desktop scan of media content relating to the Snowy 2.0 Project.

The policy and planning documents highlighted the interrelationships between local and state planning policies. Both Snowy Valleys Council and Snowy Monaro Regional Council discuss how Snowy 2.0 is expected to deliver a range of regional and local benefits as a major infrastructure project as well as lead to 'planning pressures' as a result of the incoming workforce.

The literature review covered areas of potential social impact commonly seen in large-scale infrastructure projects. While the bulk of literature was taken from research relating to non-pumped hydro projects, some relevant comparisons can be made with aspects of Snowy 2.0. Key considerations related to the need to monitor the impacts of the temporary workforce from a health, wellbeing and safety perspective both on the workforce themselves and local communities.

Media coverage of the Project points to a high level of awareness of the Project in the towns across the area of social influence. Most sentiment seemed supportive of the Project while some expressed scepticism of the benefit projected to materialise in the energy market.

A full summary of all documents reviewed is provided at Annexure C.

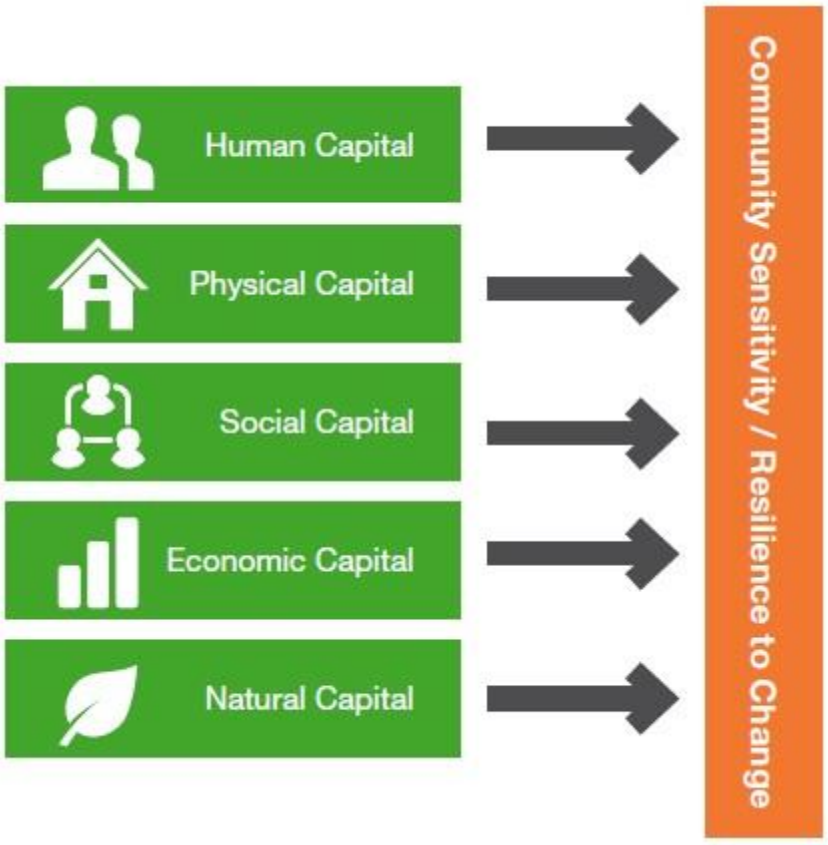
3.4 Assessment of community capital

To understand people's existing capacity to cope with change across the area of social influence, a Sustainable Livelihoods Approach (SLA) was used to guide the assessment of levels of community resilience in the Project's area of social influence. The SLA refers to a way of thinking about communities and people in terms of their capabilities, livelihood resources (assets, capitals) and the livelihood strategies (activities) they undertake to make their living and conduct their way of life (Vanclay 2015).

A livelihood refers to the way of life of a person or household and how they secure the basic necessities of life, e.g. their food, water, shelter and clothing, and live in the community. Livelihoods are interdependent on each other and on the biophysical environment. A livelihood is sustainable when it can cope with and recover from stresses and shocks (i.e. is resilient) and maintain or enhance its capabilities and assets both now and into the future while not undermining the natural environment's resource base.

Important research published by Coakes and Sadler in 2011 supports the concept that there are multiple forms of livelihood, or 'community capital' assets within communities and, when viewed collectively, these can assist to understand how sensitive communities might be to changes in their environment (Coakes and Sadler 2011). This SIA has adapted used this 'community capitals' approach as a conceptual model to summarise the social baseline of our affected communities. The five key community capitals (or livelihood assets) that collectively create community capacity and resilience are natural, economic, physical, human and social (shown in Figure 15 below).

Figure 15 Community capitals approach



Source: Adapted from Figure 19.4 *Elements of the five capital areas* in Coakes and Sadler (2011)

The community capitals analysis approach views different types of assets as interrelated and linked, meaning that where one type of capital is compromised, other capitals are likely to also be affected (Coakes and Sadler 2011). In general, the more assets that a community has across the types of capital, and the more diverse the overall

portfolio of assets are, there is an increased likelihood that communities will be resilient when faced with changes in their social environment.

A relevant example in the context of the Project's area of social influence could be how water (part of natural capital) has led to the development of the key local industry of energy production (economic capital) run by skilled employees (human capital) who manage its dam infrastructure (physical capital). The dam plays an important role in wellbeing through providing opportunities for recreation (social capital). An environmental change in seasonal rainfall (natural capital) could have diverse and concurrent consequences for irrigation and water management (human capital), agriculture (economic capital), dam water levels (physical capital) and access to recreational fishing (social capital).

For the purposes of data analysis, the LGAs of both Snowy Valleys and Snowy Monaro Regional are used as proxy to characterise the demographics of the overall area of social influence, on the basis that most of the place-based communities examined fall within these two LGAs.

Section 4 of this SIA describes each of the five community capitals according to:

» scoping of availability of assets under each capital

» indicators of each capital to measure current asset performance

» assessment of each capital for strengths and vulnerabilities.

Summary of social indicators

The following data points were used in the development of the social baseline context. They assist to creating a picture of the existing socio-economic circumstances of those likely to be affected by Snowy 2.0 Main Works.

Table 6 Indicators used in social context baseline analysis

Social Indicator	Source
National capital	
Economic value of tourism	Australian Government - Austrade & Tourism Research Australia, Regional Tourism Satellite Account 2016-17 (Australian Trade and Investment Commission 2019)
Employment in natural resource-based industries	Australian Bureau of Statistics, Census Time Series for Snowy Valleys (A) and Snowy Monaro Regional (A) – Table T34, 2016 (Australian Bureau of Statistics 2016)
Self-reported sense of rural identity	Community engagement activities undertaken as part of this SIA.
Physical capital	
Government school enrolment trends	Australian Curriculum, Assessment and Reporting Authority, My School, 2013-2017 (Australian Curriculum - Assessment and Reporting Authority 2019)
Number of registered motor vehicles	Australian Bureau of Statistics, Number of motor vehicles, 2016 (Australian Bureau of Statistics 2016)
Method of travel to work	Australian Bureau of Statistics, Travel to work, 2016 (Australian Bureau of Statistics 2016)
Working from home	Australian Bureau of Statistics, Travel to work, 2016 (Australian Bureau of Statistics 2016)
Mobile phone coverage	Department of Communications and the Arts, Mobile Black Spot Program, 2019 (Department of Communications and the Arts 2019)
	Department of Communications and the Arts, Mobile Black Spot Program – Priority Locations, 2019 (Department of Communications and the Arts 2019)

Social Indicator	Source
Internet access from home	Australian Bureau of Statistics, Dwellings – internet connection, 2016 (Australian Bureau of Statistics 2016)
Dwelling count	Australian Bureau of Statistics, Dwellings – dwelling structure: dwelling count, 2016 (Australian Bureau of Statistics 2016)
Dwelling structure	Australian Bureau of Statistics, Dwellings – dwelling structure, 2016 (Australian Bureau of Statistics 2016)
Economic capital	
Labour force participation	PHIDU, Population health area, 2016 (PHIDU 2017)
Income support	PHIDU, Population health area, 2017 (PHIDU 2018)
Unemployment rate	Australian Bureau of Statistics, People – employment, 2016 (Australian Bureau of Statistics 2016)
Occupation type	Australian Bureau of Statistics, Occupation, 2016 (Australian Bureau of Statistics 2016)
Household income	Australian Bureau of Statistics, Median weekly incomes – Personal, 2016 (Australian Bureau of Statistics 2016)
	Australian Bureau of Statistics, Median weekly incomes – Family, 2016 (Australian Bureau of Statistics 2016)
	Australian Bureau of Statistics, Median weekly incomes – Household, 2016 (Australian Bureau of Statistics 2016)
Rent and mortgage repayments	Australian Bureau of Statistics, Dwellings – mortgage & rent, 2016 (Australian Bureau of Statistics 2016)
Human capital	
Population size	Australian Bureau of Statistics, Community profile time series, 2016 (Australian Bureau of Statistics 2016)
Age characteristics	Australian Bureau of Statistics, Community profile time series, 2016 (Australian Bureau of Statistics 2016)
Education institution attending	Australian Bureau of Statistics, Education, 2016 (Australian Bureau of Statistics 2016)
Educational attainment	Australian Bureau of Statistics, Level of highest educational attainment, 2016 (Australian Bureau of Statistics 2016)
Population health	Local Health District/Southern NSW LHD, HealthStats NSW: Southern NSW LHD, 2016 (HealthStats NSW 2016)
Moto vehicle crash leading to hospitalisation	Local Health District/Southern NSW LHD, HealthStats NSW: Motor vehicle crash leading to hospitalisation, 2016 (HealthStats NSW 2016)
Other health indicators	PHIDU, health data, 2017 (PHIDU 2017)
Index of relative socio-economic advantage and dis advantage	Australian Bureau of Statistics, TableBuilder: Index of relative socio-economic advantage and disadvantage, 2016 (Australian Bureau of Statistics 2016)
Social capital	
Community strength indicators	PHIDU, health data, 2017 (PHIDU 2017)

Social Indicator	Source
Crime rates	Australian Police, The Thin Blue Line, 2019 (Australian Police 2019)
	Bureau of Crime Statistics and Research, Recorded crime reports, 2019 (BOSCAR 2019)
	Bureau of Crime Statistics and Research, Interactive crime map, 2019 (BOSCAR 2019)
Cultural diversity	Australian Bureau of Statistics, Cultural Diversity in Australia, 2016 (Australian Institute of Health and Welfare 2017)

3.5 Community and stakeholder engagement

Extensive community and stakeholder engagement activities have been undertaken by Snowy Hydro Limited leading up to the Project; from preparation of the Exploratory Works SA and also during the preparation of the Main Works EIS. The engagement activities detailed in this section acted to complement and build on engagement already undertaken. The purpose was also to apply a social impact-specific lens to the questions so the findings could better inform the development of this SIA.

The following community engagement activities were undertaken to target the area of social influence:

» 200 Computer Assisted Telephone Interview (CATI) surveys of a representative sample of residents by target gender, age groups and postcodes across the area of social influence.

» 86 'opt in' online surveys completed by a register of interested people on a Snowy Hydro contact list and visiting patrons at the Snowy Hydro Discovery Centre in Cooma.

» two focus groups with a total representative sample of 22 local residents, one held in Cooma and one in Tumut in January 2019. Participants were recruited from the CATI survey and provided with a monetary payment. The focus groups were facilitated by Elton Consulting and an observer present from Snowy Hydro Limited.

» five Service Level Provider interviews with representatives from NSW Department of Education, Murrumbidgee Local Health District, Snowy Valleys Council, Snowy Monaro Regional Council and NSW Police.

Survey outcomes

Survey questions were designed around a list of pre-identified expected social impact areas informed by a review of prior community and stakeholder engagement and social assessments undertaken for Exploratory Works. The identified topic areas were:

» traffic on roads

» house prices

» local jobs

» demand on community infrastructure and services

» access to recreation activities

» neighbourhood safety.

The survey asked respondents to rank each social impact on a ten-point scale in terms of how likely they thought each impact area would affect them (the respondent) or their family during the main construction period. The scale ranged from 0 (very negative) to 10 (very positive). Respondents were provided open ended opportunities to then to expand on their response. For people who responded 0-3 on the scale, we asked them what they thought could be done to mitigate against the negative impact in question. Likewise, for those who responded 7-10 we asked what they thought could be done to make the most of the positive impact in question.

An identical survey instrument was used for both the telephone and online survey. The full survey questions can be found at Annexure B-1-12.

The phone and online survey results were analysed side by side. Key findings from the surveys were explored further during the two focus groups, with outcomes summarised at Annexure B-1-12.

Prioritisation of social impact areas

Overall, the majority of community consultation participants believed the social impacts presented to them would lead to mainly neutral impacts for themselves and their families. In addition, most people felt collectively positive toward the potential social impacts rather than negatively.

Table 7 indicates how each social impact area was ranked. This is based on those who responded with either a positive or negative expectation toward the impact. The table shows that each of the identified social impacts areas are able to be experienced differently as either positive or negative depending on individual perspectives.

The impact on the demand for community infrastructure and services is the only impact area that respondents ranked in both the top three positive and negative impacts expected. Neighbourhood safety is the only impact area that respondents ranked in both the bottom three positive and negative impacts expected.

Table 7 Significance ranking (CATI and online survey responses)

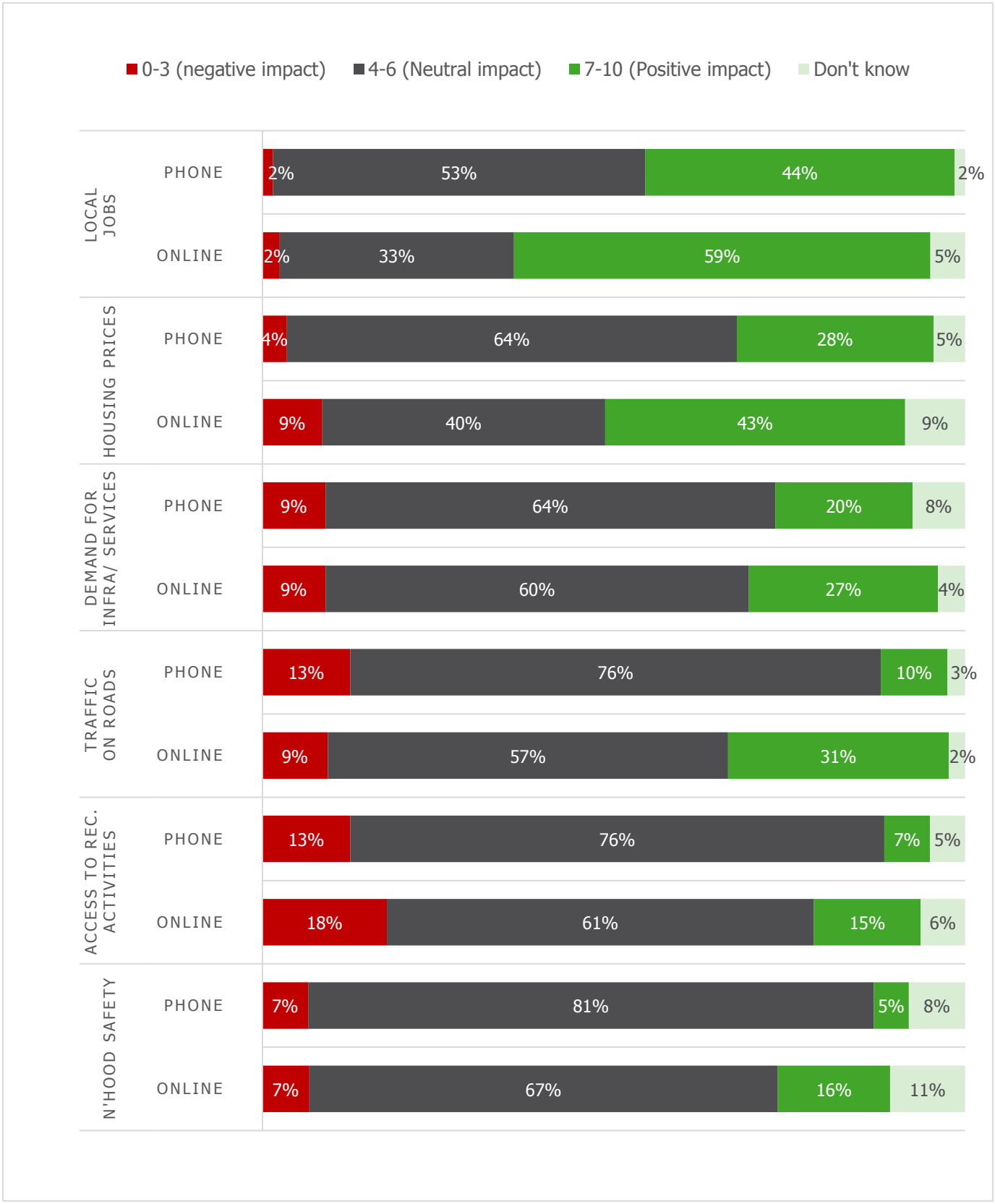
Positive	Area of social impact	Negative
4	Traffic on roads	**2**
2	House prices	5
1	Local jobs	6
3	Demand on community infrastructure and services	**3**
5	Access to recreation activities	**1**
6	Neighbourhood safety	4

Figure 16 provides a summary of responses gathered from both the online and CATI surveys. Of the six impact areas that were part of the survey, the majority (average 61%) of respondents thought each impact would have a 'neutral impact' on them or their families during the main construction period of the Project.

When percentages are averaged across the phone and online responses, people felt mostly positive about the impact on local jobs as a result of the Project. A strong preference and expectation for the proponent to source labour from local town was clearly evident in the open-ended responses. House prices were considered the second most positive impact expected to occur as a result of the Project, namely that the value of houses would increase.

Restricted access to recreational activities as a result of the construction works was thought to be the most negative potential impact from the Project. This was followed by concern about increased traffic on roads. Traffic was thought to be potentially affected by construction vehicles, delays and degradation of local roads. Conversely, some people expected that the Project would result in provision of better-quality roads after the construction works had ceased.

Figure 16 Survey responses to areas of social impact



The sample of community survey respondents is further broken down in Table 8 below.

Table 8 Survey respondents demographic breakdown

	Gender		Age		Location	
Phone survey	Male	58.5%	18 to 39	12.5%	Cooma, Adaminaby Jindabyne	34.5% 14.5% 0%
	Female	41.5%	40 to 59	45%	Tumut Talbingo Batlow/ Tumbarumba	28.5% 2.5% 20%
			60+	42.5%		
Online survey	Male	31.1%	18 to 39	13.1%	Cooma Adaminaby Jindabyne	2.3% 5.8% 8.1%
	Female	68.9%	40 to 59	46%	Tumut Talbingo Batlow/ Tumbarumba	11.6% 41.9% 3.5%
			60+	40.9%		

Focus group samples

Focus group participants were recruited during the CATI survey. Participants were selected based on their demographics being broadly representative of the existing population age profile.

Both focus groups were held on a weekday evening and ran for two hours. Both focus groups were facilitated by authors of the SIA (Elton Consulting). The sessions were also attended by a representative of Snowy Hydro Limited (as observer only).

The focus group questions were designed around a pre-identified list of expected social impact areas informed by a review of survey outcomes. The identified 'top issue' topic areas requiring further qualitative investigation were:

» housing availability

» local jobs

» demand on community infrastructure and services.

The agenda included:

» small group discussion of the social environment, trends being experienced and views on the future of the townships if the Project wasn't happening

» descriptions of peoples understanding of the Project

» mind mapping activity and brainstorming of ideas around impacts and their extent

» descriptions of peoples post-Project expectations

» opportunity to provide suggested mitigations.

Key findings from the focus groups are incorporated into the assessment of impacts, with some direct and paraphrased quotes provided throughout the SIA. Outcomes have not been summarised in further detail to protect the identity and privacy of attendees.

Table 9 Focus group demographic breakdown

	Gender		Age		Location	
Focus groups	Male	61.1%	18 to 39	27.7%	Cooma Adaminaby Jindabyne	22% 11% 11%
	Female	38.8%	40 to 59	44.4%	Tumut Talbingo	16% 11%
			60+	27.7%	Batlow Tumbarumba	11% 16%

Service level provider interviews

Service Level Provider interview participants were selected based on areas of impact requiring an assessment of current community infrastructure and service capacity. Discussion with representatives of each organisation outlined in Table 10 focused on general views of the capacity of services to respond to increased population-based demand, and how suggested mitigations might reasonably apply.

Table 10 Service level provider interviews

Organisation	Interview date	Discussion points
Snowy Valleys Council (Community Services Department)	26 April 2019	» Current trends in community service provision » Role of interagency meetings and Council grants programs » Aboriginal and Torres Strait Islander organisations and other target groups
Snowy Monaro Regional Council (Community Services Department)	30 April 2019	» Current trends in community service provision, including housing and homeless » Role of interagency meetings and grants programs » Youth sector and other target groups
NSW Police (Monaro Police District) (Crime Prevention)	30 April 2019	» Crime statistics for the local area, including road safety » Role of community safety meetings » Likely indicators of anti-social behaviour/ at risk groups.
NSW Health (Strategy and Planning Directorate)	6 May 2019	» Levels of demand for services and health trends » Tumut Service Plan and Tumut Hospital masterplan
Department of Education (School Infrastructure)	18 June 2019	» Role of schools as core community hub infrastructure » Enrolment data for public schools in Cooma and Tumut, including classroom capacity limits, number of demountable buildings » Potential risk of school 'exits'

3.6 Social impact identification and analysis

Social impacts presented in this SIA have been grouped according to the definitions shown in Table 11 (DPE, 2017).

Table 11 Social impact categories

Category	Description
Way of life	how people live, work, play and interact with each other on a daily basis
Community	its composition, cohesion, character, function and sense of place
Access to and use of infrastructure, services and facilities	whether provided by local, state, or the federal government, or by for-profit or not-for-profit organisations or volunteer groups
Culture	relating to shared beliefs, customs, values, storytelling, connections to land, places and buildings
Health and wellbeing	including physical and mental health
Surroundings	access to and use of ecosystem services, public safety and security, access to and use of nature and built environment and aesthetic value and/or amenity
Personal and property rights	whether someone's economic livelihoods are affected and whether they experience personal disadvantage
Decision-making systems	the extent to which people believe they can have their say in decisions that affect their lives, and are aware of and have access to grievance mechanisms
Fears and aspirations	related to one or all of the above or about the future of their community

Evaluation of significance of impacts

Each of the potential social impacts were evaluated for significance based on a range of factors including:

» the four impact characteristics that demonstrate the material effect of the impact (extent, duration, severity, sensitivity as described in Table 12)

» who specifically may be affected, adversely or positively, directly or indirectly, cumulatively and the level of concern or interest they feel about the matter (high, medium, low)

» when the potential impact, positive or negative, is expected to occur (pre-construction, construction, operation, closure or post-closure).

It is important to again note that some social impacts may affect some people differently, depending on the nature of the impact and each individual's circumstances. The evaluation of significance has considered the uneven experience of impacts by different people through attributing a social risk rating for the positive perspective of the impact as well as the negative. The evaluation of significance is undertaken from the perspective of the affected parties.

Evaluation of positive impacts are based on the level of interest, scale of improvement or benefit, level of importance placed on the improvement or benefit and the equity of its distribution and an assessment of the likelihood and the scale of improvement or benefit. Regarding positive social impacts of the Project, it is important to keep in mind how the Project will contribute to the social development and wellbeing of the local communities in question, as well as the State and region as a whole. Chapter 9 outlines the mitigation and enhancement strategies, management and monitoring for responses to social impacts.

Table 12 Impact characteristic definitions

Characteristic	Definition
Extent	The geographical area affected by the impact (or the number or proportion of people or population groups who are affected).
Duration	The timeframe over which the impact occurs
Severity	Scale or degree of change from the existing condition as a result of an impact

Characteristic	Definition
Sensitivity	Susceptibility or vulnerability of people, receivers or receiving environments to adverse changes caused by the impact, or the importance placed on the matter being affected. Attributes of sensitivity include: conservation status; intactness; uniqueness or rarity; resilience to change and capacity to adapt; replacement potential; impacts on vulnerable people; and/or of value or importance to the community

Source: DPIE Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development

Cumulative impacts refer to the interactions between the social impact from Snowy 2.0 Main Works and other approved or yet-to-start resource or other projects, or with reasonably foreseeable future development in the area that is likely to be affected by the project. The most immediate major projects with cumulative impacts for this project are the Snowy 2.0 Exploratory Works and the TransGrid Snowy 2.0 Transmission Connection Project. These projects have been considered in the evaluation of significance of social impacts where relevant.

The SIA compiled for Exploratory Works included some consideration of impacts that are also likely to be applicable to the Project. For the purposes of consultation with stakeholders, it was difficult to quarantine discussion or feedback about the Project based on which parts were attributable to different stages of the project. For the purpose of Exploratory Works analysis however, only impacts considered applicable to the locations and characteristics of that project scope were represented. This SIA therefore also refers back to the Exploratory Works SA to establish how those already identified social impacts might be proportionately exacerbated during the Main Works component of the Snowy 2.0.

Where the predicted social risk rating of impacts is potentially high or extreme but there was insufficient or limited evidence available, a 'worst-case' scenario was used for evaluation purposes and the precautionary principle applied.

Table 13 Consequence criteria for assessment of social risk rating

Consequence criteria	
Minimal	No discernible positive or negative changes caused by the impact
Minor	Small change caused by the impact, generally temporary or short term in duration Impacts confined to a small number of receivers within the proposed development locality Able to be mitigated such that impacts are deemed to be low.
Moderate	Moderate change caused by the impact, generally temporary or short to medium term in duration Spatial extent of impacts may vary across the affected LGAs Able to be mitigated or managed such that impacts are deemed to be low
Major	Large change caused by the impact, generally medium to long term in duration Spatial extent of impacts may vary across the affected LGAs, or the broader region or State Negative impacts would require extensive mitigation or consultation with affected stakeholders.
Catastrophic	Very large changed caused by the impact, likely to be long-term in duration Spatial extent of impacts may vary across the affected LGAs, or the broader region or State Negative impacts would require extensive mitigation and consultation with affected stakeholders.

Source: DPIE Social Impact Assessment Guideline for State significant mining, petroleum production and extractive industry development

This SIA examined both the direct and indirect social impacts of the proposed Project.

» direct impacts are those caused directly by the project and are usually quantifiable through measurement of a set of social indicators. Direct impacts cause changes to the community in the areas of population, health, employment.

» indirect impacts are those that result from changes caused by the proposed project relating to more qualitative indicators such as community cohesion and sense of place.

This SIA applied in-depth assessment of identified significant social impacts under each of the social impact definitions. The assessment is based on information provided in the Scoping Report and prior community engagement (including that undertaken for the Exploratory Works SA) to understand the existing level of knowledge about the Project, the level of interest or support, awareness and the levels of concern.

Table 14 illustrates the social risk matrix used in this SIA to assign a rating to each social impact identified in this (described in Chapter 8).

Table 14 Social risk matrix

Consequence level							
			1	**2**	**3**	**4**	**5**
			Minimal	**Minor**	**Moderate**	**Major**	**Catastrophic**
Likelihood level	**A**	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5
Social risk rating							
	Low		Moderate		High		Extreme

Source: SIA Guidance for assessing and managing the social impacts of projects, Vanclay, F. (2015) p.49

4 Baseline social context

This Section briefly summarises findings of areas of resilience and vulnerability within the existing social environment of place-based communities who live within the Project's area of social influence. A full description of all the indicators used to form this baseline assessment is provided at Annexure D. Establishing the baseline social context provides a 'before' Project description that will help enable accurate future 'post' Project comparisons to be made. It also provides a foundation for understanding the broad setting for the local values, concerns and aspirations of a range of potentially affected populations including residents, workers and visitors.

A 'community capitals' approach (also outlined at Annexure D) was used to:

» identify the level of access to various types of 'community capitals' within the area of social influence

» assess community assets for any areas of strength and weakness which may influence the level of community vulnerability to experiencing potential social impacts.

Summary of baseline social context

The Project will impact a very wide geographic area of social influence extending from Canberra across to Wagga Wagga. Particular inhabited areas particularly vulnerable to experiencing social impacts are the Project worker accommodation camps and the townships of Cooma and Adaminaby.

The area of social influence was found to be able to access to multiple types of capital assets, summarised overleaf at Table 15. This wide availability and diversity of community assets will substantially increase the likelihood that communities will be resilient to social impacts arising from the Project.

Of the community capitals assessed, Human Capital exhibited the most indicators of potential weakness.

Of the place-based communities, Tumut exhibited the most indicators relating to areas of potential community vulnerability.

Existing understandings of the Project were found to be broadly accurate, which is reflected in very high levels of community support for the Project. This will likely contribute to higher levels of community tolerance towards any negative Project-related social impacts. Conversely, it was identified that general overestimation of the scale of expected direct economic benefits may also create a vulnerability to disappointment, which in itself may lead to the creation of unintended negative social impacts.

Table 15 Summary of community capitals

Capital type	Availability	Indicator	Area(s) of vulnerability	Areas of resilience
Natural capital	Abundance of alpine water/snow Kosciuszko National Park	Proximity to natural resources Rates of visitation from tourism to KNP	Experience of climate change impacts	Existing ability to cope with fluctuations in tourism/ seasonality impacts
Physical capital	Wide range of economic, social and cultural infrastructure Reliance on a limited network of major roads Variability in telecommunications availability Evidence of housing availability	Hospital capacity School capacity Rate of availability of telecommunications Level of dependency on private vehicle travel Dwelling vacancy rates Rates of internet access Rate of dwelling growth	Higher disadvantage in relation to transport options and digital literacy	Capacity within some economic, social and cultural infrastructure
Economic capital	High labour force participation High proportions of people with government pension incomes	Weekly median income Proportion of low-income households Proportion of population on pensions Unemployment rate Labour force participation rate Rental and mortgage repayment rate	Higher exposure to experience of cost of living pressures	
Human capital	Slow population growth Increasing ageing population and declining youth population Low proportion of residents attending university	Proportion of local population with tertiary education Level of educational participation Proportion of population over 65 Proportion of population employed in construction industry Rate of hospitalisation from motor vehicle accidents SEIFA level of socio-economic disadvantage	Reduced access to skilled labour force with a range of formal education qualification types Some minority population groups engaging in risk taking health behaviours Some minority populations experiencing socio-economic disadvantage	

Social capital	High general social cohesion and community safety Evidence of some issues relating to transient visitor populations Stability in Federal and State governance Recent significant change to local governance Strong sense of shared Aboriginal and European history	Rate of population mobility (living at different address five years ago) Rate of participation in volunteering and community support Rate of liquor offences Local crime rate in Tumut Cultural diversity (proportion of people born overseas who do not speak English) Proportion of people who identify as Aboriginal or Torres Strait Islander Proportion of people who vote in local government elections	Recent changes relating to local government representation Some exposure to nuisance and opportunistic crime Higher potential for discrimination and racism to be experienced by people from non-Anglo-Saxon backgrounds Higher health and wellbeing risks to people from Aboriginal and Torres Strait Islander backgrounds	Willingness to help people out in times of adversity

5 Social impact identification and analysis

This Section summarises and assesses all the anticipated social impacts associated with the construction and operation of the Snowy 2.0 Main Works Project. Social impacts, both positive and negative, are grouped according to the nine social impact definitions described in the approach and methodology (Section 3) and as listed in Table 5 of section 3.6. For all categories, the impacts already identified by the Exploratory Works SA are assumed to be part of the baseline social context (described in Annexure D). To reiterate, the focus of this SIA is on impacts that are anticipated to be "over and above" what is already assessed and expected to occur as part of the preceding Exploratory Works.

5.1 Way of life

Way of life is a very broad category of social impact defined as how people live, work, play and interact with each other on a daily basis. There are a number of areas of social impacts that are considered likely to result from the Project which fall under way of life. These are examined in turn throughout this section, being:

» increased potential for population changes within townships

» need to ensure there is suitable housing to accommodate the large size of the construction workforce (direct employees, including subcontractors), as well as for people who are attracted to the area to take advantage of secondary employment opportunities (indirect workforce).

» more intense resourcing demands generated by both population in-migration and Project causes, drawing on local employment and supply chains, as well as potentially creating new job opportunities

» more intense use of local roads impacting traffic conditions

» extension of the time period in which the Project construction works will restrict people's access to some areas in the KNP used for recreational activities.

5.1.1 Population changes arising from additional project construction workforce

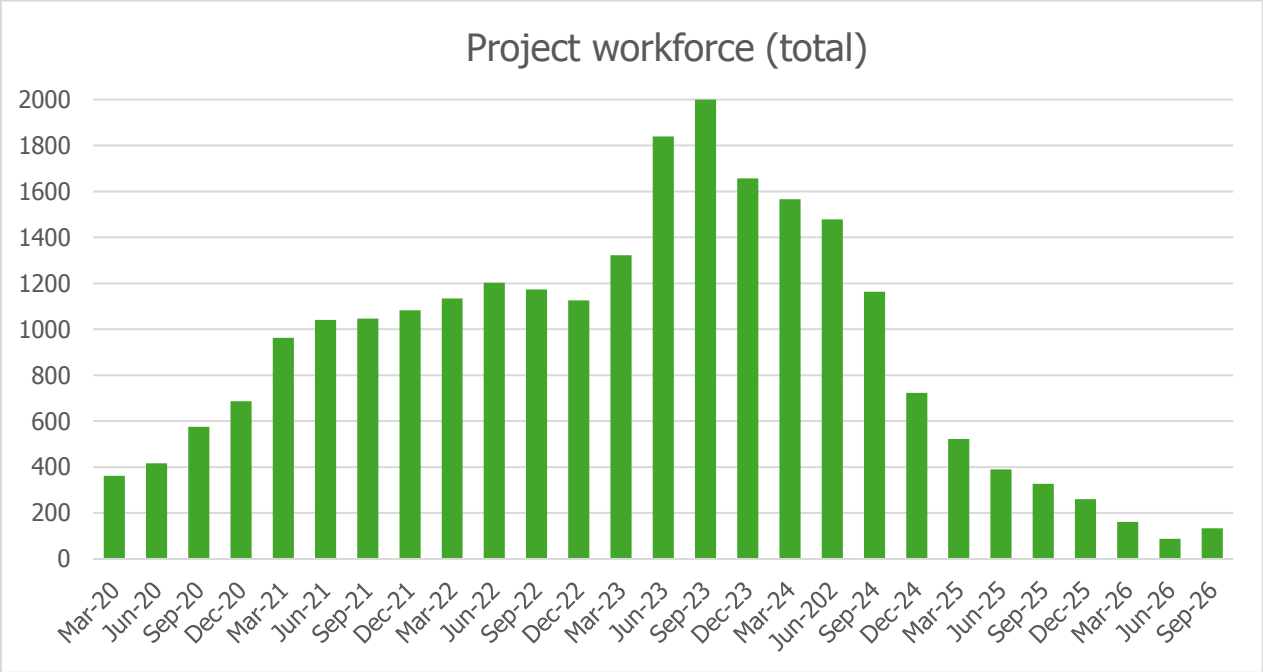
A core expected social change that will arise from the Project is a likely increase in population. This encompasses resident, employment and visitor populations. Population change in itself is not classified as socially either negative or positive. The undertaking of this SIA is to establish how the anticipated process of population change can be anticipated, prepared for and managed adequately.

Snowy 2.0 is a large-scale infrastructure project requiring a substantial construction workforce to be located at the Project site for the duration of its construction phase. The total number of workers will vary over the projected Project time period, driven by the different types of skills required for various phases of the construction.

In the Exploratory Works SA, the social impacts of population change were based on a total construction workforce of around 200 people (p.31). This anticipated population influx was assessed as being of low to medium risk, with potential identified impacts limited almost entirely to the availability of housing (p.100).

The contractor for Snowy 2.0 Main Works, Future Generation, have provided estimated figures for the number of workers who will be onsite during the construction phase, over a time period approximately six years (see Figure 17). This shows that the construction workforce will average around 1,000 employees overall, but peak at 2,000 people around the year 2023.

Figure 17 Workforce labour histogram



Source: Adapted from Future Generation Overall Project Manning Histogram, direct employees by month (July 2019)

Consistent with Exploratory Works, the Main Works component of the Project will require 100% of its workforce to be transported to and from the Project construction sites. This means that whether Project employees already reside in the area of social influence or otherwise, all of the Project workforce are technically classified as either FIFO and/or DIDO. The 'fly in' locations are likely to be Canberra Airport, Snowy Mountains (Cooma) Airport, and also potentially Wagga Wagga Airport. The 'drive in' location will be to a secure carpark area outside of Cooma, from which Project workers will be bussed to the Project site.

The Project workforce will operate on set rosters known as 'swings'. It is understood that all of the workforce will be on a typical on shift for around 20 days and then off shift for around 10 days. All non-construction employees such as support staff would also be required to work on the same roster, with the exception of office-based Project staff who will stay in the Cooma administrative centre.

When on shift, whether they are already local residents or not, all of the Project construction workers will be required to be accommodated in three designated worker accommodation camps. These are proposed to be located at Lobs Hole, Marica and Tantangara Reservoir (shown earlier in Figure 7, Figure 8 and Figure 10). When off shift, the travel costs for all Project workers to return to their respective homes will be covered by the contractor.

As already identified by the Exploratory Works SA (p.95), it is anticipated that:

» some of the Project workforce may choose to relocate to the area of social influence for the duration of their work contract, either by themselves or with their family

» some of the Project workforce may choose to visit the area of social influence while they are off shift, either on an occasional or regular basis.

Being able to estimate the potential degree of population change that could arise directly from relocating members of the Project construction workforce is fundamental to assessing the social risk level of all other potential social impacts discussed throughout this assessment chapter. It is also very difficult to predict, as ultimately it requires a large degree of guesswork regarding what is ultimately individual choice, family circumstances and lifestyle preferences.

In order to forecast the potential population change arising from an influx of project workers to the area of social influence, this SIA considered a number of variables and made the following underlying assumptions:

» that although the total size of the construction workforce will vary at different time points across the project, the precautionary principle suggests the 'peak' workforce scenario of 2,000 employees should be assessed

» that a relatively small proportion of the overall construction workforce will be able to be sourced from the local labour force, requiring the majority of direct Project employees to have a home or source residence that is outside of the area of social influence

» that only approximately two thirds of the workforce will be rostered on shift at any one time, and for this duration would be living at one of the three onsite worker accommodation camps

» that the majority of the construction workforce will choose to return to their home while rostered off shift. In line with the expectation of the Exploratory Works SA, it is probably only workers with lengthy contracts who would consider a short to medium term residential relocation to the area of social influence as financially viable (p.98).

In addition to the Project workforce-induced population change, it is also envisaged that indirect jobs could be generated over the life of the Project. It is well beyond the scope of this SIA to predict the population change in the area of social area of influence caused by the Project's indirect, or multiplier effect. Some consideration of this indirect workforce is discussed at section 5.1.3, and is also addressed separately in the Economic Impact Assessment (Gillespie Economics 2019)

Full details of a potential direct Project workforce population increase methodology used for this SIA is provided at Annexure E. Application of this method resulted in an estimate that during the Main Works construction period of the Project there could be:

» as many as 285 Project workers who relocate to the area of social influence with their families. This has the potential to result in a total of between 570 to 656 new residents. This new population would most likely be distributed across the area of social influence, however for practical reasons concentrations would likely be attracted to the town of Cooma or city of Canberra.

» as many as 160 additional 'visitors' to the area at any one time, made up of off-shift construction workers who wish to spend their rostered days off enjoying recreational opportunities, distributed across the area of social influence. Based on currently popular tourist areas, concentrations would likely be attracted to the town of Jindabyne.

Since the existing residential population across the total area of social influence is over 35,000 people (excluding Wagga Wagga and Canberra), the Project workforce-induced population change estimate of up to 656 people represents a very low overall population change of about 2.2 percent. Using the SIA population change categories from Burdge, this change impact is above being considered negligible (less than one percent) but below being considered moderate (less than 5 percent) (Burdge 2004).

Despite this low predicted severity, it is noted that even a small population change could result in major social impacts if they occur in communities that have existing vulnerabilities, such as a lack of social infrastructure. In particular, it has to be acknowledged that this potential population change does not account for any additional population change generated indirectly by non-Project workforces. This means that any people who may relocate to the area of social influence to take advantage of employment opportunities indirectly generated by the Project increase the potential for the population change risk rating to be pushed to moderate. For this reason, the possible geographic distribution of impacts arising from residential population change was also considered (described in Annexure E). The social risk assessment estimates for the spatial distribution impacts of residential population change found that:

» Cooma is very likely to experience residential population change with moderate related social impacts, resulting in an overall high social risk rating

» villages with very low existing populations (i.e. Adaminaby, Talbingo) will possibly experience residential population change with moderate related social impacts, resulting in an overall high social risk rating.

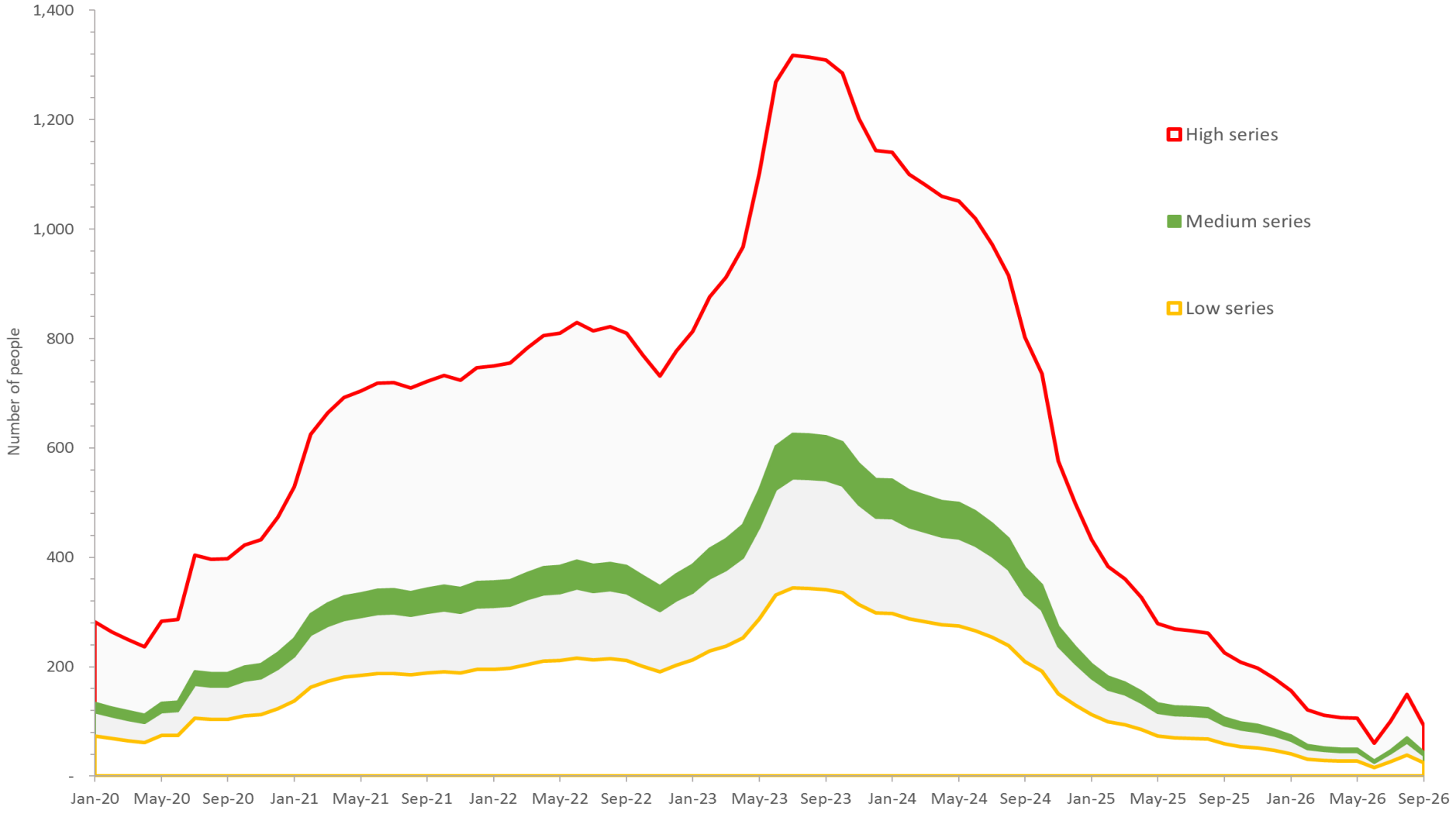
Estimates made regarding the spatial distribution of social impacts arising from additional visitor population change conclude that:

» Jindabyne is likely to experience additional visitor population change with minor related social impacts, resulting in an overall high social risk rating. It is expected that this risk will mostly result in population displacement and/or changed visitor profile, rather than being an overall net increase in numbers (due to likely short-term housing market saturation at peak holiday periods)

» other areas that experience existing 'peaks' of visitor populations during holiday periods (Cooma, Tumut, Tumbarumba, Adaminaby and Talbingo) will also possibly experience minor social impacts, resulting in an overall moderate social risk rating. It is expected that this risk will almost entirely manifest as a cumulative social impact on issues known to be experienced from baseline fluctuations in visitor populations (described in Annexure D-2-5).

Figure 18 overleaf illustrates the potential range of Project induced residential population increase that is considered possible over the construction period based on low, medium and high scenarios over time.

Figure 18 Projected range of Project induced resident population change



Source: Elton Consulting

Summary of population change impacts

There are many potential social benefits that can arise from well-managed population change. These include stimulus effects on the local economy arising from increased income expenditure (Economic Impact Assessment Report, Gillespie Economics 2019), and increased social diversity and vibrancy.

If population change is poorly planned for however, there are many ways that people's lives can be impacted. The areas of potential negative social impacts that could arise from an increase in population change from the direct Project workforce are:

» housing availability and affordability for rent and purchase, or for short stay (both resident and visitor projections)

» transport related impacts (both resident and visitor projections)

» access to social infrastructure including hospital services (both resident and visitor projections) and schools and childcare (resident projection only)

» access to recreation (visitor projection only).

It is assessed as very likely that there will be some moderate social consequences arising from any new residential and visitor population change, resulting in this impact having a high social risk rating. The social risk rating for this impact will probably not apply evenly across the area of social influence. Social consequences are most likely to be felt in the township of Cooma (for residential population change) and Jindabyne (for visitor population change).

It is considered unlikely that smaller townships would experience an influx of new residential populations. It is possible however that if larger than expected numbers of indirect workforces relocate to or visit the area of social influence, then smaller villages could be more vulnerable to experiencing the social consequences of population change. This includes Talbingo, Adaminaby, Adelong, Batlow and Tumbarumba.

Impact characteristics			
Negative	Potential for impacts to be experienced if population change is poorly managed		
Extent	**Duration**	**Severity**	**Sensitivity**
Primarily in Cooma and surrounding villages, with impacts extending Canberra. Impacts could be felt in Tumut and its surrounding villages, extending even to Wagga Wagga.	Construction phase, particularly when workforce numbers peak. Possible population taper/ decrease in transition to operational phase.	Townships with small base populations vulnerable to experiencing higher proportionate degree of change.	Resilience arising from regular experience of tourist population peaks Area of social influence has relatively stagnant long-term population trend, indicating potential capacity to absorb some growth in population
Positive	Impacts on the economy and social development if population change is effectively managed		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Existing residents, employers	Economic stimulus Potential increase in young families	Local businesses are keen to expand Concern about impact of population ageing in regional areas	Cooma is most likely to experience benefits

5.1.2 Housing availability and affordability

Access to housing is a fundamental human need that impacts significantly on personal and family wellbeing. As outlined in the baseline social context (Annexure D-2-2) housing is a key aspect of physical capital for in communities, with impacts likely if the Projects causes shortages in availability, or decreases in affordability. This is particularly relevant to regional towns where there are more limited alternatives available should a person or family find themselves priced out of the housing market.

Social impacts on housing availability and affordability is particularly complex as its perception as having a positive or negative issue depends heavily on a person's perspective and financial interest, for example as a home owner, purchaser or renter. This came through strongly in the survey undertaken for this SIA, where most respondents nominated positive impacts arising from increased property values (Annexure B-1-5).

A key consideration for assessing this impact was to firstly establish whether the level of existing housing stock throughout the area of social influence has potential to accommodate the projected residential population change (discussed above section 5.1.1). This would consequently predict the degree to housing affordability changes might be experienced that could put existing populations on low and very low incomes at further risk of housing stress, or even homelessness.

This section looks at the social impacts of housing for five groups of potentially affected people:

i. workforce populations while on shift (onsite accommodation camps)
ii. workforce populations while off shift (short stay, rental and purchase)
iii. visitor populations (short stay and tourist rentals)
iv. existing residential populations (homes for rent and purchase)
v. new residential populations (homes rent and purchase).

i. Workforce populations on shift

The Project proposes three onsite temporary accommodation facilities to accommodate all its workforce across the Project area.

The literature review (Annexure C-3) indicates that potential social impacts affecting FIFO and DIDO workers can be addressed via their onsite accommodation. For example:

» provision of room permanency to encourage a sense of stability
» provision of access to social and recreation facilities and activities
» telecommunications and internet facilities to remain in contact with their families
» rules and regulations that support mental health and physical wellbeing (including restricting alcohol and zero tolerance of illicit drugs).

ii. Workforce populations off shift

The amenity available in townships within the area of social influence is considered highly likely to attract some of the Project construction workforce to relocate for the duration of their contracts. This may include:

» single employees, likely to seek rental accommodation
» employees in couple families, with or without children, likely to seek houses for rent or possibly purchase
» groups of employees with friendship links who may enter share house arrangements, likely to seek houses for rent.

To assess the potential impacts on Project employees seeking medium to long term housing accommodation for purchase or rental, the following assumptions were made:

» that relocating employees and their families will be relatively social-economically advantaged. They may therefore be more able to afford housing at the existing median price or above

» that relocating employees and their families will have a preference for contemporary housing stock. Recently constructed houses with three or more bedrooms are likely to be favoured.

Potential Project generated workforce demand for housing for purchase or rent

The population change scenario detailed in Section 5.1.1 projected an estimate of up to 285 workers deciding to relocate by themselves or with their families to the area of social influence. This would create demand for housing stock to accommodate potential household types as follows:

» 86 family households with children

» 100 couple households without children

» 86 lone person households

» 6 group households.

The detail behind this analysis is described at Annexure E (Table 58), noting that the number of workers will fluctuate considerably throughout the construction period. It is therefore unlikely that all relocating workers will be seeking housing at the same time, or in the same town.

Availability of housing for purchase or rent

To assess any potential shortfall in housing to meet the projected demand of up to 287 households, the volume of existing and proposed housing availability across towns in the area of social influence was identified. The two main real estate websites referred to were realestate.com.au and domain.com.au. The desktop-based search was conducted on April 5th 2019. Results were averaged across the two websites.

Table 16 Long term accommodation available to purchase or rent

	Studio/one bedroom		Two bedrooms		Three bedrooms		Four + bedrooms		Totals		
	Buy	Rent	Buy	Rent	Buy	Rent	Buy	Rent	Buy	Rent	Total
Adaminaby	2	0	1	0	4	0	2	0	8	0	8
Batlow	1	0	1	0	3	1	2	1	6	2	8
Cooma	3	1	6	5	32	6	28	1	68	12	79
Jindabyne	8	1	9	0	14	3	7	2	37	6	43
Talbingo	0	1	1	3	1	1	3	0	4	5	9
Tumbarumba	0	0	3	2	14	2	8	1	24	5	29
Tumut	0	3	11	3	40	13	27	3	77	22	99
Total	**14**	**6**	**30**	**12**	**106**	**26**	**75**	**8**	**223**	**51**	**274**

Source: realestate.com.au and domain.com.au

Table 16 indicates that on average there were a total of 274 vacant properties available for rent or purchase across the area of social influence. This is a technical shortfall of eleven dwellings.

Given that the distribution of Project workforce population change is likely to be concentrated in Cooma, the actual shortfall in housing for purchase and rental is likely to be significantly higher. In particular, given that there are significantly more houses available to buy than rent, there is likely to be a substantial shortfall in availability of rental properties. The Exploratory Works SA previously identified that Cooma had approximately 13 properties available to rent in mid-2018 (p.98). Consistent with results shown in Table 16, this availability has remained relatively stable, but still much too low to meet the anticipated housing demand. This demand assessment also

does not take into account additional dwelling demand that could be generated by any indirect workforces and their families who might look to take advantage of ancillary employment opportunities arising from the Project.

Due to identified limits to rental housing availability in Cooma, it is most likely that some Project workforce housing demand can be absorbed by the nearby Capital city of Canberra, or alternatively possibly Wagga Wagga.

Overall, the data in Table 16 suggests that:

» there is likely to be sufficient housing available for purchase to meet any (limited) workforce housing need

» there is likely to be a shortfall in sufficient rental housing available to meet workforce dwelling demand, particularly in Cooma.

» both housing and rental stock available appears to be predominately older housing stock, which may not meet workforce expectations.

The projected residential population change impact on increasing demand for housing may also have an unintended impact on long-term housing supply. This would most likely manifest as a post-Project construction housing market fall as FIFO/DIDO workers move on to other employment. It also does not consider the effect of any other planned construction projects that might create additional cumulative demand for housing in the area of social influence.

Workforce generated demand for short stay housing for rent

Applying the mid workforce population change scenario from Annexure E, it is estimated that a maximum of 121 workers are likely to remain visiting the area while off-swing to take advantage of local recreational opportunities. As previously stated, all workers will stay at the worker accommodation camps provided in Lobs Hole, Tantangara and Marica while on-swing. Accommodation at the worker camps will not be accessible to employees during their time off-swing. As such, some workers will probably look to short-term accommodation options that could include camping or short stay tourist accommodation.

Availability of short-stay housing for rent

Table 17 illustrates housing data on short-term accommodation for the Snowy Mountains Tourist Region in the June 2016 quarter. The June quarter covers April, May and June which leads into the busy winter tourism season for the region. The region includes both the Snowy Monaro and Snowy Valleys LGAs. The data indicates that there were 67 short-term accommodation establishments providing 2,634 rooms with 9,838 bed spaces available. There were 48,582 room nights occupied and 185,880 room nights available which translates to an overall room occupancy rate of 26.1 per cent. This means there was on average 1,266 rooms available per night across the Snowy Mountain Tourist Region. This is a slight decrease since the Exploratory Works SA was undertaken which identified an overall room occupancy rate of 27.8% (p.99).

Table 17 Short term accommodation availability – June quarter 2016

	Number	Rooms	Bed spaces	Nights occupied	Nights available	Occupancy rate (%)
Hotels and resorts	17	1,084	4,177	16,780	69,923	24.0
Motels, private hotels and guest houses	45	1,277	4,428	23,898	93,662	25.5
Serviced apartments	5	273	1,233	7,904	22,295	35.4
Total	**67**	**2,634**	**9,838**	**48,582**	**185,880**	**26.1**

Source: (Australian Bureau of Statistics 2016)

The above data suggests that there is sufficient short stay accommodation capacity across the Snowy Mountains Tourist Region to accommodate the 121 anticipated workers who choose to remain in the local area and region while off-swing. This analysis does not include the camping areas in the KNP.

There was a potential localised impact identified regarding the level of availability of low-cost accommodation for seasonal fruit pickers who work in Batlow and Tumbarumba. This was considered a possible risk that would cause

major impacts for a small number of agricultural business. It has not been further assessed however as these workers are very sensitive to price, and would be unlikely to compete for the types of accommodation that would be sought by Project workforce. In addition, it is known that many farmers provide accommodation for their pickers on their properties.

Overall, findings suggest there is unlikely to be any noticeable impact on the availability of short-term accommodation in the region caused by workers choosing to stay in the area as visitors while off-swing.

iii. Visitor populations

Following on from Section ii, there are large numbers of existing visitor populations who require access to short term accommodation in the area of social influence to enable them to access recreational opportunities. These visitors will be seeking access to the same short-term accommodation dwellings as what the proportion of off shift Project workforce would be.

In the event that there is any short-term accommodation housing supply shortfall arising from population change generated by the project workforce, visitors are likely to:

» pay a higher than baseline price to access short term accommodation, resulting in increased financial stress

» access short term accommodation of a lower standard, resulting in poorer amenity for the duration of their stay and potentially creating risk to temporary workforce populations (such as fruit pickers) who are currently primary users of this accommodation type

» cease visiting the area for the duration of the project, resulting in increased tourism visitation to destinations outside of the KNP.

Snowy Mountains tourism is currently evolving its recreation offerings, such as encouraging BMX riding in warmer months. As such, the ebb and flow of visitor populations is becoming an increasingly 'constant' part of the short-term housing market. As the availability of short-term accommodation is relatively fixed, the addition of some worker 'off shift' demand in places such as Jindabyne can be viewed as simply becoming part of the tourist mix.

Overall, particularly in tourist peaks, the net effect expected is one of displacement. This means that those visitors who can afford to meet short term accommodation peak demand prices will have the benefit of securing housing while those who are more price sensitive, or have not booked in advance, would miss out on access to housing.

The primary negative impact expected is that non-workforce tourist populations may find it more difficult to secure room availability, or find that room rates have increased. The primary positive impact would be that operators of tourist accommodation establishments may experience financial benefits of longer periods of room occupancy, and benefit from being able to charge higher room rates.

iv. Existing residential populations

Community engagement activities conducted for this SIA found that the expected impact of the Project on housing availability was perceived to be largely positive. There was anticipation that house prices will increase as a result of increased demand that arises from the Project workforce, direct and indirect. A large number of respondents (36%) felt that their property value would rise, while a much smaller number were concerned about the potential impact of rising rent costs. This indicates a distributive equity issue for this impact, whereby people living in the area will view and experience the impact of changing house prices differently based on their primary tenure type- owner, investor or tenant.

As an example, according to 2016 ABS Census data, 63 percent of people in Cooma fully own or are paying off their home. This suggest that any appreciation in their home asset value will overall be dominantly perceived as a positive impact. For the 24 percent of people who rent privately in Cooma however, an increase in house asset value is likely to be passed on by landlords in the form of higher rent. If households are unable to absorb a rental increase, particularly low and very low-income households, a number of negative outcomes could occur such as:

» decisions to move to a cheaper dwelling, typically resulting in a poorer quality living environment

» moving in to cohabit with other households, potentially leaving to overcrowded living situations

» decisions to relocate to another town, causing disruption to existing social and economic networks

» in isolated cases, leading to an increase in demand for social housing, emergency accommodation or temporary homelessness.

v. New residential populations

The anticipated population change impact is primarily based on direct Project workers making decisions to move to the area of social influence for a period of time. In addition, there will likely be new residential populations arising from an indirect workforce who may decide to move to the area to seek employment opportunities that arise from ancillary work opportunities from the Project. Examples could be additional staffing of cafes and fuel stations, or service industries associated with cleaning and catering. According to the Economic Impact Analysis (Gillespie Economics, 2019), the Project could have an economy wide impact of creating an average aggregate impact of an increase in employment of 324 full time equivalent positions (p33). Depending on circumstances, some of these indirect employees are also likely to decide to relocate and become local residents, and therefore seek access to the same medium- and long-term accommodation dwellings as the directly employed Project workforce who relocate.

It is anticipated that these new 'indirectly employed' residential populations will experience similar impacts to those faced by incoming workforce populations seeking housing for rent or purchase, (discussed earlier at section ii) namely:

» reasonable levels of existing access to housing for purchase

» limited levels of access to housing for rent, especially in Cooma

» limited access to contemporary housing stock.

Unlike the assumptions made for the Project direct workforce populations however, new residential populations relating to indirect employment opportunities are probably less likely to be socio-economically advantaged. It is assumed therefore they would be less likely to be able to compete with relocating Project workforce members in the local housing market.

Anecdotal feedback received during community consultation activities suggested that most people believe that new housing supply, particularly in Cooma, was a preferred mitigation to address this potential impact. Aside from the relatively slow planning and approvals proves however, addressing new demand for housing via house and land package release could also create unintended negative social impacts in the post-construction period, for example as a housing market downturn when Project workforce contracts cease.

Summary of impact on housing availability and affordability

It is assessed as almost certain that there could be major social consequences arising from increased pressure on the local housing market, dependant on the actual experience of predicted population in-migration changes. This impact would be cumulative to the impacts already predicted by the Exploratory Works SA.

If unmitigated, this impact would have a major social risk rating. This applies both to the positive social consequence of increased house asset values, and the negative social consequence of reduced availability and affordability, particularly for rent. Evidence collected suggests some of these impacts are already being felt across the area of social influence.

The social risk rating for this impact is likely to apply unevenly across the area of social influence, reflecting large differences in the availability of existing housing stock. Social consequences are likely to be concentrated in the township of Cooma and its surrounding villages (such as Adaminaby, Bredbo, Jindabyne) and also extend to Canberra.

Planning for management of this impact by the proponent is already well underway. SHL are pursuing the securing of housing accommodation for demand that arises from Project workers at a site in Cooma (known as Pacific Hills) that could provide 120 short term accommodation rooms and 30 long term accommodation cabins. This site also allows for potential expansion. This accommodation could potentially support all the housing needs of the proposed Project, and is designed to reduce any potential burden on local communities. At the time of writing, SHL was in the process of acquiring the land has commenced discussions with Snowy Monaro Council regards the planning approval process.

Regarding changes in visitor demand for housing, short-term accommodation providers will be important 'first responders' in terms of noticing new demand. These operators are familiar with baseline trends arising from tourists, as well as regular demand from the business community. Collecting qualitative information from these key stakeholders, whether through regular survey or interview, would enable effective monitoring and measurement of change that is over and above what would be considered typical fluctuations in visitor demand.

Local real estate agents would be key stakeholders for measurement of the degree of any change in the housing market relating to demand for rent and purchase that might be attributable to the Project. Noting that speculative behaviour has already been occurring, it can be anticipated that some low-income families will become at further risk of experiencing mortgage or rental stress. Although established communications systems do not exist at present, there may be opportunities for real estate agents to report cases of concern, such as significant rental arrears or overcrowded living conditions, to local welfare and community housing organisations.

Mitigating impacts on housing through increasing new housing supply will be of limited benefit due to the time-lag in regulatory approvals and construction time involved. This could also cause unintended consequences post-project as the market 'corrects'.

Impact characteristics:	**Workforce populations (on and off shift)**		
Negative	Limited access to housing for rent Limited access to contemporary housing stock		
Extent	**Duration**	**Severity**	**Sensitivity**
Primarily within key townships of Cooma and Tumut. May also extend to Canberra and Wagga Wagga. Less likely to impact small townships	Construction phase	Limited housing stock available. Cooma in particular lacks contemporary housing stock.	Amenity of area of social influence is likely to encourage relocation Workers will be less likely to re-locate if they can't access appropriate housing
Positive	Access to self-sufficient workforce accommodation camps at Project site, and potentially in/near Cooma Employer support to travel to/from source home Reasonable access to housing for purchase		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Workforce likely to prefer to be close to the Project for the duration of their work contract	Security of tenure for workforce contract duration	Workforce will enjoy lifestyle/ potential to be close to their family	Workforce with higher mobility (e.g. lone person/ couple without children) are most likely to consider relocation

Impact characteristics: Visitor populations			
Negative	Changes to tourist/visitor demand for short stay accommodation. In event of low availability, possibility of indirect impacts on non-Project industries e.g. seasonal fruit pickers, other business professionals/ temporary workforces (such as visiting medical specialists, other construction projects)		
Extent	**Duration**	**Severity**	**Sensitivity**
Across area of social influence, particularly Jindabyne (tourists) and Batlow area (seasonal workers)	Construction Holiday 'peaks' Seasonal (fruit picking times of year)	Limited alternative short stay accommodation available (market can already experience saturation, leading to 'displacement' effects)	Visitors will have varying price sensitivity before they change travel plans Business will be highly sensitive to service disruptions Farmers without existing onsite accommodation for temporary workforces
Positive	Improved economic sustainability and financial benefits for accommodation providers		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Owners of accommodation establishments	Increased likelihood of full occupancy/ higher room rates	Could extend existing 'peak' visitor season scenarios	Cooma and Jindabyne likely to experience highest benefit
Impact characteristics: New and existing residents			
Negative	Increase in housing asset value passed on as rent increase Potential post-Project housing market downturn (longer term decrease in housing asset price) Comparative inequality in ability to access to housing for purchase or rent between relocating direct workforce, relocating indirect workforces, and other population groups such as low-income households		
Extent	**Duration**	**Severity**	**Sensitivity**
Across area of social influence	Construction phase (Short term) Operation phase (Long term)	Housing market has already been subject to speculative behaviour	House asset price is linked to levels of financial security/ stress for local homeowners/ renters
Positive	Increase in housing asset value (to leverage as higher rental income or sale price) Potential post-Project improvement in housing affordability (longer term decrease in housing asset price)		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Existing homeowners Prospective homeowners	Creates improved financial security/ security of tenure	House asset price is linked to levels of financial security	Cooma and surrounds likely to experience highest benefit

5.1.3 Local employment

Income derived from employment can directly shape other aspects of this way of life social impact category, such as housing, transport and health. The quality of work and working environments also has a powerful effect on people's health and wellbeing. As a large-scale infrastructure project, understanding the economic impacts of the Project to local communities is essential. A comprehensive Economic Impact Assessment was conducted by Gillespie Economics (2019) separate to this SIA.

Community engagement activities conducted for this SIA found that the expected impact of the Project on local employment is a front of mind topic. More than half of respondents reported expectation of a positive impact, while only 2 percent perceived a potential negative impact. It is clearly anticipated that the Project will stimulate the economy at a local level, and provide job and business opportunities.

Both direct (Project workforce, including subcontractors) and indirect (ancillary) employment benefits are expected to arise primarily throughout the Project construction phase. A peak direct workforce of up to 2,000 people is predicted to be reached in the year 2022. This will then taper off slowly into the longer term, with an ongoing direct employment for the Project operational phase of less than 20 people (excluding major maintenance activities).

It is anticipated that due to the specialist nature of many of the construction skills required, the majority of the Project workforce will still have to be recruited from places outside the area of social influence. Future Generation are committed to use a variety of avenues to seek to recruit locally where applicable, including through recruitment hubs located in Cooma, Tumut and Tumbarumba.

For the purpose of this SIA analysis, it has been conservatively assumed that a mid scenario (around 5 percent) of the total direct Project workforce will be recruited from towns across the area of social influence (described at Annexure E).

From a social impacts point of view, community consultation activities have identified a social baseline of much stronger expectation that the Project will bring significant employment opportunities to townships. This expectation is borne out of:

» a widespread remembered cultural history of connection to the original Snowy Scheme, and the way its workforce became embedded in the community after the project finished.

» awareness of the existing trend of population stagnation, with concern about a decline in age cohorts of young workforce and family formation age brackets. There is widespread community desire to reverse this population ageing trend and grow opportunities particularly for younger workforces.

The potential for social impacts caused by Project-induced change to local employment will impact different parts of the community differently depending on each individual's circumstance and perspective. For example, job seekers without a skill set required by the Project are likely to experience a neutral impact, and people who are not in the labour force may even experience negative impacts. Conversely, job seekers with an appropriate skill set are most likely to find work either directly on the Project itself, or indirectly in a supporting capacity, with a positive employment income consequence.

Due to the baseline nature of the tourism industry causing population fluctuations that impact on employment within the area of social influence, the Project is likely to exacerbate those existing social impacts being experienced by local businesses, namely:

» high reliance on casual work forces (including young workforce),

» difficulties with predicting resourcing requirements and rostering

» high staff turnover, particularly in seasonal industries (such as agriculture).

Depending on an affected person's perspective, the Project can be expected to both create additional permanent and casual job opportunities, while also presenting a potential risk to other employers who may find recruitment more difficult if workers are being attracted to new jobs with more attractive remuneration. In other 'boomtown' communities, the pull of employment opportunities on projects have sometimes meant that no workers are available for lower paid service jobs. Staff who may choose to leave other industry sectors to work on Project related opportunities, including the local government sector, is also a sometimes a major problem creating a high staff turnover and creating reduced organisational capacity (Vanclay, 2015). Overall, the creation of new change

movements within the local labour force will almost certainly result in both positive and negative social impacts arising from employment opportunities and uncertainties.

Previous reported experience of infrastructure projects undertaken in the area of social influence, particularly around Tumut, suggest that the Project will likely result in at least some level of localised inflation. In the same way that housing affordability may be impacted, businesses could take advantage of the expected economic stimulus effect to raise the prices of goods and services in response to increased demand. When this currently occurs during tourism peaks in the area of social influence, local residents often respond by changing their spending habits. For example, they may avoid doing their grocery shopping at certain times, delay service industry appointments or everyday tasks like filling up vehicles with petrol. It is likely that the Project may exacerbate this kind of social response. For a small proportion of households living on very low incomes, such as those reliant on government pensions, localised inflation could represent a risk of potentially living in worsened poverty for the duration of the Projects social impact. While direct Project workers are almost certain to be paid wages which account for the rate of inflation (and contribute to it), some existing residents would experience rising costs without the benefit of additional income streams.

It is therefore assessed that while the Project will inevitably create substantial positive employment outcomes, there is also some risk that this could contribute to more socio-economic inequity. New tensions arising from perceptions of difference could arise based on those who are seen to benefit financially from the Project, and those who feel they have missed out. For a small proportion of people who are already experiencing socio-economic disadvantage, this is known to have the potential to manifest through increased anti-social behaviour. As the proponent SHL is already planning, cultivating local investment opportunities is an important way to combat the effects of any increase in socio-economic inequality in communities.

The Exploratory Works SA identified a high, positive anticipated social impact of the Project based on the economic impact of additional wage expenditure in the economy (p.111). Mitigation measures designed for the Exploratory Works included a number of measures (SECO8) designed to maximise these economic benefits, including principles of:

» a preference for local employment

» encouraging local contractors to tender for work; and

» use of local business.

It is considered highly likely that these recommended measures can be extended to cover the Main Works construction period.

Summary of impact on local employment

It is assessed as highly likely that the Project would contribute to major potential social benefits arising from increased availability of employment opportunities. These can be expected to be cumulative to the positive employment impacts predicted by the Exploratory Works SA.

It is acknowledged that this impact encompasses some likely moderate negative social consequences from the perspective of a smaller proportion of residents and employers who may find it difficult to source appropriately skilled local employment for the duration of the Project construction period.

Designing mitigations for impacts on local employment is constrained by this problem being an existing part of the social baseline situation. Its effects have already been noted by some major employers other than SHL (such as Councils) across the area of social influence. In a market based economic system, any interventions could potentially be deemed anti-competitive.

From a social impact perspective, the high community expectation of positive local economic benefit also poses a potential risk of disappointment if it does not eventuate, and/or some risk of post- Project economic decline if employees become dependent on Project economic stimulus for their financial viability. This is discussed further at section 5.9.2.

The social risk rating for this impact will not apply evenly across the area of social influence. Positive social consequences are likely to be concentrated in the larger townships of Cooma and Tumut, and major cities of Canberra and Wagga Wagga. Negative social consequences are likely to be concentrated among people who are not in the labour force in Cooma and villages with small populations <500 people.

Impact characteristics			
Negative	Potential for localised inflation effects Increased localised job market volatility (e.g. staff availability, especially for casual positions, staff turnover) Potential for disappointment if Project does not require particular skill set/ local employment already available in the local community		
Extent	**Duration**	**Severity**	**Sensitivity**
Whole area of social influence, particularly Cooma and Tumut	Construction phase	High existing reliance on casual workforces and difficulties recruiting skilled labour	Villages with populations <500 and Tumut more susceptible to loss of potential local employment Workers who cannot gain direct or indirect employment, particularly impacts people already on very low incomes, young people recently entering the workforce, people not in the labour force
Positive	Optimistic expectations that the Project will stimulate direct and indirect employment opportunities, leading to increased employment incomes New opportunities for existing and potential local business (economic stimulus effect) Additional casual job opportunities, particularly for young people, flowing from ancillary employment that supports the Project		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
People in or with a connection to the labour force	Improvements to financial security (income)	Benefit is considered of key importance for the local community.	Based on possession of relevant employment qualifications and experience

5.1.4 Traffic conditions

The social context baseline analysis (see Chapter 4 and Annexure D-2-2) indicates that there are existing impacts being felt as a burden on communities arising from present traffic conditions throughout the area of social influence. The qualitative evidence collected suggests that people's experiences of other infrastructure projects and tourism visitation has created a genuine fear of worsened traffic conditions exacerbating these impacts. It is important to reiterate then that the roads throughout the area of social influence are already:

» subject to periods of high congestion, particularly during school holidays

» exposed to extreme weather conditions, particularly during winter

» used for access by heavy vehicle traffic movements (trucks/semi-trailers)

» designed for their regional setting, being typically single lanes with few verges or overtaking lanes. Isolation contributes to placing people at higher risk of breakdown in a remote location, and of collision with wildlife (especially at dusk and dawn).

It is acknowledged then that living with large travel times and distances is a core part of people's current way of life throughout the area of social influence. Reliance on cars is an inevitable consequence of living in a regional area, where the benefits of being surrounded by a high-quality natural environment creates a trade-off in terms of

access to services and facilities (explored further in Section 5.3). This means that populations are likely to be more sensitive to changes in traffic conditions that affect their road travel. Road users in the area clearly already face a baseline risk of being involved in a traffic related incident, with data showing the region has a high trend of motor vehicle crash hospitalisations (Table 47).

Community engagement activities conducted for this SIA found that the expected impact of the Project on road traffic was the second most negative expected impact (Annexure B-1-4). It was repeatedly noted that there are perceptions that many road users currently engage in risk taking behaviour on local roads, particularly visitors who may be unfamiliar with local road conditions. It was often stated that the 'worst offenders' for poor driving were people who weren't from the area of social influence, a perception supported by consultation with NSW Police.

A Traffic and Transport Assessment has been compiled separately to this SIA (SCT Consulting 2019). This assessment provides further details on the existing road conditions in the area, assesses the capacity of roads and intersections, and provides technical information on potential impacts of Project generated traffic.

For this SIA, the focus is therefore on levels of perceived concern about traffic congestion and delays. For example, some local roads, including the Snowy Mountains Highway, were viewed as unsuitable for heavy vehicle movements expected to be required by the Project.

It is anticipated that Project-related traffic will inevitably worsen both the existing traffic situation, and the vehicle movements previously predicted to occur as part of the Exploratory Works SA. Regardless of plans for the Project workforce to be bussed to and from the accommodation sites as a key way of reducing vehicle movements, additional traffic can be generated from:

» Project construction vehicles

» Project workforce traffic movements while 'off shift'

» indirect workforce traffic movements e.g. project support activities/ other contractors and business people (such as delivery drivers).

A small number of specific groups of stakeholders are likely to be at increased risk, including:

» school children reliant on bus transport to access education who often travel long distances from rural locations into Cooma/Tumut

» elderly or disabled people reliant on community transport to access social and health appointments

» Project workforce bus access to accommodation camps, and other Project vehicles driving on remote roads

» farmers crossing livestock on local roads and highways.

The key existing traffic conditions likely to be exacerbated by the Project include:

» delays in travel time arising from longer queuing at road works/ along detour routes

» increase in driver frustration and/ or 'road rage' incidents causing risk taking behaviour such as unsafe overtaking

» increase in accidents from animal strikes.

Consultation with NSW Police noted that dealing with poor driver behaviour generally relies on reporting from the general public, and the presence of highway patrol vehicles. Unfortunately, other than issuing of fines and driver education, there is limited ability to directly protect people from being involved in road crashes.

The potential burden of traffic accidents on health and medical services as a consequences of worsened traffic conditions is discussed at Section 5.3.1 (access to health and medical infrastructure).

Summary of impact on traffic conditions

It is assessed as almost certain that for the Main Works Project, there will be moderate social consequences arising from increased traffic congestion that will be cumulative to the impacts predicted by the Exploratory Works SA, which previously assessed the unmitigated social risk of traffic impacts as 'medium' (p.111).

This potential impact encompasses some particular likely major negative social consequences from the perspective of particular individuals (residents, tourists or Project workers) within the area of social influence who may

experience the direct impacts of involvement in avoidable traffic accidents. The social risk rating for this impact does not apply evenly across the area of social influence, with social consequences likely to be concentrated on certain roads and intersections most affected by construction traffic, such as the Canberra to Cooma/ Cooma to Project site travel routes.

Aside from the potential for road improvement mitigations outlined in the Traffic and Transport Assessment (SCT Consulting, 2019), designing mitigations for impacts on local traffic is largely dependent on human behaviour. There are few direct interventions able to prevent people engaging in risk taking or illegal road behaviour that is borne out of emotion such as impatience or frustration.

The planned Project measure provision of onsite accommodation of workers and associated 'laydown' and compulsory bus transfer arrangements for the direct Project workforce is an important solution to managing risk of additional car traffic demand on local roads.

Given the limited period of Project construction, introducing major road changes such as new overtaking lanes is unlikely to be able to be financially viable, and even if funded, unable to be implemented in time to address this identified impact.

The Traffic and Transport Assessment included in the EIS provides further detailed suggested mitigations for management of traffic impacts.

Impact characteristics			
Negative	Closure of a small number of local roads affecting permanent/temporary access to recreation Worsened traffic congestion causing exacerbation of driver frustration and stress arising from travel delays, with resultant increased risk of involvement in a traffic accident		
Extent	**Duration**	**Severity**	**Sensitivity**
Roads needed to access Project site i.e. Cooma and surrounds	Construction	Existing roads are rural in nature, not designed for high traffic volumes or inexperienced drivers	High existing concern about this issue Some existing tolerance for traffic 'peaks' associated with tourist seasons Visitors are less likely to be familiar with/ drive to local road conditions
Positive	Potential for upgrade of some local roads improving their condition, including an increase in presence of Project traffic management resources during construction		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Affects daily life of very large number of people	Construction Post-construction	Regional areas have higher reliance on roads/cars to access services and facilities	Higher benefit to roads accessing Project site, i.e. Cooma and surrounds

5.1.5 Tourists and recreational users of KNP

As established in the social baseline context (Annexure D-2-1), natural capital is critical to the success of the tourism industry throughout the area of social influence. Visitors and recreational users are therefore considered a key potentially affected community group. For this reason, their particular interests are studied in detail in a Recreational User Impact Assessment report (TRC Tourism 2019) compiled separately to this SIA and attached at Annexure G. The proponent's responsiveness to recreational users as a key stakeholder group is also discussed in some detail throughout the Exploratory Works SA, including outcomes of community consultation activities which found a high level of concern regarding the Project's effect on changes to access to activities such as fishing, camping, horse-

riding, water sports and bushwalking (p.82). This section therefore considers how the Main Works Project might exacerbate or extend these already assessed findings, as well as considering broader (outside the KNP) effects tourism and visitor populations.

As a social identity, it was found there are important nuances to the category of 'tourist' or 'visitor' expressed by people interviewed within the area of social influence. As a stereotyped group, tourists and visitors tend to be 'other-ed' by local residents; tolerated as an important source of income for the local economy, but not integrated within local social 'neighbourhood' level networks. In reality however, it was acknowledged that the category of visitors and residents is fluid and can become interrelated groups which 'convert' between identities. For example, many repeat visitors eventually decide to move to the area and become permanent residents, and many residents who move away from the area return regularly as visitors. There is also a large number of 'ex-pats': usually people under the age of 50 years, who were raised in the area of social influence but left for education and employment opportunities, returning regularly to maintain contact with family and friends.

Three key visitor stakeholder groups were identified:

» local residents who travel from their homes to recreate within the KNP and other areas in the area of social influence, such as fishermen

» 'one off' visitors who pass through the KNP or area of social influence, for example to attend a music festival or as part of a tour group

» regular and repeat visitors who have strong attachments to places within the KNP or other areas of the area of social influence. For example, these visitors may have a favourite camping spot, be regular skiers, or have intergenerational recreation attachments to the area.

During community consultation activities conducted for this SIA, there appeared to be some tension between the high broad support and optimism for Snowy 2.0 with concurrent concern that it could cause conflict with, or declines in, local tourism volumes. This could arise from one or more of the following deterrents:

» potential shortage of short-stay housing for visitors to rent arising from Project workforce demand

» potential shortage of workforce availability to run tourism operations arising from staff being attracted to more attractive Project-related employment roles (direct or indirect)

» worsening road congestion conditions arising from Project traffic potentially discouraging visitation to the area

A review of the Exploratory Works SA (pp.101-105) found the following visitor impacts that are also relevant to the Main Works Project:

» continued, permanent closure of Lobs Hole Ravine Road and the existing Lobs Hole Ravine remote campground

» continued restrictions on access to Talbingo Reservoir

» increased visitor journey times arising from Project traffic movements, particularly during winter holiday peak. This is potentially a cumulative risk for exposure to other traffic impacts

» continued exposure to any potential amenity impacts associated with Project noise, air quality and visual quality (discussed later at section 5.6).

While some of these recreation access impacts, particularly the closure of Lobs Hole, were assessed as being a high impact, survey counts of recreational users indicate very low numbers of directly affected people. In addition, it was found that as a baseline situation, the recreational sites within the KNP are broadly underutilised, indicating capacity for recreational users to attend alternate sites for the duration of the Project. This is supported by consultation survey outcomes (see Annexure B-1-7) where as many respondents indicated there are 'other areas to use' (19.5%) as those who responded 'I won't be able to get to the areas I normally go' (19%).

Summary of impact on recreation and tourism

Particular study and assessment of the potential impact of the Project on recreation users has been a specific focus of the proponent to date. For both the Exploratory Works EIS and the Main Works EIS, studies have been commissioned to examine likely impacts on recreational users. It is worth noting that the attention paid to this stakeholder group could have the unintentional effect of disproportionately elevating their concerns when compared to other potentially affected stakeholder groups in the area of social influence.

The Recreational User Impact Assessment report (TRC Tourism 2019) is attached at Annexure G. It provides a full assessment of the following identified likely recreation user impacts within the KNP:

» Reductions in access to Tantangara Reservoir affecting its use and amenity

» Continuation of impacts to of Lobs Hole Ravine

» Traffic movements affecting access to Mt Selwyn

» Potential amenity and/or access impacts at Currango house, 3 Mile Dam, Wares Yard horse camp, walking trails

» Impacts to commercial tour operators.

Outside of the KNP, it is assessed as possible that the Project could have minor to moderate impacts on the local tourism economy during construction, however this effect is highly likely to vary substantially based on time of year, recreation location and the particular visitor industry.

The most likely direct impact on visitors will be the social effects arising from potential worsened traffic congestion and increased competition for short-stay rental housing, both impacts discussed earlier in this Section. Due to the high-profile nature of the Project and its broader public interest benefit, it is considered highly likely that as a stakeholder group, tourists and visitors will have sufficient awareness of the Projects activities to enable them to anticipate and manage these impacts at an individual or household level.

Post-construction, it is almost certain that the Project will have minor positive benefits for the local tourism economy as it relates to an increase in 'Snowy Hydro Tourism' (visiting Snowy Scheme sites), as well as improved road access and amenity at some recreational locations within the KNP. This would be cumulative to the positive contribution the Snowy Hydro sites already has on attracting tourism to the area of social influence.

Impact characteristics			
Negative	Concern about potential decline in visitor volumes to the area (i.e. their displacement to alternate tourist destinations outside the area of social influence) Additional restricted access to some identified recreational activities in the KNP, including potential decrease in amenity at specific sites during the construction period		
Extent	**Duration**	**Severity**	**Sensitivity**
Recreational locations across KNP including Lobs Hole, Tantangara Reservoir	Construction phase	High existing volumes of tourists within Snowy Mountains region, peaking during school holiday periods, especially winter	High dependence on tourism industry for local employment and income
Positive	Increased visitation at alternate sites within or outside the KNP (construction phase) Increased broader awareness of the KNP, including post-project Snowy Hydro tourism Improved long term amenity at some KNP recreational sites (operational phase)		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Recreational users People who work/rely on tourism industry for livelihood	Concentrated within KNP	Snowy Hydro scheme is part of cultural identity of the area of social influence	May change visitor profile (e.g. reduce numbers of remote campers/ gain 'glampers')

5.2 Community

Social impacts to community refer to aspects of population composition, cohesion, character, function and sense of place. It is recognised and acknowledged that this category of impact involves a level of uncertainty because social environments and the processes that affect it are changing constantly, and vary from place to place and over time. Selectivity in assessing this category is considered unavoidable to some degree. This subjectivity is also balanced by attempts by the SIA preparers to source judgements from the outcomes of community consultation activities wherever possible.

The social context baseline analysis of social capital (Annexure D-2-5) established that communities within the area of social influence have a strong sense of valued rural identity with high community cohesion and well-functioning social networks. Communities within the social area of interest exhibit high levels of resilience in the following areas:

» tolerance for regular change arising from fluctuations in visiting/tourism populations

» tolerance of uncertainty about the long-term sustainability of townships. This is particularly in regards being accepting of young people who leave the community to seek alternate education and employment opportunities. It also applies to acceptance that for some professional services, such as health, there is a high turnover of professional staff.

As is the case with broader society, the key identified existing vulnerability to the composition and functioning of communities is the presence of pockets of people experiencing socio economic disadvantage, and other minority groups at risk of not feeling part of the community, for example Aboriginal and Torres Strait Islanders (ATSI), older people, people with a disability.

The location of the Main Works Project being within the KNP and away from residences and built up areas means there are no or very few direct impacts expected to affect levels of social cohesion. The psychology of social identity theory however suggests that the Project could still result in indirect cohesion impacts through exacerbation of tension arising from changes in some people's sense of who they are based on social groupings.

Community consultation outcomes as well as the reviewed experience of comparable major energy projects, suggest areas of conflict that are already present, or which may develop during Exploratory Works, may 'flare up' as the Main Works Project progresses, such as:

» conflict between groups that are seen to support the Project, and groups that are seen to oppose the Project. As there is such strong identified existing support for the Project (see Annexure B-1-3), it is possible that the minority of people who oppose the Project may experience feelings of social rejection, and frustration.

» conflict between groups that expect to benefit from the Project and those who feel they will be negatively impacted by the Project.

» introduction of a new social grouping of people to the community, namely people associated with the Project workforce.

Conflict between social groups is considered a natural, predictable part of living in any society. The Project however is likely to act as a catalyst for impacts on social cohesion that may not have existed if the Project was not proposed. Two potential areas of conflicts were identified as presenting the greatest potential indirect impact on community cohesion:

» perceived and actual levels of community safety

» concern about Project worker behaviour (while off-shift).

5.2.1 Community safety

As established in the social baseline (Annexure D-2-5), overall there is comparatively low reported crime activity across the area of social influence. Consultation with NSW Police confirmed that incidents are currently generally isolated and non-connected. Any 'spikes' in certain crimes tend to show up as large percentage point increases but actually involve very low numbers of offenders. Snow season does tend to result in higher crime arising from influx of tourists who come and go, but can be often linked to particular incidents such as underage drinking and drug supply/possession at events such as music festivals.

In the local employment section of this Section, it was identified that the expected economic benefits of the Project are likely to be unevenly distributed. For some people living in communities with the area of social influence, any resultant increase in localised inflation could create further financial pressure on low and very low-income households who have limited ability access to additional income streams. This is likely to contribute to a perception that the Project is responsible for worsening of their living situation, and has the potential to manifest as opportunistic, anti-social behaviour.

From a community cohesion perspective, it was identified that there is a baseline perception that police visibility across the area of influence is low (see Section D-2-5), creating generalised concern that if criminal activity were to increases as an indirect result of the Project, there may be insufficient police resourcing to respond to incidents in a timely way. While it is appreciated that police patrols do provide communities with reassurance, from an NSW police community safety perspective, allocation of resources must necessarily be linked to reported crime rates.

If this impact were to eventuate, advice from NSW Police is that crime statistics by offence types should be carefully monitored and measured. It was emphasised that community members also play an important role, for example in making reports of non urgent crimes via the Police Assistance Line and 'Crime Stoppers'.

5.2.2 Worker behaviour (off-shift)

During community consultation activities, a small number of people expressed concern about potential disruptive behaviour of the Project workforce when 'off shift'. This was largely based on people's existing experiences of visitor behaviour during tourism peaks, when some people cause 'trouble', correlated in people's minds with excess drinking and incidents of sexual assault. Some residents who live in townships around Tumut also recalled this being a concern during previous infrastructure related projects. Other people perceived concerns related to expectations of an increase in 'nuisance' behaviour, such as workers littering from vehicles, or discarding cigarette butts on roadsides.

The concerns about worker behaviour off shift was strongly counterbalanced by people who perceived that the existing SHL workforce are very responsible and held to high community standards that encourage good behaviour.

An interesting finding relating to worker behaviour that arose during focus groups was that people generally did not distinguish between SHL workers and the future Project (Future Generation) workforce, which will effectively be employed as sub-contractors. This is important, because as outlined in the social baseline discussion of existing culture, past and present Snowy Hydro workers are intertwined into the social fabric of townships. This is comparable to other close-knit industries, such as the Australian Defence Force, where local residents perceive that workers and their families have their own distinct social circle, reinforced by company sponsored events.

Since community consultation respondents were apparently unfamiliar with how the Project FIFO/DIDO workforce would operate, they tended to conflate their perceptions of existing SHL workforce behaviour with potential Project workforce behaviour. This limited knowledge about project tender processes and realities of FIFO/DIDO workforces, particularly in Cooma, are likely to have skewed community understandings of how worker behaviour might impact their lives, either as a neutral, negative or positive way.

The potential social impact issue which arises out of this community perception is that it is closely linked to the expectation that SHL will be able to directly leverage Project employment opportunities for locals. This is based on people's knowledge of existing positive employment and education programs that benefit the local community. Examples of these include a SHL graduate and cadetship program which provides local young school leavers traineeship opportunities. This means that in the event the Project workforce is not well integrated socially into the community, there is the potential this could affect existing positive attitudes towards SHL. This is discussed further at Section 5.4.2.

Summary of impact on community

It is assessed as possible that there could be minor, indirect social consequences arising from increased pressure on social cohesion across the area of social influence.

For the duration of the Project, the high level of baseline community resilience and its well-functioning social cohesion may be placed under strain from potential indirect impacts on some disenfranchised groups who feel excluded from the potential economic benefits arising from the Project. For these existing at-risk populations, the

Project may increase community safety concerns. Consultation with NSW Police provided assurance that crime rates in the area are closely and regularly monitored, and so any unusual patterns would be quickly identified and a mitigation response implemented.

Impact characteristics			
Negative	Risk of indirect increase in anti-social behaviour by disenfranchised local residents Risk of poor integration between Project workforce and the local community		
Extent	**Duration**	**Severity**	**Sensitivity**
Likely to mostly affect Cooma	Construction	Similarities expected with incidences associated with fluctuations in visitor populations	Strong existing expectations around SHL workforce being integrated into social networks General unfamiliarity with FIFO/DIDO workforce impacts
Positive	Opportunities for expansion in social networks between residents and workforce Opportunities to establish a culture of mutual respect between Project workers and the community		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Existing and new residents Project workforce	Supports positive SHL reputation in community	Linked to social license to operate	Likely to mostly affect Cooma and surrounding villages

5.3 Access to and use of infrastructure, services and facilities

This category of social impact covers a broad array of infrastructure, services and facilities provided by local, state and federal governments, as well as by for-profit and not-for-profit organisations.

The social context baseline analysis of physical capital (Annexure D-2-2) confirms there is currently reasonable availability of social infrastructure across the area of social influence. Generally, quality of the infrastructure tends to be constrained by often older design, and capacity can be limited due to lower service resourcing arising from comparatively low levels of population-based demand.

The key infrastructure, services and facilities examined in this Section that were considered directly relevant to perceived issues raised during community consultation activities related to:

» health and medical services (hospitals and doctors)

» education services (childcare, schools and tertiary education)

» welfare and community services (such as mental health, community transport, emergency food and housing).

Overall, community engagement survey outcomes (Annexure B-1-8) found there were more respondents who anticipated benefits such as potential increased resourcing for teachers and nurses, or upgraded facilities, compared with the proportion of respondents who were concerned that services may not cope with potential increases in demand.

The Exploratory works SA previously predicted no measurable impacts on the capacity of community services and infrastructure, primarily due to its lower anticipated influx of Project workers (p.100).

Based on the mid scenario workforce generated residential population change of between 570 to 656 people, the Main Works Project is unlikely to trigger sufficient population demand to warrant provision of new infrastructure

facilities. The additional demand may however place some additional pressure on existing community service delivery within the area of social influence, particularly those that may already be struggling to meet existing demand levels. As previously noted, the particular time of year can also impact people's ability to access to services, with peak holiday seasons already contributing to fluctuations in ability to access services such as health and welfare arising from visiting tourists.

> *"Every winter, the populations of our towns increase, and they cope." – focus group participant*

5.3.1 Demand for health and medical services

While rostered on shift, it is important to note that the Project workforce will have access to their own medical facility and staff at the worker accommodation camps to cater for the majority health incidents. In the unlikely event of a major incident that cannot be dealt with on site, Project workers would be transferred by helicopter evacuation, most likely to Canberra or Wagga Wagga hospitals.

Regarding levels of demand by existing populations, the social baseline is that some problems are already being experienced within health and medical services across the area of social influence that are typical of regional areas, and unrelated to the Project. This includes difficulties in attracting and retaining doctors, particularly specialists, and a high dependency on visiting or outreach models of service delivery.

Community consultation activities therefore reflected a more generalised concern that if the Main Works Project results indirectly in an increased demand for health and medical services, it would:

» place further strain on ambulance response times, or result in accidents not being able to be attended to

» people's injuries may not be able to be dealt with as quickly at existing emergency departments at hospitals

» there might be shortfalls in GP availability with associated increases in 'wait' times.

These perceptions that demand for medical services would increase related to a number of groups:

» worker demand for offsite health services, e.g. if an accident or illness requires them to be evacuated

» worker demand for services while off shift, e.g. if a worker is staying in the study area on their rostered days off and needs to see a GP

» family demand for services, arising from relations or friends of workers who relocate to or visit

» general demand for services, arising from the presence of additional ancillary workforces moving to the area who may be employed in industries that indirectly support the Project e.g. delivery services, food services, accommodation services.

People discerned that it was not necessarily the physical, built hospital infrastructure that may need upgrade or expansion to cope with any new demand, but that there is limited availability of professional medical staff who could support an adequate response to any additional need. It was perceived that the kind of medical attention a young, predominately male workforce might require could differ significantly from the medical attention being sought for example by the aging residential population of local townships.

> *"If there was a serious incident at the working site where hundreds of workers could be injured in one accident, [Cooma Hospital] would be completely overwhelmed." – focus group participant*

> *"Building a building is easy: it's the resources, the doctors we need and they're in demand everywhere." – focus group participant*

Health and medical services within the area of social influence are primarily located in Cooma and Tumut which operate as 'hub' sites that then provide outreach to outlying smaller communities. Health and welfare services are often serviced themselves by FIFO or DIDO practitioners who regularly visit from cities such as Wagga Wagga, Canberra or even Sydney. These visiting surgeons and medical students are typically also housed in local short stay accommodation, meaning if availability of accommodation is affected by the Project, there could be indirect social impacts on access to health and medical services.

Another example of a potential indirect impact relates to the previously identified risk that some low-income families may choose to move further away to access cheaper rental housing in the event that housing becomes more

expensive during the Project construction period. If these people are currently dependent on accessing health and medical services, moving further away could disrupt their access to health care, or create additional burdens (e.g. longer travel to access health care programs). Although this is a possible unintended and indirect impact affecting a small number of people, it particularly affects communities with small populations that do not currently have access to local pharmacy's, doctor's clinics or hospitals.

For higher level health care services or complex medical cases, existing residents are routinely referred to and travel to services at Canberra or Wagga Wagga. This is also the process when serious road traffic accidents occur, which sometimes requires evacuation by helicopter. As discussed in Section 5.1.4, it is possible that the Project could cause an increase in road traffic accident impacts affecting workforce, residents and visitor populations. From a health and medical perspective, this has health consequences additional to resourcing initial treatments (e.g. broken bones). Advice from NSW Health is that involvement in traffic accidents can create longer term burdens on families such as from head injury (affecting ability to work), lifelong disability (requiring in home care), and vicarious trauma (mental health for those involved, witnesses and families). For people in regional areas, being involved in a traffic accident can also result in a higher likelihood that people decide to move away from their communities so that they can be closer to specialist care services.

There are two main hospitals in the area of social influence at Cooma and Tumut, as well as a multi-purpose health care service at Tumbarumba with some hospital services.

Cooma hospital is a 41-bed facility with renal and oncology outpatient services onsite with 24-hour Accident and Emergency. Cooma hospital is currently undergoing redevelopment that will provide:

» an expanded Emergency Department and new front entrance

» a new Maternity Department

» a new Ambulatory Care Centre

» expansion of the Medical Imaging Department.

Tumut hospital is a 30-bed facility offering acute care, day surgery, maternity, palliative and paediatric care. The 24-hour Accident and Emergency Department is equipped with telehealth cameras to connect the team in Tumut with specialists through the Critical Care Advisory Service. A full range of community health services are also available including community nursing, allied health and mental health services.

Consultation with the Murrumbidgee Local Health District highlighted that redevelopment of Tumut hospital is a high priority, scheduled to be completed in 2021/2022 to significantly improve the capacity of the emergency department. In contrast to community concern, Tumut Hospital was considered to have relatively stable demand for hospital beds and deemed to have sufficient capacity to cope with additional demand if required. It was noted that as a general trend, in most cases treating patients in outpatient wellness centres or delivering rehabilitation as outreach has better health outcomes than inpatient models. This is being increasingly facilitated through technology and home care services.

It is possible that the hospital redevelopments at Cooma and Tumut could have some unintended cumulative impacts on issues such as building subcontractor availability, but this would be unlikely to impact the provision of health services (see Section 5.10 for discussion of cumulative impacts).

5.3.2 Demand for education services

Community consultation activities suggested there is some optimism in communities that education enrolments numbers could increase as an indirect result of the Project arising from:

» new demand from families of workers who choose to relocate their school aged children to the area of social influence for the duration of the Project

» new demand from the presence of additional families in the area associated with indirect employment generated by the Project.

Early childhood education

Although a detailed forecast age profile of population change is not part of the scope of this SIA, it can be assumed that a proportion (approximately five per cent) of any new incoming residential population might be very young children (aged 0 to 5 years). Based on the projected Project induced residential population change of between 570 to 656 people, this means there could be around 33 very young children who move to the area of social influence for the duration of the Project. Typically, demand for childcare is estimated at one long day care place being required for every three children, indicating the Project could create new demand for 11 new childcare placements. While this is insufficient demand to trigger a new childcare centre, if the majority of this demand were to be concentrated in Cooma, it could potentially be sufficient to require an additional Early Childhood Teacher resourcing at existing childcare centres. This estimate also does not include any potential indirect demand generated by non-Project workforces and their families who might move to the area to take advantage of ancillary job opportunities.

Based on current childcare vacancy data, child care centres in the area of social influence do exhibit some vulnerability in their ability to cope with an influx of demand. Unlike schools, which are designed for very large numbers of students, childcare centres tend to cater for cohorts of between 30 to 90 places. In addition, since attending school is compulsory, planning is designed to respond to fluctuations in numbers, while childcare centres are driven by market-based demand and can be more sensitive to fluctuations in places available. As evidenced by the closure of a large childcare centre in Cooma in late 2018, this could have far reaching social consequences for families. Being a regional area, there is currently not a strong family day care network than could respond to unmet demand from centre based childcare.

In addition to availability of housing, the ability of families to obtain care arrangements for their children is likely to have direct influence on whether Project workers decide to relocate to the area of social influence for the project duration, or travel from out of the area (FIFO/DIDO).

Primary and secondary schools

People living in townships across the area of social influence take great pride in their schools, which act as important hubs of community activity and key locations for social interaction. The school education system is predominantly provided through the government system, supplemented with a few catholic schools and one key independent school (at Jindabyne). Due to the limited choice of schools, some caregivers choose to send their children to boarding school, particularly in senior school years.

Due to longer term changes in the population age profile, particularly affecting proportions of young people, schools in the area were typically designed and built to cope with larger enrolments than there is currently population demand for.

Although a detailed forecast age profile of population change is not part of the scope of this SIA, it can be assumed that a proportion (approximately 15 per cent) of any new incoming residential population will be primary and secondary schoolers (aged 5 to 17 years). Based on the projected Project induced residential population change of between 570 to 656 people, this means there could be around 98 school aged children who move to the area of social influence for the duration of the Project. This estimate does not include any potential indirect demand generated by non-Project workforces who might move to the area with their families to take advantage of ancillary job opportunities.

Consultation with NSW Education (Schools Infrastructure NSW) confirms that key government schools in the area of social influence currently have the following enrolment capacity:

» Monaro High school: up to 400 potential additional enrolment places

» Cooma Public School: up to 120 potential additional enrolment places

» Tumut High School: up to 60 potential additional enrolment places

» Tumut Primary school: up to 100 potential additional enrolment places.

Despite Cooma North Public School and Franklin Public School (Tumut) being considered as having no spare enrolment capacity, these figures indicate that schools in the area could accommodate the potential additional demand generated by the Project.

Tertiary education

The existing social baseline pattern is that younger tertiary aged students tend to move away from the area of social influence after completing high school for education and employment opportunities. There is a strong existing support in communities for the Project to potentially induce further tertiary opportunities within the area of social influence. Aside from TAFE, which focuses on delivering tourism related courses such as hospitality, the Country Universities Centre (CUC) plays an important role in meeting education demand. Its location in Cooma presents an opportunity to meet the expressed community interest in encouraging current and future students to be appropriately trained with skills that allow them to take advantage of potential job opportunities on the Project (discussed at Section 5.1.3).

5.3.3 Demand for welfare services

Across the area of social influence, particularly in Cooma and Tumut, welfare service provision is rarely impacted by changes in visitor populations, with the possible exception of some higher attendance at youth programs during school holiday periods. Most existing demand for welfare services arises from servicing local residential demand. It is not expected that demand for welfare services will increase directly from the Project workforce, or from the families of any Project workforce who decide to relocate.

It is expected however that demand for welfare services from existing residents could increase as an indirect consequence of other impacts on housing (see Section 5.1.2) and employment (see Section 5.1.3). This is because as the negative social effects these are experienced, people who may be already 'doing it tough' are likely to require further support from welfare services. It is considered possible that some individuals and families may relocate to areas that are relatively more affordable, and therefore further away from townships with good access to welfare services. For vulnerable people living in Tumut, this is likely to be to townships such as Adelong, Batlow or Gundagai. For vulnerable people living in Cooma, there are few alternate townships with core services such as schools, with Bombala (1-hour drive away) the most likely alternate destination. If more of these households end up in isolated villages or rural farms in order to access cheaper rent, there may be unintended consequences arising from detachment from established friendship and support networks.

From a human services perspective, Tumut and Cooma are considered satellite offices for many core health and welfare services. It is part of the baseline social situation there is already periods where staff are unavailable on the ground to meet demand. Many services are therefore offered as outreach, or via teleconference.

Summary of impact on demand on access and use of infrastructure, services and facilities

For all the following infrastructure and service types, monitoring of the situation during Exploratory Works will be critical to informing population demand trends that can further anticipate the potential impact of the Main Works Project.

Health and medical services

It is assessed as likely that there could be moderate social consequences arising from increased pressure on health and medical services across the area of social influence.

Due to existing difficulties in access to health and medical services in regional areas, the area of social influence has a lower level of resilience to changes in population-based demand that might arise as a result of the Project.

For day to day health needs, residents could experience higher wait times to access medical professionals. While inconvenient, this is unlikely to impact the quality of their health care, which is assessed by practitioners screening and triaging patients according to need.

If availability of short-stay accommodation in the area of social influence became substantially reduced, it is possible that there may be flow on impacts on the ability of visiting practitioners to provide health and medical services.

In terms of the potential for major workplace accidents that might be experienced by workforce populations, there will be no changes to processes as these incidents are already dealt with via transfer to major hospitals such as Wagga Wagga, Albury, Sydney or Melbourne. In the event of an overall increase in need for helicopter evacuations, it is possible there could be an indirect consequence of placing additional strain on services from hospitals located outside the area of social influence.

For the minority of vulnerable people who are already reliant on welfare support, there could be an increase in demand for some services, or increased inconvenience in people's ability to access them.

Additional mental health services may also be required by individuals with high expectations of direct local employment opportunities if they fail to eventuate (see Section 5.9.2).

Overall, it is likely that there will be some cumulative social impacts arising from the redevelopments of Cooma and Tumut Hospital, noting the timing for these is more likely to conflict with Exploratory Works rather than the Main Works Project.

Education services

It is assessed as possible that there could be moderate social consequences arising from increased pressure on education services across the area of social influence. There is likely to be minimal capacity within existing childcare centres to absorb any significant additional placement demands generated by both the direct and indirect Project workforce.

Public schools in Cooma and Tumut have reasonable identified capacity to absorb additional primary and high school enrolment demand. There is a small risk that education facilities could also experience a counter-impact of losing some enrolments in the event any existing households choose move away from the area to avoid any anticipated or actual negative impacts of the Project.

Overall, minimal social impacts are expected that might affect existing school students.

Welfare services

Both Snowy Monaro Regional Council and Snowy Valleys Council have experienced Community Development staff members who facilitate regular interagency meetings with a wide range of welfare organisations. These organisations have strong established networks with those within the community who may require or are at risk of needing welfare support. Local schools are also a key stakeholder in the community who are likely to notice any new 'on the ground' demand from families who may need assistance, for example via their breakfast programs. Being a large infrastructure project, it is accepted as possible that uneven distribution of positive economic benefits may indirectly cause further disadvantage for a minority of already vulnerable local residents. In SIA practice, this is unfortunately a common burden confined to particular individuals and families, which is set in the context of broader potential public interest benefits of the Project.

Impact characteristics			
Negative	Increased wait times associated with additional demand for health and medical services Decreased availability of long day care places for young children and new demand for school enrolment places, with associated need for resources Further experience of disadvantage by individuals and families already or potentially reliant on welfare services		
Extent	**Duration**	**Severity**	**Sensitivity**
Area of social influence, particularly Cooma	Construction	Evidence of capacity within existing facilities	Health and welfare services already experiencing some strain

Positive	Anticipated increase in vibrancy of community arising from additional demand for education services for young people		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Existing residents New residents	Estimate up to 130 children aged 0 to 17 across social area of influence (from direct Project workforce)	Value association by residents between stronger youth sector and more viable townships	Occurs mostly in Cooma

5.4 Culture

For this SIA, culture refers to people's shared beliefs, customs, values and language or dialect. Three identified potential social impacts on culture for the Project relate to:

» Aboriginal cultural values relating to connection with land

» shared memory, storytelling and values relating to people's cultural and social identity as 'Snowy Hydro towns'

» individual places of significance.

5.4.1 First People's culture

The Exploratory Works EIS identified the risk of loss of Aboriginal cultural heritage as a potential impact. A number of management and mitigation measures were listed for implementation via the Cultural Heritage Management Plan (CHMP). This included management measures for any further Aboriginal cultural heritage values that might be identified during construction.

For the Main Works Project, there is some risk of this impact being exacerbated. As noted in the Aboriginal Cultural Heritage Assessment Report undertaken for the EIS (NSW Archaeology 2019), Aboriginal heritage sites often have high cultural value to the local Aboriginal community given that they provide direct physical and symbolic linkages to their ancestral past and to the landscape. The cultural values of the heritage will almost certainly differ to the archaeological significance values.

5.4.2 Snowy Scheme culture

The existence of the Snowy Scheme forms an important part of community identity in townships across the area of social influence, who still promote themselves as 'Snowy Hydro' towns. Cooma is the location of the Snowy Hydro Discovery Centre which showcases the history of the scheme. A Snowy Scheme Museum is also located at Adaminaby.

Overall, community consultation activities undertaken for this SIA found a number of social identities relating to people's association or otherwise with the 'original' Snowy Scheme. This tended to correlate to the length of time people had lived in the area, namely:

» original Snowy Scheme workers and their families, including people who have lived in the area during and/or since the construction of the original scheme between 1949 and 1974

» current SHL workers and their families, 'locals'. These people were frequently perceived as having a distinct place in communities arising from the way the Snowy Hydro Ltd promote cohesion among its workforce

» individuals and families who have more recently moved to the local area, 'tree changers', retirees, or 'blow ins' who have lived in or around the area usually for less than a decade

» visitors or tourists, who are welcomed as a key part of the local economy but are otherwise not significantly connected to the local Snowy Scheme identity.

The preliminary activities leading to the Project in the area of social influence is now seeing the emergence of a new social identity for the Scheme: Snowy 2.0 and the workforce that will enhance, or even fulfil, the vision of the people who created the original Snowy Scheme.

5.4.3 Sense of place

As outlined in the social baseline, there is a strong existing sense of people's rural identity that is often tied to the 'specialness' of particular natural places across the area of social influence (Annexure D-2-1)

In particular, the Recreational User Study undertaken for the Project (including for the Exploratory Works SA) examined areas within the KNP that people identify as being special to them. Places respondents mentioned during surveying included Long Plain, Lobs Hole, Kiandra, Yarrangobilly, Cabramurra, Three Mile Dam, Rules Point, Sue City, Tantangara, Blue Water Holes, Murrumbidgee River, Currango and Nungar. There were also several answers that summed it up by saying "all of it", implying the entire Project area is perceived as having specialness.

The Exploratory Works SA previously identified minimal sense of loss impacts arising from the disruption and closure of access to some of these special places. The Main Works is likely to extend the period of time and/or recreational areas in which this impact occurs.

Summary of impact on culture

As the Aboriginal Cultural Heritage Assessment Report found that few of the identified locales will be affected by the Project, the social impact risk of further cultural loss is also assessed as being low.

It is assessed as possible that there could be moderate social consequences arising from the introduction of a new social identity to the area of social influence if it leads to any 'othering' of the Snowy 2.0 workforce, potentially leading to a decrease in levels of community cohesion.

It is also assessed as possible that for the Project, there will be continued minor social consequences, such as feelings of frustration or depression, for particular individuals who have strong attachments to places within the area of social influence that are changed as a result of the Project construction works.

For all identified impacts on culture, it is acknowledged that these impacts are highly likely to be experienced differently depending on people's individual circumstances. It is considered probable that the robust program of ongoing community consultation being conducted by SHL will continue to create an ongoing level of awareness and resilience across the area of social influence. It is understood that SHL remains committed to continuing consultation with key stakeholders throughout the Project construction period, as well as ensuring post-Project rehabilitation, or even enhancement, at any places in the KNP which are affected by the Project construction works. These actions have the potential to result in positive benefits to culture across the area of social influence.

Impact characteristics			
Negative	Potential for additional loss of Aboriginal cultural heritage Formation of new social identities that could lead to exacerbation of pressure on levels of community cohesion Temporary and permanent changes to sense of place in particular recreational areas		
Extent	**Duration**	**Severity**	**Sensitivity**
Area of social influence, particularly the KNP	Construction Operation	Strong existing stability relating to access within KNP and social identities formed around original Snowy Scheme	Cultural values are of high importance to the identity of groups and individuals, including First People's

Positive	Potential for new identification of aboriginal archaeological artefacts Strengthening of identity of region as 'Snowy Hydro Towns' Post-construction improvements in amenity at some recreational areas		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
First Peoples Existing residents	Existing culture is highly valued	70 years since original Snowy Scheme was constructed	Mostly within KNP

5.5 Health and wellbeing

For this SIA, health is defined as a state of complete physical, mental and social wellbeing. In this sense, any social impact has the potential to result in poor health outcomes if it causes affected individuals or groups significant stress and anxiety. This in turn can then affect people's physical health. Across all its phases (announcement, Exploratory Works and Main Works) the Project has the potential to unintentionally affect levels of stress for some individuals and groups. In this sense, health and wellbeing matters are indirectly being discussed throughout all sections of this Section.

As the location of Project construction works is located within KNP, well away from built up residential areas, there were only two social groupings considered at risk of experiencing direct health and wellbeing impacts:

» the Project construction workforce

» recreational users.

5.5.1 Project construction workforce

The potential health impacts associated with DIDO/FIFO style work are discussed in Annexure C-3 of this SIA. Based on a review of literature findings, it can be anticipated that changing shift work patterns (especially with rotating shift work and/or long rosters) could lead to health effects not only to Project workers, but also on their partners and children. This can manifest in many ways such as sleep disorders, depression, alcohol and substance abuse or family violence which are all associated with shift work. The proposed rosters or 'swings' for direct Project employees can also impact wellbeing. For workers with spouses and children, it is likely that shorter periods of time away from home may reduce stress and benefit the quality of family life.

The level of health and wellbeing impact to the Project workforce will be largely dependent on the following factors:

» rostering: both for hours worked and length of on swing shifts, impacting work related stress and fatigue

» quality of accommodation, including recreational opportunities and facilitation of contact with families and friends

» contract conditions, relating to substance use management and other behaviours.

During community consultation activities, some concern was also expressed regarding desires to ensure worker safety onsite. Most respondents were unaware that worker accommodation camp amenity includes the provision of medical facilities (see Section 5.3.1). Particular perceived concerns raised were confusion about how workers would:

» access a doctor if they became ill

» be evacuated in the event of a site accident, such as a snake bite or rock fall

» be evacuated in the event of a natural disaster such as bushfire or earthquake.

While people accepted that helicopter was the preferred mode for isolated rescues (this is the current method also used for example during snow season when visitors are involved in accidents), it was perceived as inadequate if a 'mass' incident should occur (such as tunnel collapse, bushfire, bus rollover). While obviously highly unlikely, the social consequences of such a rare incident occurring would have extreme consequences. It is noted though that the potential in particular for natural disasters to occur is already part of the social context baseline condition.

Although the Project will have no impact on the likelihood of such an event occurring, it does increase the number of people potentially exposed to risk for the duration of the construction period.

It is also noted that positive health benefits are likely to be experienced by workers and their families in relation to the economic security offered by direct employment on the Project, i.e. through access to income.

5.5.2 Recreational user wellbeing

Potential public safety risks arising from exposure to environmental hazards from the Project are discussed separately at Section 5.6.

The health and wellbeing concern identified for recreational users of the KNP relates to potential levels of stress experienced by some individuals and groups arising from:

» changed ability to access to some recreational areas (temporary or permanent closure)

» changed character of some recreational areas

» broader environmental concerns (e.g. worry about ecological impacts).

This impact is almost entirely generated by individual perceptions of risk. Mitigation of concern can be effectively managed by the degree of information and reassurance the Project proponent can be provide to people about the nature of and actual level of risk posed by these impacts.

Summary of health and wellbeing impacts

It is assessed as possible that there could be minor impacts to health and wellbeing as a result of employee shift work required for the Project construction. This impact is likely to be limited strictly to the construction period and will affect a small number of individual workers.

Impact characteristics			
Negative	Increased risk of poor health and wellbeing outcomes for workers while on shift Workforce exposure to hazards such as extreme weather and snake bites in the KNP Stress experienced by some recreational users arising from their perception of Project related change		
Extent	**Duration**	**Severity**	**Sensitivity**
Workforce accommodation camps KNP	Construction	Dependent on standard of accommodation camps (quality). Project will have risk management plans Work sites are relatively remote and in natural bush settings	Recreational users have strong attachments to some places Workforce likely to have had previous DIDO/FIFO background Workforce screening includes mental health medical assessment

Positive	Improvements in Project workforce livelihoods and economic security		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Project workforce	Household level	Economic security is linked to wellbeing	Benefits likely to flow primarily to workforce 'source' home (i.e. outside area of social influence)

5.6 Surroundings

The protection of natural environments within the area of social influence is considered of high importance for the maintenance and management of natural capital (outlined in social baseline Annexure D-2-1).

The area of social influence currently enjoys access to very clean air and water, high quality food and low levels of hazards such as dust or noise exposure. It is likely then that people will be more sensitive to any change to this existing level of amenity in the surroundings.

This section explores:

» access to and use of ecosystem services,

» public safety and security

» aesthetic value and/or amenity of natural and built environment.

5.6.1 Ecosystem services

The area of social influence is highly reliant on goods and services provided by the natural environment, including the existing Snowy Scheme. A key objective of the original Snowy Scheme was to mitigate the effects of drought on irrigated agriculture along the Murray River and Murrumbidgee River. Effective ongoing management of reservoir water levels remains a key local community concern. Communications by SHL have consistently stated that the Project will not change the conditions of existing water license.

Impacts on the ecosystem are examined in detail in separate environmental impact studies on groundwater, surface water and aquatic ecology, included in the EIS.

Summary of impact on ecosystem services

Technical reports for the Project detail the assessment of risk to ecosystem services from the Project.

From a social impact perspective, it is possible that there will be minimal impacts arising from changes to the local ecosystem in relation to:

» the financial security of any people whose livelihood is connected to ecosystem services within the KNP

» stress experienced by individuals and groups who are concerned about maintaining the highly valued natural environmental surroundings.

Mitigation of these stakeholder concerns is likely to be addressed through effective communications, including the Snowy Hydro website lake level calculator, which regularly updates storage and inflow information.

Impact characteristics			
Negative	Potential for perceived impacts on water security		
Extent	**Duration**	**Severity**	**Sensitivity**
Perception of links between the project downstream water users/ environmental flows	Construction Operation	NA	Existing major concern in communities relating to current NSW drought experience

5.6.2 Public safety and security

A number of isolated issues were raised during community consultation activities that related to concerns for public safety. It is noted that these concerns are primarily perceived impacts that have likely arisen because people have few points of comparison to other major infrastructure projects to make an informed assessment of how public safety and security might be impacted. For example, respondents had difficultly articulating what construction equipment might be involved in the Project.

The main potential public safety impacts, both discussed earlier in this Section, were:

» increased risk of road traffic accidents

» health and wellbeing impacts for direct Project workers and recreational users.

During the Project there will be temporary access closures at specific locations within KNP to prevent unauthorised public access to construction sites and ensure public safety. This is likely to eliminate exposure of the public to hazardous materials at project sites. It is unlikely that people, such as recreational users, will mistakenly or intentionally access Project work sites and be exposed to public safety hazards.

Post construction, there is an increased risk of more regular changes to water levels at Tantangara Reservoir. Recreational campers especially those who currently visit the area, may be complacent about this effect despite warnings already in place. This is because water levels have been low for some time and the reservoir rarely experiences major fluctuations.

Summary of impact on public safety

Although unlikely, there is a minor increase in risk to public safety arising from post-construction fluctuations in water levels at Tantangara Reservoir. This impact can be entirely mitigated through appropriate recreational user behaviour and effective signage and communications about water level changes.

Impact characteristics			
Negative	Minor risk of increase post-Project frequency of fluctuations in water levels at Tantangara reservoir		
Extent	**Duration**	**Severity**	**Sensitivity**
Tantangara Reservoir	Construction phase Operation (long term)	Major risk to existing recreational users who may be complacent about risk	Few precedent projects create broad ignorance of risk Relatively stable historic water levels

5.6.3 Amenity and aesthetic values

Aesthetic values are broadly defined as the experienced response people have to a place. These values are highly influenced by personal preferences. The technical reports reviewed for this section have made their assessment of what is satisfactory or unsatisfactory according to industry standards and benchmarks at a whole population level, as measured by a range of scientific methodologies.

For this SIA, it is acknowledged that despite risks to aesthetic values being assessed as technically acceptable, people's individual levels of understanding and tolerance of impacts such as noise, dust and visual quality is highly subjective. In addition, any level of exposure to aesthetic value and amenity impacts could result in unintended negative social consequences at an individual level, by causing perceived (psychosomatic) harms.

i. Built environment

There are very few built environments within the KNP that could be affected by the Project. Impacts would be largely limited to specific recreational sites (such as structures associated with horse camps, boat ramps, amenities), discussed in detail at the Recreational Users Impact Study at Annexure G.

In the broader area of social influence, general public access to transport services (such as Snowy Mountains and Wagga Wagga airports) is unlikely to be affected by the additional presence of FIFO workers during the Project construction period.

At intermittent times during construction, it is possible that wharves at the Port of Eden or Port Kembla could be used as the point of access for Project construction equipment. If this occurs, it is possible that this could cause some disruption to the daily lives of locals at these places but for such short periods of time there will likely be no discernible impacts.

A separate Environmental Impact Assessment process (inclusive of social impacts) is concurrently being undertaken for the 'Polo Flat' facility in Cooma, which will be used as a segment factory to produce precast concrete tunnel segments needed for tunnelling for both Exploratory and Main Works aspects of the Project. This segment factory project at Polo Flat is considered as a cumulative impact in a later section of this Section.

ii. Heritage

The Exploratory Works SA previously identified a low level of impacts on items of historic heritage (p.109).

The Main Works Project will result in an extension in the period of which Lobs Hole (which includes historic sites) will be closed to the public. Once the Project is operational, Lobs Hole would re-open for public access, with improved vehicle access which may result in increased visitation (when compared with current levels of remote-camping access).

Due to its location near Tantangara Reservoir, the Main Works Project may also cause disruption to people's access to the historic Currango Homestead, which includes overnight visitation.

iii. Air quality

The Exploratory Works SA identified a low risk to air quality arising from the handling and transport of excavated material, noting the closest sensitive receiver to the potential experience of this impact would be at the Project worker accommodation camps (p.109). The Main Works Project involves a large degree of underground construction, meaning there should be limited impact on air quality across the area of social influence.

As a baseline condition, the existing presence of respiratory conditions in the area of social influence is slightly higher than the NSW average, indicating some potential vulnerability to changes in air quality.

An Air Quality Impact Assessment has been compiled separately to this SIA (EMM Consulting 2019). The key potential areas of impacts considered in this assessment were:

» potential Project worker exposure to dust at onsite construction locations

» increase in air pollution arising from traffic movements generated by the Project

» risk of dust exposure arising from transportation of spoil material.

All air quality risks were assessed as being very low risk. Various mitigations to manage particulate matter during construction are recommended by the Air Quality Impact Assessment, such as paving of roads near Project worker accommodation camps, which are deemed appropriate to effectively mitigate any risk.

iv. Noise and vibration

From a social impact point of view, the main negative social consideration of exposure to noise and vibration is its relationship to people's health and wellbeing. Continued exposure to noise and vibration can elevate stress levels, affect concentration and cognitive function, and interrupt people's sleep.

The Exploratory Works SA previously assessed the potential for low-level social impacts of noise and vibration from construction works and related traffic movements (p.109). The Main Works Project will involve a large degree of tunnelling, exposing the area of social influence to a significant increase in noise and vibration levels.

These impacts are assessed separately in the Noise and Vibration Impact Assessment (NVIA) (EMM Consulting 2019). This assessment concluded that there will be a predicted exceedance at a residential location in Rock Forest at (R6 6560 Snowy Mountains Highway, Adaminaby), which is a result of bulk earthworks and night logistics activities at Rock Forest. The NVIA has identified potential for sleep disturbance due to night-time logistics activities associated with construction at Rock Forest.

Vibration impacts from construction at residential assessment locations were found to be highly unlikely.

Various mitigations to manage noise and vibration are outlined in the assessment. Noise monitoring during the initial stages of construction will be undertaken to determine if actual construction noise levels are above noise management levels (NMLs).

Although not assessed as a potential risk, it is acknowledged that the Projects reliance on a FIFO workforce will result in an increase in aircraft flight movements. The increased regularity of flights over the construction period of the Project potentially constitute a moderate change in noise levels when compared to the current, relatively infrequent schedule of aircraft movements.

5.6.4 Landscape character and visual impacts

The impacts associated with changes to landscape character and visual amenity due to the Project are detailed in the Landscape Character and Visual Impact Assessment conducted by Spackman Mossop Michaels (2019) and included as part of this EIS (Spackman Mossop Michaels 2019).

Within the KNP, existing Snowy Scheme infrastructure has already altered some natural vistas, particularly transmission lines running across areas of the alps (see examples below).

Figure 19 Examples of existing man-made visual impacts in KNP

For the Project, the introduction of new permanent man-made elements into the natural landscape will occur at locations that have previously been visually impacted by Snowy Scheme infrastructure. For some people, these man-made structures may be interpreted negatively as a defacement of the natural landscape. For others, they are interpreted positively as representative of engineering ingenuity and achievement.

A concern sometimes expressed during community consultation activities related to potential impacts on the clearness of water if Project-related materials, 'spoil', was deposited into reservoirs (as opposed to being transported off site). Aside from environmental impact concerns, it was perceived that this could cause the water to become 'murky'. While this effect could possibly occur during the construction phase when spoil is being used to create new landform, it is assessed that in the longer term the spoil will settle and clearness of water anticipated to return to pre-Project clearness.

It was also identified that there is potential for cumulative visual impacts on the landscape related to the future TransGrid Transmission Connection Project.

Summary of impact on aesthetic value and amenity

It is possible there could be some minor social consequences arising from changes in aesthetic values and amenity throughout the area of social influence. Effective mitigation of these impacts will be largely dependent on the degree of implementation and evaluation of recommended management strategies as per the relevant technical assessments.

Some minor positive benefit to aesthetic value and amenity could also possibly eventuate if impacted sites are effectively rehabilitated and improved post-construction.

Impact characteristics			
Negative	Continued interrupted access to some recreational sites within the KNP Continued interrupted access to some European heritage sites within KNP Community concerns arising from community concerns in relation to air pollution, noise and vibration, water quality and further degradation of the scenic quality of KNP		
Extent	**Duration**	**Severity**	**Sensitivity**
KNP Transport routes (including flight paths) Project construction locations Recreational sites	Construction Operation	Cumulative to impact as identified in Exploratory Works	KNP experiences high aesthetic value and amenity with negligible existing exposure to air pollution/ noise and vibration etc. Surface waters are currently very clear.

Positive	Potential improvements to amenity and environmental outcomes at specific sites e.g. clearing of weeds, provision of potential new picnic tables, new tracks, new Snowy Hydro tourism sites for visitors to see.		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Recreational users	Confined to a small number of sites	Sites are highly valued by visitors	Benefit is concentrated within KNP

5.7 Personal and property rights

The Project location within the KNP is highly unusual in terms of the usual definition of property rights. As a National Park, the land on which the Project is located is protected by Commonwealth legislation for purposes relating to environmental conservation. It is therefore almost certain there will be no impact on people's private property rights.

Indirectly, there could be some individuals who may be economically affected, or experience personal disadvantage, as a result of the Project. This would be isolated to particular industries and such as those related to horse-riding, fishing or any potential disruption to visitor industries such as snow skiing.

Summary of impact on personal and property rights

No displacement of persons or requirements for resident resettlement will occur as a result of the Project, which was a major feature of the original Snowy Scheme.

There are a small number of people and businesses whose livelihoods may be indirectly, negatively affected as a result of Project-related activities. Conversely, there may be an economic advantageous impact on people and businesses whose livelihoods are positively linked to the Project, such as via supply chains or land lease arrangements.

For both these impacts, the social consequences are likely to be minor, and are confined to a small number of parties.

Impact characteristics			
Negative	Economic disadvantage for some individuals and businesses arising from interruption to recreation sites (e.g. tourism) or damage to ecosystem services (e.g. fishing)		
Extent	**Duration**	**Severity**	**Sensitivity**
People employed in industries relating to ecosystem services within the KNP	Construction	Likely minor economic impacts to small number of individuals	Income is linked to wellbeing at a household level
Positive	Economic advantage arising from private land owners/ local businesses entering into supply agreements for Project-related activities (by private arrangement)		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
Individuals and businesses with goods and services needed by the Project	Limited	Direct impact to livelihoods at a household level	Confined to a small number of individuals

5.8 Decision-making systems

The extent to which people are able to participate in decisions that affect their lives plays a crucial role in their sense of agency. This includes people's awareness of and access to grievance mechanisms.

The Project has enjoyed a high profile in the broader media as well as across the area of social influence. This has resulted in a positive social consequence, being the creation of a very high level of project awareness and support.

The proponent SHL have, appropriately, ensured that their communications material talks holistically of the Snowy 2.0 Project. For practical infrastructure staging, planning and procurement reasons however, the Project has been split for assessment between its Exploratory Works and Main Works phases. Staged submission and separate approval are considered appropriate for a project of this magnitude and complexity. To some extent however it has complicated the amount of information available at different times for the purposes of consultation with stakeholders, both for this SIA and the broader EIS. This has occasioned technical assessment information only being able to be released to the public as it became available according to the current status of design and planning being undertaken by the contractor. An unintended consequence of this is a perception by some highly engaged community members that information has been 'trickled' down to the public.

Also outside of the proponent's control is also an overarching sense promulgated through media that the Project is a 'done deal'. This perception applies broadly to many large infrastructure projects, particularly those deemed to be in the public interest. It is a feature of most planning systems that community trust is eroded when there is a perception that state and federal planning approvals process (such as this EIS) could be a formality when set against political interests. For the Project, this perception is added to by the Federal Government being the sole owner of Snowy Hydro Ltd, and therefore politically and financially invested in the Project's successful construction.

For the Project, the level and scale of community engagement undertaken to date has been inevitably influenced by high levels of public interest. Crucially, the social impacts of the Project within the area of social influence as identified in this report must also be considered in conjunction with the Project's strategic objectives at a regional, state and even national level, i.e. alignment with government policies relating to energy security.

Mitigation of impacts relating to people's sense of agency in Project decision making can be addressed through effective community and stakeholder management planning. Such plans would ensure affected people have adequate access to accurate information that enables them to make judgements and provide relevant feedback (including grievance mechanisms).

Summary of impact on decision making systems

It is assessed as possible the planning approvals process relating to the Project could contribute to minor consequences, being cumulative erosion in levels of trust in the planning system. This impact arises not only from variations in people's perceptions of opportunities provided by SHL to participate in decision making for the Project, but their broader ability to influence and effect change on government consent authorities decision-making processes for the Project.

Effective management of this impact will be largely dependent on the degree to which comprehensive community and stakeholder management plans are implemented over the life of the Project. This includes a continued commitment to full transparency about details of the Project as it progresses through the planning approvals process, opportunities for ongoing input (including public exhibition) and providing a 'feedback loop' of information so that the community understands how their involvement has impacted decision making. It also extends to ensuring that if the Project is approved, people have the ability to make complaints should they arise, and mechanisms available to address them.

Based on the existing effectiveness of community consultation facilitated by SHL, there is also the possibility of social benefit being created through ongoing engagement with the community during the life of the Project.

Impact characteristics	
Negative	Concern about ensuring availability of Project information to understand extent and timings of impacts Potential for decreased levels of community trust in the planning system approvals process

Extent	Duration	Severity	Sensitivity
General community	Throughout the life of the Project, particularly around approvals (commencement)	Likely minor levels of generalised concern	Project has been well publicised as being in the broader Public Interest
Positive	Potential for improved level of SHL social licence in community		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
General community	Whole area of social influence	Indirectly supports social cohesion	Benefit is concentrated within Cooma (SHL headquarters)

5.9 Fears and aspirations

This impact category relates to the perception groups in the community have about their future and the future of their children. These fears or aspirations can relate to any one, or all of, the social impact categorised already discussed throughout this Section.

As many of the social impact categories discussed have already touched on, there is high expectation throughout the area of social influence of economic benefit arising from the Project. While this SIA is focused on the social impacts of Main Works, it is acknowledged that people consulted with had viewpoints that would be necessarily influenced by localised rumour and speculation that has occurred in the lead up to the first announcement of Snowy 2.0, the consultations undertaken by SHL for Exploratory Works EIS, and ongoing consultations for the Main Works EIS. It is likely that throughout all this circulation of information about the Project, people have felt both concerns and hopes regarding what the future experience of the Project might have on themselves and their families. These perceptions are not dismissed, but have real social impact effects that people experience.

As in the case with many other major infrastructure projects, it was found that the Main Works Project has created both accurate and false expectations across the area of social influence. In particular, the survey conducted for this SIA found that most (56%) of respondents believed the long-term impact of the Project would be positive, or neutral (33%), with only a fraction (3%) of people believing the Project would have negative long-term impacts. It is likely then that these aspirations in particular place communities at risk of feeling disappointed or let down if the benefits that they anticipate from the Project do not eventuate.

For this Project, the fact that Snowy Hydro Ltd is already embedded in the community also represents both a potential benefit and potential risk. The expressed trust and confidence that people have in SHL as a proponent means that people are less likely to be afraid that impacts will be poorly monitored or managed. Conversely, the reputation of SHL could be damaged if they are unable to monitor or manage positive or negative impacts in the way that people expect, even if these expectations are unrealistic.

5.9.1 Expectation of temporary housing 'squeeze'

A key speculation arising from the Project is around both concerns and hopes relating to housing market behaviour. The potential social impacts of this is discussed in detail earlier (Section 5.1.2). There was some evidence collected throughout the consultation activities undertaken for this report that suggested speculative behaviour in the real estate market has been occurring for some time now. Data suggests that there are currently lower levels of housing available for sale across the area of social influence than is typically the case.

5.9.2 Expectation of economic opportunities

Much of the widespread community support for the Project hinges on the expectation that it will lead to localised inflation, or economic 'boom'. A key learning from other major infrastructure projects is that this tends to temporarily increase socio-economic inequality in communities. This is because there will be those who experience benefits

arising from additional income working directly or indirectly on the Project, but those who don't but still bear the experience of rising costs (discussed at Section 5.1.3)

While the outcomes of community engagement activities frequently showed people talking generically about the job 'opportunities' the Project would bring, these tended to be vague hopes of new jobs rather than specific expectations of the particular occupations the Project might require.

> *"I have a son who is an electrical engineer, I hope the project means he might be able to come back to Tumbarumba to live." – Community information session attendee*

> *"I'm interested in job opportunities for my kids: are there going to be jobs for women?" – Community information session attendee*

The widespread expectation of new jobs for local people ties in strongly to the baseline social context situation where some residents in the area of social influence are experiencing insecure employment. Particularly in Tumut with recent industry changes, there are strong hopes that the Project might provide jobs for locals. This may not be a realistic expectation however if people are not appropriately retrained to possess relevant skills the Project requires.

Given the significant role that employment plays in people's lives, being 'out of work' can present real negative mental health consequences. This is particularly the case in regional areas, where suicide rates are already higher than in urban cities. While the effect of other industries closing or laying off staff in the area of social influence is clearly not the proponent's responsibility, it is important to keep in mind as part of the background that is informing people's hopes for new economic opportunities to arise.

Community expectations of economic 'boom' extend to expectations that additional support might also become available for social and community projects. As noted in the social baseline (Section D-2-7) there is currently a high level of trust in SHL that arises from the way the company has established networks of support to community groups. Along with the companies like Visy and Hyne Timber in the Tumut area, SHL are frequently approached by community and volunteer organisations for funding support that is then difficult to withdraw if the projects do not become self-sustaining. An over reliance on SHL supporting community groups has contributed to the high expectations that if the Project proceeds, SHL may have an expanded capacity to 'give back' to the community.

These expectations are also cumulative to previous expectations arising from the sale of SHL shares to the Federal Government. Announced in early 2018, this sale was seen as a 'windfall' that would be spent by the NSW Government on infrastructure in regional areas, understood to include the area of social influence. For example, local residents around Cooma and Adaminaby are highly expectant of the sealing of Bobeyan road from Adaminaby to Canberra, which would cut travel time by about one hour. Again, the broader strategic context of the project suggests that it is not only the proponent's role to manage potential social impacts, but the NSW Government has a role in delivering on promises that creating benefits and opportunities for the local region.

5.9.3 Aspiration for intergenerational energy security

Aside from expectations of a localised economic boom, it was found that broad support for the Project is linked to the community's expectation that renewable energy is the way of the future: not only for the local region, but the whole of the state and across Australia.

This hope is connected to the role of the existing Snowy Scheme as part of the local culture (see Section 5.4.2). People in the area of social influence were found to have a reasonably high level of knowledge about how the scheme works. For example, at community information sessions, people often asked quite specific questions about the Project's capacity, lake levels and other detailed items.

> *"It will drive renewable energy investment" – Community information session attendee*

> *"Will electricity become cheaper, and my bills go down?" – Community information session attendee*

Summary of impact on fears and aspirations

It is assessed as likely that the high expectations in the area of social influence that benefits will flow from the Project will be a challenge to fully realise. As a consequence, some individuals and groups who are hoping to directly benefit from new employment opportunities may potentially experience disappointment.

The likely overall public benefit of the Project relating to its energy-generation objectives are almost certain to eventuate. This will be dependent on the degree to which the Project is able to secure associated future renewable projects, and its end-capacity and costs, with long term benefits likely to range from minor to moderate.

Impact characteristics			
Negative	Stressors arising from worry about housing market speculation Potential disappointment if Project is unable to 'live up' to expected economic prosperity (including post-Project electricity generation)		
Extent	**Duration**	**Severity**	**Sensitivity**
General community People in the labour force	Construction Operation	SHL has trusted/ positive reputation	Specific examples of other industries in the area which have closed/ reduced staff
Positive	Hopes about project ability to create localised economic prosperity and drive post-Project investment in renewable energy projects Hopes for longer term decrease in electricity prices through addition of competition to energy market dynamics		
Interest	**Scale of benefit**	**Importance**	**Equity of distribution**
General community Wider community (NSW/ Australia)	Potential for more renewable energy start-ups/ new industry entrants	Highly valued by people who are concerned about climate change	Benefit largely at household level (electricity prices)

5.10 Cumulative impacts analysis

Cumulative social impacts result when the identified effects of the Project are added to, or interact with, the social impacts of other projects occurring within the same timeframe and/or area of influence.

The key potential cumulative impacts (both positive and negative) of other planned projects in the area is:

» further economic stimulus and benefit arising from employment opportunities

» additional population change (increase) resulting in compounding effects on housing availability and affordability, local employment and traffic

» increased pressure on local infrastructure, such as medical and health services

» additional deterrence for tourists to visit the region (e.g. because of road congestion and/or shortage of available short-term rental options)

» reduced availability of skilled staff to be sourced locally (e.g. competition between sectors for sub-contractor's/ services and supplies)

» additional impacts on visual and scenic qualities of the KNP (applies to TransGrid project only).

Aside from 'business as usual' local building and construction projects, the main known other projects that are at risk of creating cumulative social effects for the Project are summarised below:

Polo Flat Precast Yard

Directly related to the Project, this site in an industrial area in Cooma's North will be a worksite where segments needed for the Project are built before being transported to the Project worksite. Areas of cumulative impact are likely to be:

» additional traffic impacts

» additional noise impacts (24/7 operation).

Future Generation Office

There will be a physical office for Future Generation office staff, primarily management positions, which could be up to 100 people located in Cooma. This direct employment is included in population change projections discussed at Section 5.1.1. Areas of cumulative impact are likely to be:

» concentration of traffic impacts

» economic stimulus in Cooma.

TransGrid Transmission Connection Project

Main transmission works proposed by TransGrid will provide connection between the cableyard and the NEM. The upgrade works to the wider transmission network do not form part of the Project EIS and are subject to separate application and approval processes, managed by TransGrid. As the TransGrid project is due for construction within the same timeframe as the Project, areas of cumulative impact are likely to be:

» increased construction workforce related effects

» additional impacts on the western side of the area of social influence (Tumut and surrounds, extending to the Hume Highway and Wagga Wagga)

» additional changes to the visual landscape.

Cooma and Tumut Hospital Upgrades

Planning is well commenced and construction due for completion during the Project timeframe. Areas of cumulative impact of these upgrades are likely to be:

» increased construction workforce related effects

» increased capacity for medical and health services (positive impact).

Planned and proposed road network upgrades

Due to the limited availability of alternative routes in regional areas, all road construction works have the potential to further disrupt people's ability to move easily around the area of social influence. This is considered a potential additional risk to public road safety. A full list of scheduled Road Works that may contribute to traffic congestion arising from the Project is available via:

» NSW Transport Roads and Maritime Service website (Projects: South West NSW), including upgrade of Gocup Road

» the Snowy Monaro Regional Council website, including Bombeyan Road sealing and Shannon Flat road upgrade

» Snowy Valleys Council website (Major Infrastructure Projects) including Brindabella Road.

Planned and proposed other industry projects

A number of specific examples of private sector projects could also contribute to cumulative impacts across the area of social influence:

» Bombala Sawmill expansion

» Granite Hills Wind Farm (west of Bega)

» Bombala Sawmill expansion

» Visy Pulp and Paper mill expansion.

Go Jindabyne

The development of a 'Go Jindabyne' Masterplan will set out a vision (dated 2036) to help grow Jindabyne into Australia's premier alpine destination and a great place to live and visit year-round. The Masterplan has the potential to include projects relating to housing choice, transport connections and access to local employment that may compete with aspects of the Snowy 2.0 Project. It will also affect the existing social baseline situation in the longer term by potentially changing the numbers of tourists visiting the region, and associated lengths of time the area of social influence experiences the 'peak' impacts of visitor populations.

Summary of cumulative impacts

Much of the discussion around managing cumulative impacts is being led by the NSW Department of Premier and Cabinet along with other key government stakeholders. It is understood that planning has commenced to work together to address many of the identified cumulative issues. It is likely there will be resultant strategies developed and designed to provide additional solutions to help meet the challenges of concurrent projects occurring in the same geographical area as the Project.

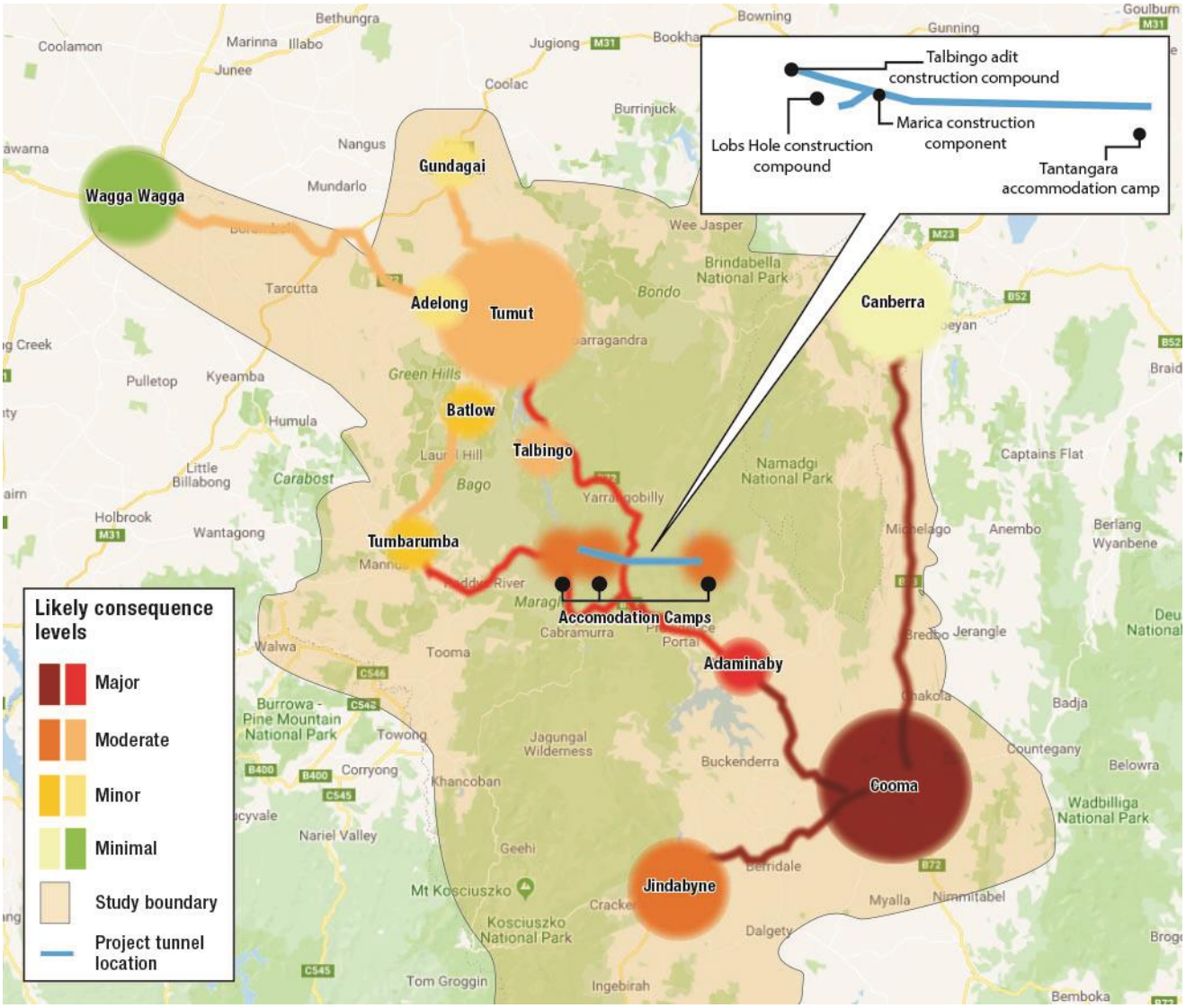
It is also noted that recent methodology adopted by the productivity commission (which also uses a community capitals approach) suggests that of 77 functional economic regions across Australia, Cooma is ranked the 9th most adaptive (Productivity Commission 2019). This finding lends strength to the area of social influence having a reasonable level of baseline resilience to cope with the cumulative impacts of multiple projects.

Impact characteristics			
Negative	Increased infrastructure market competition affecting availability of skilled workforce		
Extent	**Duration**	**Severity**	**Sensitivity**
Whole area of social influence	Construction	Existing shortfall of skilled local workforce means high reliance on FIFO/DIDO is expected to extend to non-Project activities	Existing difficulties experienced in various sectors around attracting and retaining staff

6 Distribution of social impacts

All identified social impacts described in Section 5 are likely to be experienced differently across the place-based communities within the area of social influence. Figure 20 displays the expected spatial distribution of impacts, showing that Cooma is the township most at risk of experiencing social consequences from the Project. A full distributional analysis of impacts is described further at Annexure F.

Figure 20 Distribution of social impacts



7 Conclusion

Preparation of this SIA was undertaken using assessment methodology designed to meet the SEARs for Snowy 2.0 Main Works and best practice social impact assessment principles. This included a precautionary approach being applied to any potential impacts where there is uncertainty if the impact will occur.

A comprehensive assessment of community capitals available across the area of social influence identified many areas of social resilience. This led to a determination that communities will have a reasonable ability to cope with potential impacts.

The SIA found the Project is likely to have numerous positive and negative social effects on communities who live, work and visit the area of social influence. All identified impacts were assessed against a social risk matrix that considers both consequence and likelihood levels. The assessment was also made based on a projected population in-migration scenario predicted to arise from relocating members of the direct Project workforce. It is possible that this underlying assumption could either be an over or under estimate, depending on choices made by people if the Project is approved. For this reason, the SIA recognises that all potential social impacts will require careful monitoring before decisions are made about appropriate interventions.

Chapter 8 provides a detailed summary of all the predicted social impacts of the Project. Overall, it finds that tangible impacts are concentrated primarily within the 'way of life' category. This includes the availability of housing, local employment opportunities, traffic conditions and access to recreation. Most of the other indirect impacts are either unintended or cumulative effects arising from possible interactions with other events occurring as part of the baseline social context.

The vast majority of identified impacts are highly temporal in nature. The social burden on communities is likely to correspond strongly with the presence of the 'peak' construction workforce, expected to last for a period of approximately two years within an overall Project period of approximately six years. Particularly after about the year 2024, the felt experience of impacts will likely taper off and are not expected to be experienced in the longer term as part of the Project's operational phase.

All identified social impacts are also likely to be experienced differently across the place-based communities within the area of social influence. Based on distributional analysis, Cooma is the township predicted to be most at risk of social impacts from the Project.

Overall, this SIA anticipates the Project will create many opportunities and benefits for people in the area of social influence. It will also create some short term undesirable social changes. A key advantage of Snowy 2.0 is that the Exploratory Works phase offers a unique opportunity for social effects to be observed and studied for emerging trends. This provides the Main Works Project an important opportunity to anticipate and respond to potential issues well before construction ramps up to 'peak' workforce. The recommended mitigation and management measures focus on a draft Social Impact Management and Monitoring Plan (SIMMP) that can be refined during implementation. If indicators show that anticipated social impacts are occurring, it is recommended that a Social Impact Response Plan be developed and implemented. Section 9 provides a summary of all recommended mitigations for social impacts.

8 Summary of social impacts

Table 18 Summary table of social impacts

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
Way of Life							
1 Population change							
1.1 Impacts of effective planning and management of population change	Positive	Stimulus effect on economy and social development	Existing residents Local business	Cooma	Construction	B2 Likely Minor	A3 Almost certain Moderate
1.2 Impacts of poor planning and management of population change	Negative	Additional pressure on housing, transport, infrastructure and recreation	Existing residents Local business	Cooma Villages with existing populations <500 people	Construction	B3 Likely Moderate	C3 Possible Moderate
2 Housing availability and affordability							
2.1 New demand for residential housing to rent	Negative	Limited access to housing for rent Limited access to contemporary housing stock Increase in housing asset value leading to increased rents	Relocating employees (direct and indirect) Existing tenants	Cooma	Construction	A4 Almost certain Major	B3 Likely Moderate

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
2.2 New demand for residential housing to purchase	Positive	Reasonable access to housing for purchase Increased housing asset value leading to higher potential sale revenue	Relocating employees (direct and indirect) Existing home owners	Cooma	Construction	B2 Likely Minor	C3 Possible Moderate
2.3 Changes to visitor demand for short stay accommodation	Positive and Negative	Increased variability in room rates and occupancy levels	Tourists Seasonal workers Accommodation providers	Recreational areas, especially Jindabyne	Construction	C3 Possible Moderate	C2 Possible Minor
3 Local employment							
3.1 Opportunities to maximise economic benefits	Positive	Income stimulus from direct and indirect job and supply chain opportunities	Local business Skilled workers	Cooma Tumut Canberra	Construction	B3 Likely Moderate	A4 Almost certain Major
3.2 Ability to access skilled labour force	Negative	Difficulties sourcing qualified/ skilled staff locally Potential localised inflation effects	Local business Unskilled workers Young people	Cooma, Tumut Villages with existing population <500 people	Construction	B3 Likely Moderate	C3 Possible Moderate
4 Traffic conditions							
4.1 Expectation of worsened traffic congestion	Negative	Increased travel times Risk of increased road accidents Some restricted road access in KNP	General public Tourists Project workforce Recreational users	Canberra to Cooma Cooma to Project Site	Construction	A3 Almost certain Moderate	C3 Possible Moderate

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
4.2 Expectation of new road upgrades	Positive	Presence of additional traffic management services Project-related road improvements	Project workforce	Project workforce	Construction Operation	C2 Possible Minor	B3 Likely Moderate
5 Access to recreation							
5.1 Disrupted access to recreation and tourist activities	Negative	Potential decline in visitor volumes Restricted access to some recreation locations	General public Tourists Visitor industry	KNP Jindabyne Snowfields	Construction	B3 Likely Moderate	B2 Likely Minor
5.2 Improved amenity and new visitor destinations	Positive	Increase in visitor volumes at some recreation locations	SHL Tourists	KNP	Operation	C2 Possible Minor	B2 Likely Minor
6 Community							
6.1 Concern about reduced social cohesion	Negative	Potential increased risk of crime and/or anti-social behaviour	General public Disenfranchised groups	Cooma	Construction	C3 Possible Moderate	D2 Unlikely Minor
6.2 Opportunities to improved social cohesion	Positive	Potential for new social networks to form/ culture of mutual respect	General public Project workforce	Cooma	Construction	D2 Unlikely Minor	C2 Possible Minor

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
Access to and use of infrastructure, services and facilities							
7 Access to health and medical services							
7.1 Increased pressure on health and medical services	Negative	Increased waiting times Increased difficult with resourcing	General Public	Cooma Tumut	Construction	B3 Likely Moderate	C2 Possible Minor
8 Access to Education services							
8.1 Increased pressure on education services	Negative	Lower childcare vacancy rates New/changed demand for school enrolment places	Families with very young children/ school aged children	Cooma	Construction	B3 Possible Moderate	C2 Possible Minor
8.2 Increased vibrancy of local schools	Positive	Stakeholder perceived benefits of presence of additional young people	Primary and secondary schools	Cooma	Construction	D2 Unlikely Minor	C2 Possible Minor
9 Access to Community and welfare services							
9.1 Increased pressure on welfare services	Negative	Higher demand for services, including outreach	People at risk/ with existing vulnerabilities	Cooma Tumut	Construction	C3 Possible Moderate	C1 Possible Minimal
10 Culture							
10.1 Potential for additional loss of Aboriginal cultural heritage	Negative	Risk to values relating to physical and symbolic linkages to landscape and ancestry.	First Peoples	KNP Cooma	Construction	D2 Unlikely Minor	E2 Rare Minor

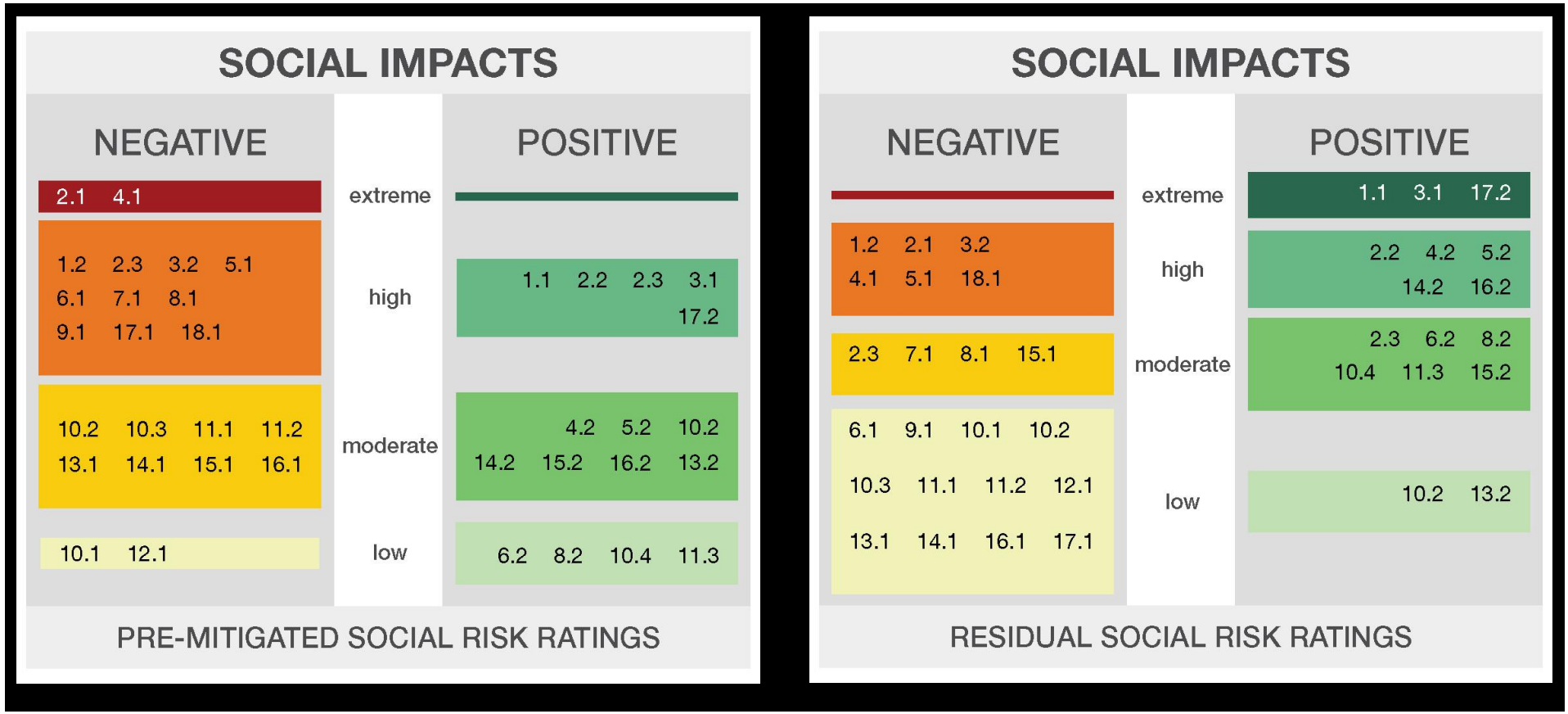
Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
10.2 Formation of new social identities	Negative and Positive	Changes to social cohesion	General Public	Whole area of social influence	Construction Operation	C2 Possible Minor	C1 Possible Minimal
10.3 Changes to sense of place	Negative	Level of stress arising from sense of loss relating to places considered special	Recreational users	Project site	Construction Operation	C2 Possible Minor	C1 Possible Minimal
10.4 Opportunities to strengthen culture	Positive	Potential for new Aboriginal cultural artefacts to be identified Improved amenity at some places of significance	First People's Recreational users of KNP	Whole area of social influence	Operation	D2 Unlikely Minor	C2 Possible Minor
11 Health and wellbeing							
11.1 Workforce wellbeing	Negative	Exposure to potential hazards (on shift)	Project Workforce	Project worksites	Construction	C2 Possible Minor	D2 Unlikely Minor
11.2 Recreational users wellbeing	Negative	Potential inconvenience and frustration/stress	Recreational users	KNP	Construction	C2 Possible Minor	D2 Unlikely Minor
11.3 Economic security	Positive	Wellbeing arising from improved income and financial circumstances	Project Workforce	Project worksites Outside area of social influence	Construction	C1 Possible Minimal	C2 Possible Minor

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
Surroundings							
12 Ecosystem services							
12.1 Perceived risks of environmental damage	Negative	Potential impacts on wellbeing	Recreational users Local business reliant on ecosystem services	KNP	Construction Operation	C1 Possible Minimal	D1 Unlikely Minimal
13 Public safety and security							
13.1 Changes to water levels at Tantangara Reservoir	Negative	Increased risk of water-related accidents	Recreational users	Project worksites Tantangara Reservoir	Operation	C2 Possible Minor	E2 Rare Minor
13.2 Restricted public access to Project works sites	Positive	Decreased risk of public exposure to hazards	Recreational users	Project worksites Tantangara Reservoir	Construction	C2 Possible Minor	E2 Rare Minor
14 Aesthetic value and amenity							
14.1 Changes to aesthetic values and amenity at recreational sites	Negative	Temporary interrupted access to heritage sites Concerns about reductions in amenity relating to air quality, noise, vibration and scenic qualities	Recreational users	KNP Cooma	Construction	C2 Possible Minor	D2 Unlikely Minor
14.2 Changes to aesthetic values and amenity at recreational sites	Positive	Increased amenity at some sites	Recreational users	KNP	Operation	C2 Possible Minor	B2 Likely Minor

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
15 Personal and property rights							
15.1 Personal economic disadvantage	Negative	Arrangements that result in worsened livelihood	Businesses reliant on ecosystem services	KNP	Construction	C2 Possible Minor	C2 Possible Minor
15.2 Personal economic advantage	Positive	Arrangements that result in improved livelihood	Businesses linked to supply chain		Construction	C2 Possible Minor	C2 Possible Minor
16 Decision making systems							
16.1 Exacerbation of low levels of trust in the planning system	Negative	Limited opportunities to provide ongoing input into Project design	General Public	Whole area of social influence, particularly 'Snowy Hydro towns'	Construction	C2 Possible Minor	D2 Unlikely Minor
16.2 Creation of local content supporting SHL social license to operate	Positive	Continued community engagement to support Project Increased likelihood of Project 'legacy'	General Public	Whole area of social influence, particularly 'Snowy Hydro towns'	Construction Operation	C2 Possible Minor	B2 Likely Minor

Social impact definition	Nature of impact	Summary of social impact effect	Key likely affected parties	Key affected locations within AOSI	Expected project phases	Social risk rating	
						Before mitigation or enhancement response	Residual social risk rating
17 Fears and aspirations							
17.1 Disappointment if Project does not create expected benefits	Negative	Experience of stress/ frustration potentially affecting wellbeing	General Public	Whole area of social influence	Construction	B3 Likely Moderate	D2 Unlikely Minor
17.2 Hope for a more secure, renewable energy marker	Positive	Intergenerational Project 'legacy' benefits	General Public	Whole area of social influence	Operation	B2 Likely Minor	A3 Almost certain Moderate
18 Cumulative impacts							
18.1 Risk of inadequate planning to meet challenges of concurrent projects	Negative	Compounding effects on population, demand for infrastructure, access to local employment and functioning of the visitor economy	General Public Local employers	Cooma Tumut Jindabyne	Construction	B3 Likely Moderate	B2 Likely Minor

Figure 21 Social impacts risk ratings



9 Mitigation of social impacts

This section identifies reasonable ways in which the identified adverse social impacts associated with the Project can be mitigated, avoided or offset. It also looks at ways the Project can make a positive contribution to the social development of local communities in the longer term.

This SIA highlights that the Project will create many opportunities and benefits for people in the area of social influence, as well as for the broader region. It also acknowledges that the Project may also create some short term undesirable social change. Mitigations enable a better chance that effective management of the Project will ensure benefits are maximised, and negative impacts avoided or minimised.

As a complex and multi-staged Project that is in the broader public interest, there is an implicit assumption that the Project will proceed. This SIA works within this assumption, with mitigations being an important amelioration device to ensure interventions to mitigate unavoidable impacts are fully considered. For this Project, it is therefore considered appropriate to include mitigations that are the responsibility of parties other than the Project proponent and contractor.

Where the Project demonstrates how potential impacts have been avoided through an existing construction or operation measure, these are listed as a Project Measure (PM). Where other recommended mitigations are suggested, these are listed as an Additional Recommendation (AR).

The Social Impact Management and Monitoring Plan (SIMMP) provided in Annexure A outlines the detailed strategies to be undertaken over the construction and operation phases of the Project. It should be read in conjunction with related management plans such as Community and Stakeholder Management Plans (CSMP). Inputs to the development of the SIMMP include in-depth interviews with Service Level Providers, consultation with Snowy Hydro Limited and the Contractor, desktop review of social impact literature, community engagement surveys and professional social planning expertise.

It is recommended that general impacts expected to be experienced during the life of the Project will be mitigated through refinement and implementation of the SIMMP, based primarily on the level of population in-migration being experienced. This is the responsibility of Snowy Hydro Limited and the Contractor and the timing of implementation will be carried out in accordance with the SIMMP provided at Annexure A. Bi-annual reporting of changes in key social indicators should be compiled in a Social Impact Management and Monitoring Plan Update and made available to Snowy Valleys Council, Snowy Monaro Regional Council and DPIE.

Performance indicators associated with each area of social impact have been provided in the SIMMP. It is recommended that the Contractor provides a draft list of performance-based targets assigned to each indicator with the first (baseline) SIMMP Update report and discuss with DPIE. If, during the monitoring of the performance indicators, it is found that a there is a material negative change over time, it is recommended that a Social Impact Response Plan be developed and implemented.

Table 19 Summary of mitigation measures

Impact area	Management and/or mitigation strategies	Responsibility	Timing
General	» Refine and implement the draft Social Impact Management and Monitoring Plan (SIMMP) provided at Annexure A of this SIA.	Contractor Snowy Hydro Limited	As specified by the SIMMP
General	» As part of any Community and Stakeholder Management Plans (CSMP) being prepared or developed for Snowy 2.0 Main Works, support implementation of the SIMMP through the incorporation of ongoing liaison activities with representatives from Snowy Valleys Council and Snowy Monaro Regional Council to assist monitoring and reporting of change in indicators relating to:	Contractor Snowy Valleys Council Snowy Monaro Regional Council	Bi-annual

Impact area	Management and/or mitigation strategies	Responsibility	Timing
	> population change > housing availability and affordability > local employment and training rates > incidences of traffic congestion > recreation user visitation > demand for health, education and welfare services > cumulative impacts of Snowy 2.0 Main Works.		

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Annexures

A Social Impact Management and Monitoring Plan

B Summary of community engagement

C Context review

D Social baseline analysis

E Workforce impacts scenario analysis

F Distributional impact assessment

G Recreational User Impact Assessment

A Social Impact Management and Monitoring Plan

Table 20 Draft Social Impact Management and Monitoring Plan

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC01	**Population change impacts**	Construction General public, project workforce	» Monitor and report on indicators of change in population throughout the area of social influence to determine the ongoing impact of in-migration associated with the project workforce. > Includes consideration of qualitative information collected from key stakeholder groups/ interagency meetings	Estimated residential and employment populations ABS Census	AR	Snowy Valleys Council Snowy Monaro Regional Council	Bi-annual
			» Monitor the number of direct project employees who express a preference for relocating to the area as part of the recruitment process, and; > Consider the provision of relocation support to Project employees that is responsive to individual household circumstances	Number of employees who indicate intention to relocate prior to acceptance of contract or during the course of employment	AR	Contractor	Ongoing
			» Report on the proportion of project workforce employed with a residential address in the area of social influence > May potentially included estimated household size > De-identified data should be shared with relevant government agencies to assist with service planning	Number and percentage of total project workforce per suburb/postcode	AR	Contractor	Bi-annual

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC02	**Housing availability and affordability**	Life of project General public, tourists, project workforce	» Continue to monitor and report on housing demand as per Exploratory Works mitigation measure SEC01 > Consider regular liaison as required with relevant stakeholders including local real estate agencies, short stay accommodation providers and community housing agencies.	Rental vacancy rates Housing clearance rates Median house/rent prices Number of short-stay accommodation rooms available	AR	Snowy Hydro Limited Contractor	Ongoing
			» Provide workforce accommodation at Lobs Hole, Marica and Tantangara including access to amenities such as social and recreation facilities, telecommunications and room permanency. > Consider the provision of moving support to relocating Project employees that is responsive to individual household circumstances	Number of project workforce living in each accommodation camp Potential workforce satisfaction surveys	PM	Contractor	Ongoing
			» Based on reported trends arising from population change indicators (SOC01), consider accommodation options to provide new housing for project employees at Cooma and/or alternate towns/villages	Number and percentage of total project workforce with residential address by suburb/postcode	AR	Contractor Snowy Hydro Limited	Ongoing
			» Liaise with Snowy Hydro Limited regarding housing demand generated by project employees and, if required: > Investigate options to facilitate rapid delivery of temporary/pop up or pre-fabricated housing, including consideration of contributions that increase internal resourcing capacity	Number and percentage of total project workforce with residential address by suburb/postcode	AR	Snowy Hydro Limited Snowy Valleys Council Snowy Monaro Regional Council	Ongoing

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC03	**Local employment and training opportunities**	Construction Local workforce	» Coordinate an integrated regional approach to addressing skills needs. > A multi-agency approach between the Contractor, Snowy Hydro Limited, Snowy Valleys Council, Snowy Monaro Regional Council, the Department of Industry, Planning and Environment is recommended as a minimum.	Coordination meetings held	AR	Contractor Snowy Hydro Limited Local Government Multiple NSW Government Departments	Ongoing
			» Monitor and report on strategies implemented that preference local employment as per Exploratory Works mitigation measure SEC08. > Consider specific strategies that cater to the needs of key target groups such as school leavers, people who identify as Indigenous, mature aged workforce	Number and percentage of total project workforce with residential address within the area of social influence % of project workforce by target demographics	AR	Contractor Snowy Hydro Limited	Ongoing
		Life of project Local workforce, young people	» Monitor and report on progress of any employment and skills programs implemented to support youth employment in project related industries	Number of programs Potential participant satisfaction surveys % of project workforce aged 18 to 25	AR	Contractor Snowy Hydro Limited	Ongoing
			» Liaise with local tertiary education providers including TAFE NSW and the Country Universities Centre to provide information on relevant skills areas potentially required by the Project > Consider methods to assist promotion of courses available, particularly to residents of Cooma and Tumut	List of course options available that relate directly to core project occupations	AR	Snowy Hydro Limited TAFE NSW Other tertiary education providers	Annual

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC04	**Traffic and transport impacts**	Construction Local residents, visitors	» Implement mitigation and management measures outlined in the Construction Traffic Management Plan (CTMP) » Notify local motorists about traffic conditions and delays in vicinity of project activity via a range of communication methods, i.e. social media, Live Traffic NSW.	Coordinate with Traffic and Transport Communication Working Group	AR	Contractor Snowy Hydro Limited	Ongoing
		Life of project General public, project workforce	» Ensure an effective community complaints mechanism (such as telephone number) is available and well promoted to enable people to report project-related traffic incidents. » Develop and enforce appropriate driver conduct by project workforce.	Number of reported complaints received that relate to project traffic and response to issues recorded	AR	Contractor Snowy Hydro Limited	Ongoing
			» Monitor and report annually on the number of road safety accidents (by township) in the area of social influence, with data shared with key stakeholders. » Liaise with relevant representatives from NSW Police to monitor traffic enforcement particularly during peak tourist seasons. > Consider provision of contributions to support Driver Reviver sites across the area of social influence during peak holiday periods > Where feasible, adjust project related traffic movements to minimise conflicts with school drop off/pick up and holiday peaks > Provide roadside signage in the area encouraging safe driving and thanking people for their patience	Reported road accident data Traffic management measures implemented		Contractor Snowy Hydro Limited NSW Police NSW Roads and Maritime Services Transport for NSW ACT Government	

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC05	**Recreation user impacts**	Life of project Tourists and operators	» Prepare a comprehensive recreational plan for impacted sites, to include: > consultation with NPWS > detail of offsets to be provided > description of measures to be implemented to minimise impacts during construction	Provision of evidence of agreement from NPWS on proposed offsets Number of reported complaints received that relate to recreation sites in the KNP with response to issues recorded	AR	Contractor Snowy Hydro Limited National Parks and Wildlife Service (NPWS)	Ongoing
SOC06	**Community cohesion and wellbeing**	Life of project General public Young people at school	» Continuation of Snowy Hydro programs that support graduate development » No net reduction in level of support provided to community development projects in the area of social influence during the period of construction	Report and monitor progress of participation in programs Number of programs supported and/or value of funding provided	AR	Snowy Hydro Limited	Annual
			» Provision of funding for continuance of the Bronnie Taylor school nurse program trial in Cooma and Tumut for the duration of the project construction (min. 5 years)	Funding support for program provided	AR	NSW Government	Ongoing
SOC07	**Public safety**	Construction General public	» Ensure an effective community complaints mechanism (such as telephone number) is available and well promoted to enable people to report incidents related to employee behaviour » Employee policies to ensure appropriate measures for conduct around discrimination, drugs and alcohol consumption, and harassment	Number of reported complaints received that relate to breaches of employee code of behaviour, with process for investigation/ response to issues recorded	PM	Contractor	Ongoing

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
		Life of project General public	» Continue to monitor crime indicators via Monaro and Murrumbidgee Community Precinct Safety Committee meetings to effectively anticipate interventions required > Consider implementation of preventative initiatives for example increased promotion of the Police Assistance Line	Quarterly crime trend data Number of community precinct safety meetings attended	AR	Snowy Hydro Limited NSW Police	Quarterly
		Operation Recreation users of KNP	» Develop and provide additional communications material (such as website information and physical signage) at Tantangara Reservoir reminding people of potential water level fluctuations	Communications material is developed and delivered	AR	Snowy Hydro Limited National Parks and Wildlife Service (NPWS)	Ongoing
SOC08	**Demand for health, education and welfare services**	Life of project General public	» Monitor feedback from health providers in relation to the provision and demand for services, including those provided by outreach » Report on health trends to assist departmental decision making	NSW health statistics	AR	NSW Health (MBLHD and SLHD)	Annual
			» Monitor and report annually the number of school enrolment demand (by township) in the area of social influence to assist departmental decision making	School enrolment data	AR	NSW Education	Annual
			» Investigate options to support the establishment of new family day care providers as a way of increasing childcare sector capacity	Increase in number of providers (Australian Children's Education and Care Quality Authority)	AR	Snowy Valleys Council Snowy Monaro Regional Council	Ongoing

Ref #	Area of social impact	Phase, stakeholder impacted	Specific management and monitoring measures	Performance indicator	AR/PM	Responsibility	Timing
SOC09	**Health and wellbeing of project workforce**	Construction Project workforce	» Develop and implement a comprehensive workforce health and safety plan, including provision of onsite medical and wellbeing services (including mental health services) » Monitor the number of presentations (and type of incident/illness) to onsite accommodation camp medical facility	Level of access to mental health services Number of medical presentations at worker accommodation	PM	Contractor	Ongoing
SOC10	**Decision making systems**	Life of project General public	» Provide an effective and well publicised complaints mechanism (telephone information hotline) for people to report incidents or provide feedback relating to the project. All calls to be logged with accurate data including call date and time, issue raised, time until issue was responded to. Records kept to describe remedy provided and complainant reported level of satisfaction with outcome. » Report annually on the number of calls received » Report annually on number of complainants who were not satisfied with the resolution of their issue > Monitor trends in unresolved complaints to establish if interventions are required	All calls to be logged Number of calls received Number of unresolved complaints	AR	Contractor Snowy Hydro Limited	Ongoing
SOC11	**Aboriginal and cultural heritage**	Life of project Aboriginal and Torres Strait Islander People	» Implement mitigation and monitoring measures outlined in the Aboriginal Cultural Heritage Management Plan (CHMP).	NA	AR		

It is understood that Community and Stakeholder Management Plans have been developed for Snowy 2.0 to provide a framework for the management of community and stakeholder relations and communication for the project's Main Works. For the purpose of implementing the SIMMP provided in this SIA, the following ongoing liaison activities may be included as part of the CSMP.

Table 21 Summary of recommended ongoing liaison

How often	With who	Purpose	Responsibility
Bi-annual	Representatives from: » Snowy Valleys Council and Snowy Monaro Regional Council (including strategic planning and community development departments) » DPIE	Progress against all performance criteria listed in the SIMMP.	Contractor Snowy Hydro Limited
Quarterly	Traffic and Transport Communication Working Group	Coordinate an approach to disseminating local traffic network information, including to community transport providers.	Contractor Snowy Hydro Limited
Quarterly	Local businesses and jobseekers	Local employment and training opportunities/initiatives and timing of project phases to enable local business owners to plan for additional staff resourcing.	Contractor Snowy Hydro Limited
Quarterly	General public	Update on action taken in relation to housing supply, traffic conditions local employment and training opportunities.	Contractor Snowy Hydro Limited
As necessary	Monaro and Murrumbidgee Community Precinct Safety Committee	Provides an opportunity to monitor crime levels. Community representatives are invited to raise issues.	Contractor Snowy Hydro Limited
Bi-annual	Representatives from NSW Health (MBLHD and SLHD)	Method for monitoring indicators of health demand including number of presentations to onsite worker accommodation medical facilities, discuss capacity in local health facilities in area of social influence.	Snowy Hydro Limited
Bi-annual	Representatives from NSW Department of Education	Method for monitoring indicators of education (schools and out of school hour care) demand in area of social influence	Snowy Hydro Limited

B Summary of community engagement

This Section outlines findings from community engagement activities undertaken for the preparation of the social impact assessment (SIA) for the Snowy 2.0 Main Works project. The objective of engagement activities was to prioritise and articulate the predicted likely social impacts as perceived by different communities within the area of social influence.

We undertook the following community engagement activities:

» 200 Computer Assisted Telephone Interview (CATI) surveys of a representative sample of residents by target gender, age groups and postcodes across the area of social influence.

» 86 'opt in' online surveys completed by a register of interested people on a Snowy Hydro contact list and visiting patrons of the Snowy Hydro Discovery Centre in Cooma.

» two focus groups with a representative sample of local residents, one held in Cooma and one in Tumut.

Table 22 provides a breakdown of respondents by key demographics.

Table 22 Demographic breakdown of community engagement respondents

	Gender		Age		Locations	
Phone survey	Male	58.5%	18 to 39	12.5%	Cooma Adaminaby Jindabyne	34.5% 14.5% 0%
	Female	41.5%	40 to 59	45%	Tumut Talbingo	28.5% 2.5%
			60+	42.5%	Batlow/ Tumbarumba	20%
Online survey	Male	31.1%	18 to 39	13.1%	Cooma Adaminaby Jindabyne	2.3% 5.8% 8.1%
	Female	68.9%	40 to 59	46%	Tumut Talbingo	11.6% 41.9%
			60+	40.9%	Batlow/ Tumbarumba	3.5%
Focus Groups	Male	61.1%	18 to 39	27.7%	Cooma Adaminaby Jindabyne	22% 11% 11%
	Female	38.8%	40 to 59	44.4%	Tumut Talbingo	16% 11%
			60+	27.7%	Batlow Tumbarumba	11% 16%

B-1 Survey outcomes

The survey questions were designed around a list of pre-identified expected social impact areas informed by a review of prior community and stakeholder engagement and social assessments undertaken for Snowy 2.0 Exploratory Works. The identified topic areas were:

» traffic on roads

» house prices

» local jobs

» demand on community infrastructure and services

» access to recreation activities

» neighbourhood safety.

The survey asked respondents to rank each social impact on a ten-point scale in terms of how likely they thought each impact area would affect them (the respondent) or their family during the main construction period. The scale ranged from 0 (very negative) to 10 (very positive). Respondents were provided open ended opportunities to then to expand on their response. For people who responded 0-3 on the scale, we asked them what they thought could be done to mitigate against the negative impact in question. Likewise, for those who responded 7-10 we asked what they thought could be done to make the most of the positive impact in question.

An identical survey instrument was used for both the telephone and online survey. The full survey questions can be found at Appendix B-1-12.

The following phone and online survey results have been reported side by side. Key findings from the surveys were explored further during the two focus groups, summarised separately at Appendix B-2.

B-1-1 Prioritisation of social impact areas

Overall, the majority of respondents believed the social impacts presented to them would lead to neutral impacts for themselves and their families. In addition, more people felt collectively more positive toward the potential social impacts than negatively.

Table 23 indicates how each social impact area was ranked. This is based on those who responded with either a positive or negative expectation toward the impact. The table shows that each of the identified social impacts are expected to be experienced differently, a key aspect of SIA.

The impact on the demand for community infrastructure and services is the only impact that community members ranked in both the top three positive and negative impacts expected. Neighbourhood safety is the only impact that community members ranked in both the bottom three positive and negative impacts expected.

Table 23 Significance ranking (CATI and online survey)

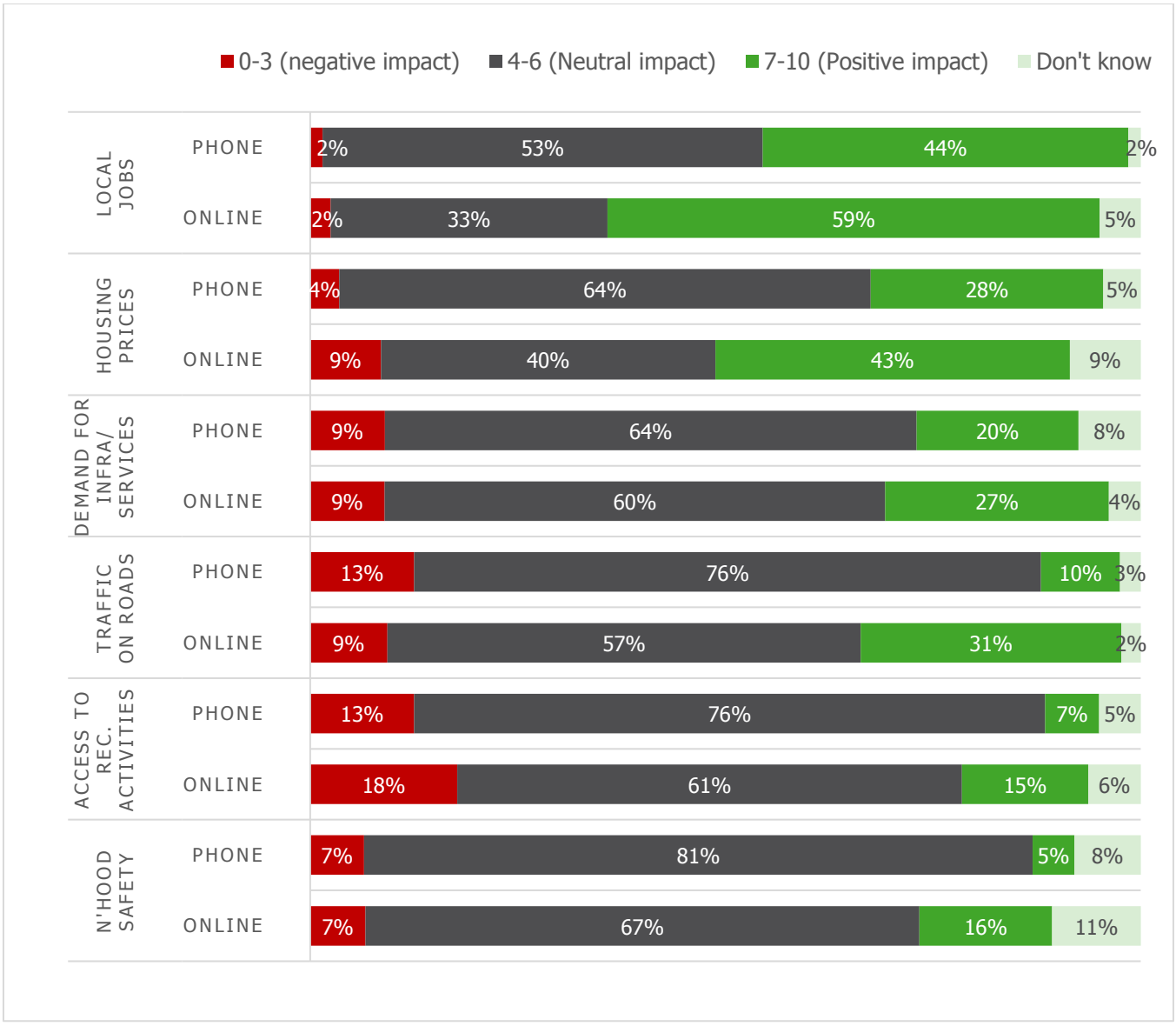
Positive impact	Area of social impact	Negative impact
4	Traffic on roads	**2**
2	House prices	**5**
1	Local jobs	**6**
3	Demand on community infrastructure and services	**3**
5	Access to recreation activities	**1**
6	Neighbourhood safety	**4**

Figure 22shows a detailed breakdown of responses. Of the six impact areas that were part of the survey, the majority (average 61%) of respondents thought each impact would have a 'neutral impact' on them or their families during the main construction period of Snowy 2.0.

When percentages are averaged across the phone and online responses, people felt most positive about the impact on local jobs as a result of Snowy 2.0 Main Works. The strong preference and expectation for the proponent to source labour from local town was evident in the open-ended responses. House prices were considered the second most positive impact expected to occur as a result of the project.

Restricted access to recreational activities as a result of the major construction works was thought to be the most negative potential impact from the project. This was followed by the perception of traffic on roads. Traffic was thought to be affected by construction vehicles, delays, degradation of roads. Conversely some people expected that the project would result in better quality roads after the major construction works had ceased.

Figure 22 Summary of responses to social impacts



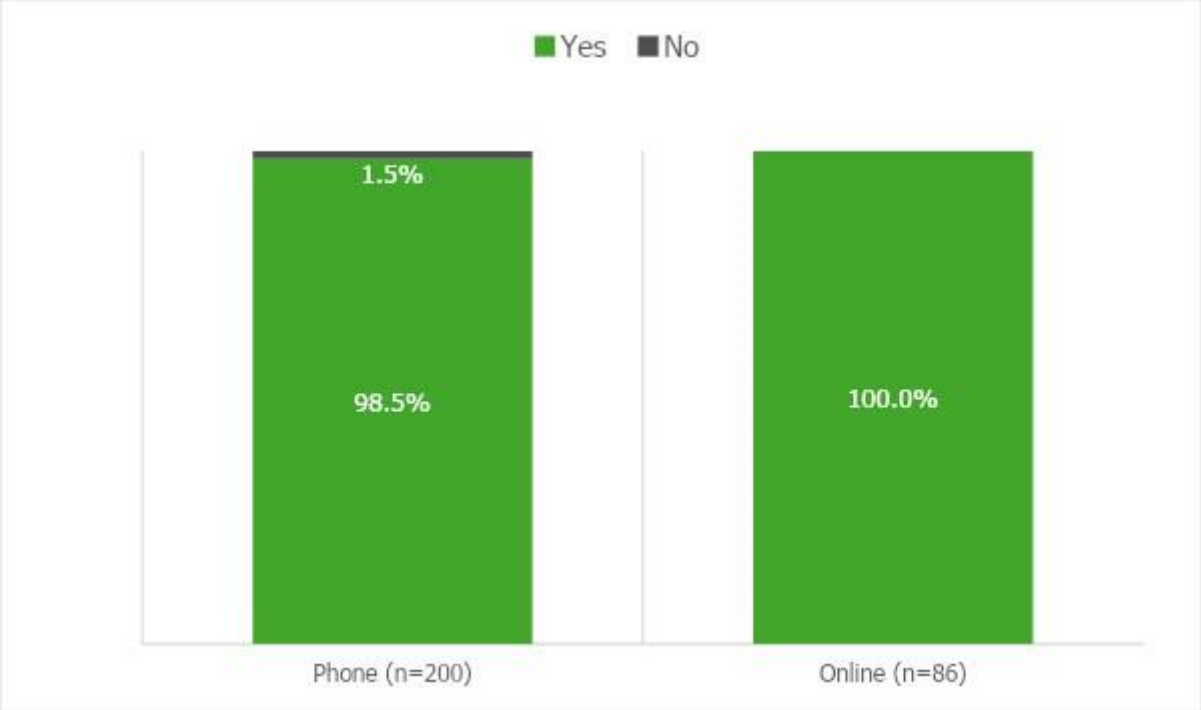
B-1-2 Awareness of project

Ensuring that members of the community are fully informed about the project is an important principle of participatory processes. It ensures respondents understand how they might be affected. The first question in the survey asked whether people were aware of a planned change to the existing Snowy Scheme.

Very few people were not aware of either the original Snowy Scheme or the proposed Snowy 2.0 project. The planned expansion of the Snowy Scheme has been well covered in the local and national media for many years. Therefore, the level of awareness for Snowy 2.0 is very high, particularly in the affected communities in question.

Q1: Are you aware that Snowy Hydro is considering and planning for a pumped-hydro expansion of the Snowy Mountains Scheme?

Figure 23 Level of awareness of Snowy 2.0 project



Q2: Have you heard of Snowy Hydro´s Snowy 2.0 project?

Of the three people who were not aware that Snowy Hydro was considering and planning for the expansion of the Snowy Mountain Scheme, only one person was not aware of the Snowy 2.0 project.

B-1-3 Support for the project

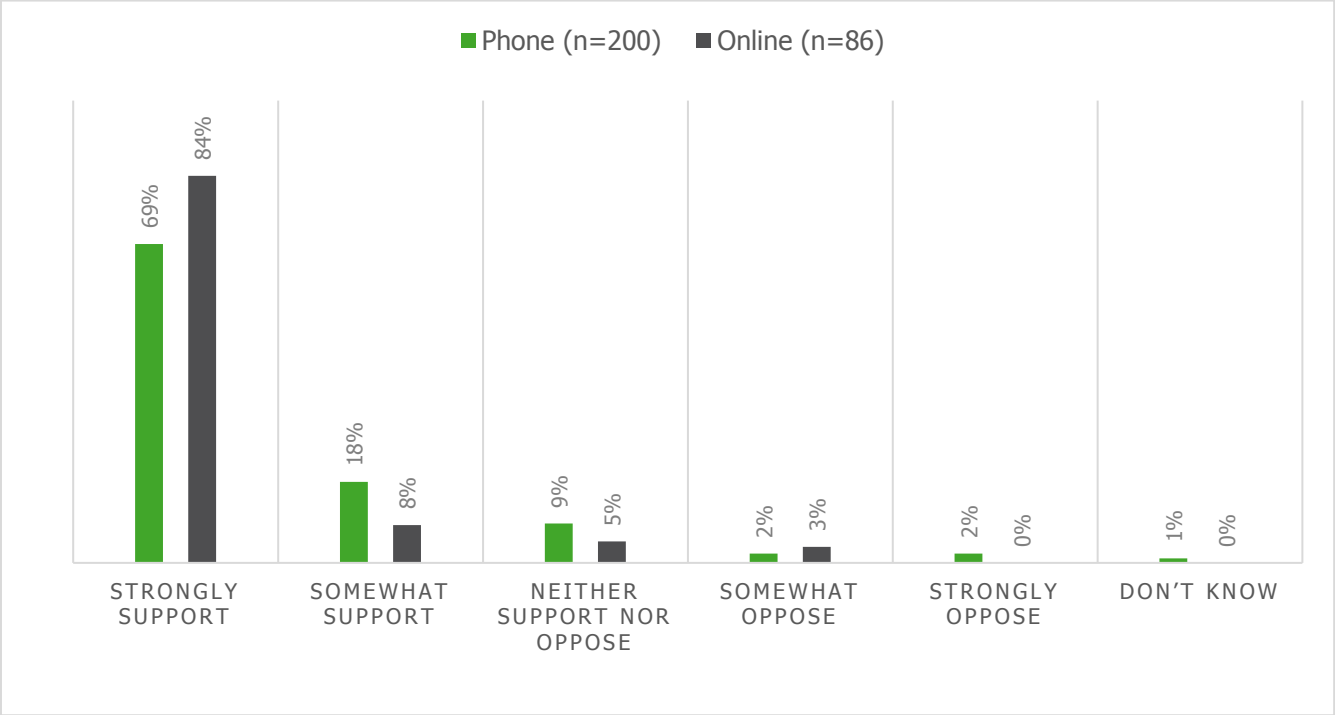
Q3: Based on what you know about the Snowy 2.0 project, to what extent do you support or oppose the Snowy 2.0 project?

We asked people to tell us to what extent they supported or opposed the Snowy 2.0 project, based on what they knew of it.

Overwhelmingly, respondents said they strongly supported the project. Results were consistent between online and telephone surveys. Given the extremely high level of awareness and support for the Snowy 2.0 project, members of the community surveyed can be characterised as well-informed, engaged and expectant that the project will be approved and bring with it a variety of positive social benefits.

Many members of the communities included in this research were either involved, or related to someone involved, in the construction of the original Snowy Scheme. As such they are intrinsically linked and identify strongly with Snowy Hydro as a brand. They likely feel some ownership and a certain level of entitlement to the benefits the expansion of the Snowy Scheme may bring.

Figure 24 Level of community support for Snowy 2.0

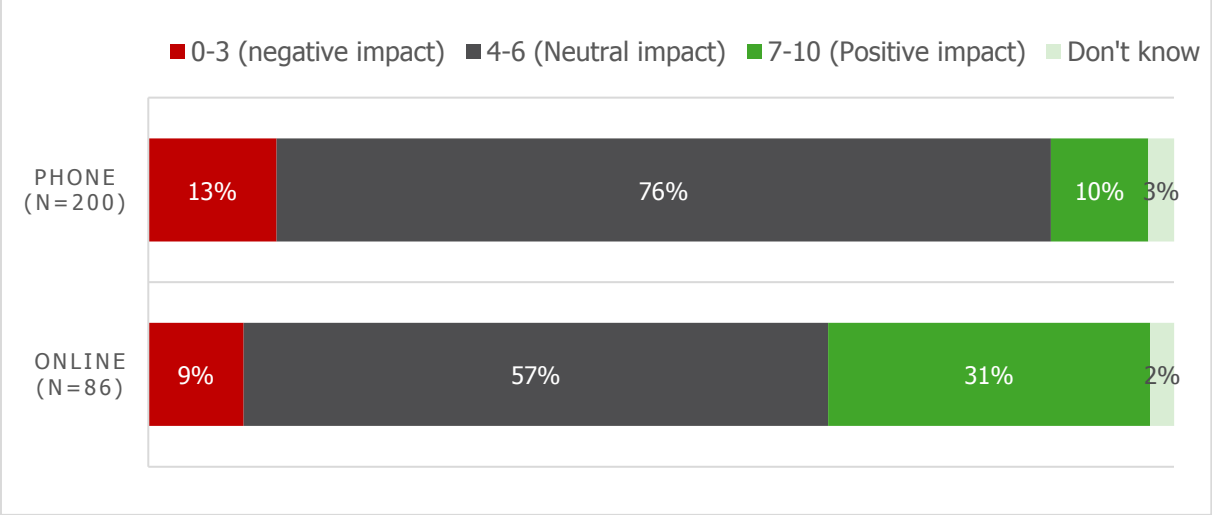


B-1-4 Traffic on roads

We asked people to what extent they thought traffic on roads would impact their or their family's lives as a result of the Snowy 2.0 Main Works project. The majority of people felt traffic on roads would have a neutral impact on their lives overall (Figure 25). While percentages were relatively low, this was the second most negative impact expected.

*Q4: What would be the likely impact of **traffic on roads** on you or your family during the main construction period?*

Figure 25 Perceived impact of traffic on roads



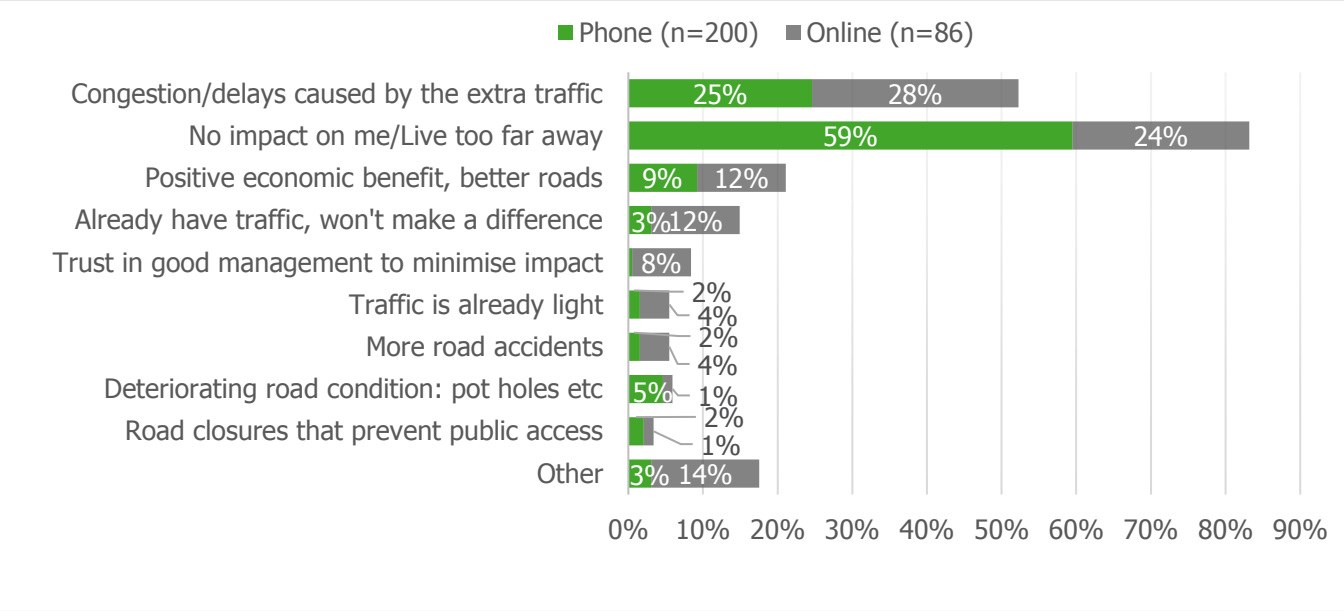
The large number (83%) of neutral responses to this question came from people who said they lived too far away and therefore couldn't see how the issue was have much of an impact on them.

The second largest set of responses (53%) related to the expectation that the increased number of vehicles may cause changes to the volume of traffic on local roads and the Snowy Mountains Highway which would in turn bring

some level of congestion and delays. Twenty one percent of respondents believed that the main construction works would bring positive economic benefits in relation to the improved quality of roads.

Q5: Why do you say that?

Figure 26 Reasons for responses for traffic on roads



Respondents who believed the project would have a very negative impact (0-1 on scale) on traffic on roads were asked what they thought could be done to reduce the potential impact.

Carrying out improvements to the current road network that would include widening, sealing and generally preparing the roads for heavy vehicles was the most common response. It was thought that the Snowy Mountains Highway was going to need the most attention to address the impact of heavy trucks using it during the main construction period. The stretch of road between Jindabyne to Cooma and around Talbingo were cited as specific areas considered to be currently unsuitable for heavy vehicles.

Respondents who believed the project would lead to a very positive impact (9-10 on scale) on traffic on roads were asked what they could be done to make the most of traffic on roads.

The most common response related to the expected benefit that more traffic passing through the local towns can bring by attracting people to the area who would spend money in local businesses. Enhancing this expected positive impact could be achieved by better traffic management in the form of traffic controls, more overtaking lanes, extensive directional road signage for motorists but particularly for cyclists who use the roads through the mountains.

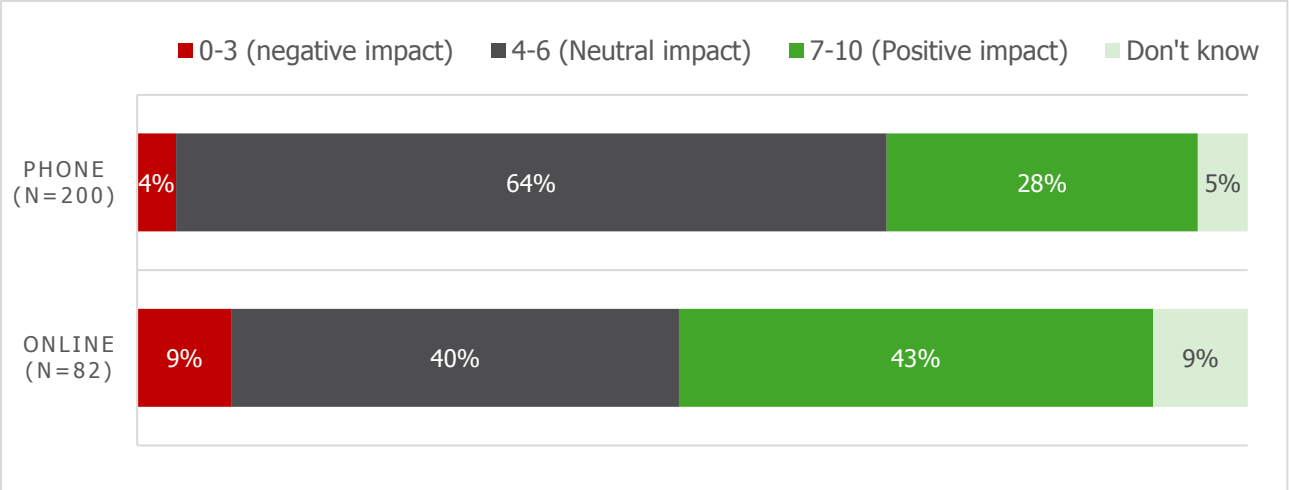
B-1-5 House prices

We asked people about the likely impact of house prices as a result of the project. This was seen as a largely positive impact for community members and one of the most anticipated benefits of the Snowy 2.0 project. While this question asks people to think about the project's impact on housing prices and affordability, people associated housing affordability with the effect on housing availability.

Distributional equity is an important principle to consider in relation to this impact area, namely that the impact of a change in house prices is one that can be experienced differently by different people. For those who believe the benefit to them is in increased house prices, a seller's market was seen as a positive biproduct of the project. For those who see a decrease in house prices as a positive impact on them believe they will benefit from a buyer's market. Based on this result, there was a large number of people who would expect to benefit from increased property value so they could decide to sell or rent out their house or not. Conversely some people believed that this issue would bring a negative impact to their household in relation to housing availability.

*Q6 What would be the likely impact on you or your family (during the main construction period) on **housing prices**?*

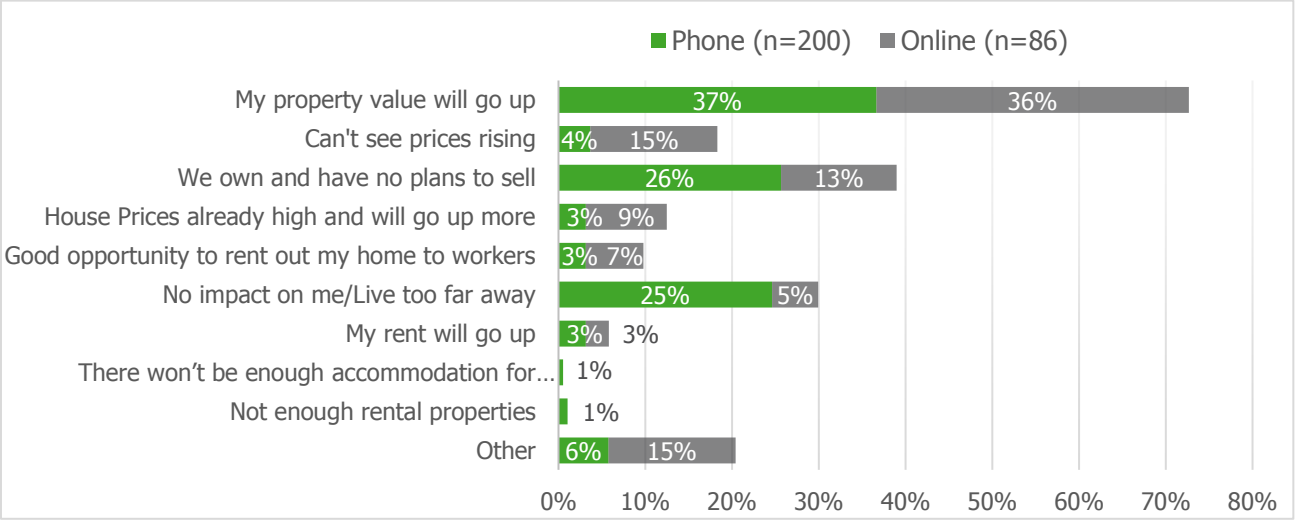
Figure 27 Perceived impact on house prices



As previously mentioned, most people (73%) associated positive impacts with increased property values and were hopeful of this occurring.

Q7: Why do you say that?

Figure 28 Reason for response to change in house prices



Respondents who believed the project would have a negative impact (0-1 on scale) on housing prices were asked what they thought could be done to reduce the potential impact.

There were mixed views on the best way to mitigate the potential impact of a fall in house prices.

Regarding the potential fall in **availability of housing**, some people suggested more land could be released. It was also thought that the worker accommodation camps would alleviate the pressure on the local housing market. There was a sense that the supply of housing in the regions was underserviced by the social infrastructure in Jindabyne. Regarding the expected change to **housing affordability** and the impact on rental prices, one pensioner questioned whether they would be able to continue to afford their rent. Government regulation in relation to the short-term rental market and provision of more subsidised rental housing was also suggested.

Respondents who believed the project would lead to a positive impact (9-10 on scale) on housing prices were asked what they could be done to make the most of this potential positive social impact.

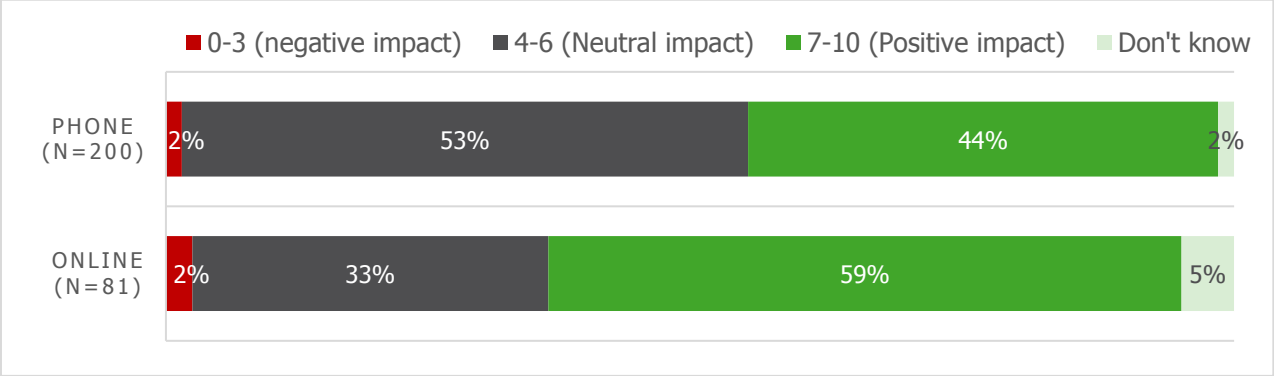
Regarding **housing availability**, some people raised the preference for workers to be housed in the local community, rather than in separate accommodation camps. Overall the sentiment was that to enhance a positive impact on **housing affordability and availability**, more houses should be built to cope with the demand, particularly rental accommodation in Cooma. However, making use of existing vacant properties in the vicinity of local towns was considered to be the preferred measure before building new houses. It is likely that if an increase in house prices is the result of an increased demand by construction workers, some respondents said they would sell their houses.

B-1-6 Local jobs

Local employment is a front-of-mind topic for members of local communities facing major development and infrastructure projects. We asked people to what extent they expect the project would have an impact on them in the context of local jobs.

*Q8: Using the same scale, what would be the likely impact on you or your family (during the main construction period) on **local jobs**?*

Figure 29 Perceived impact on local jobs

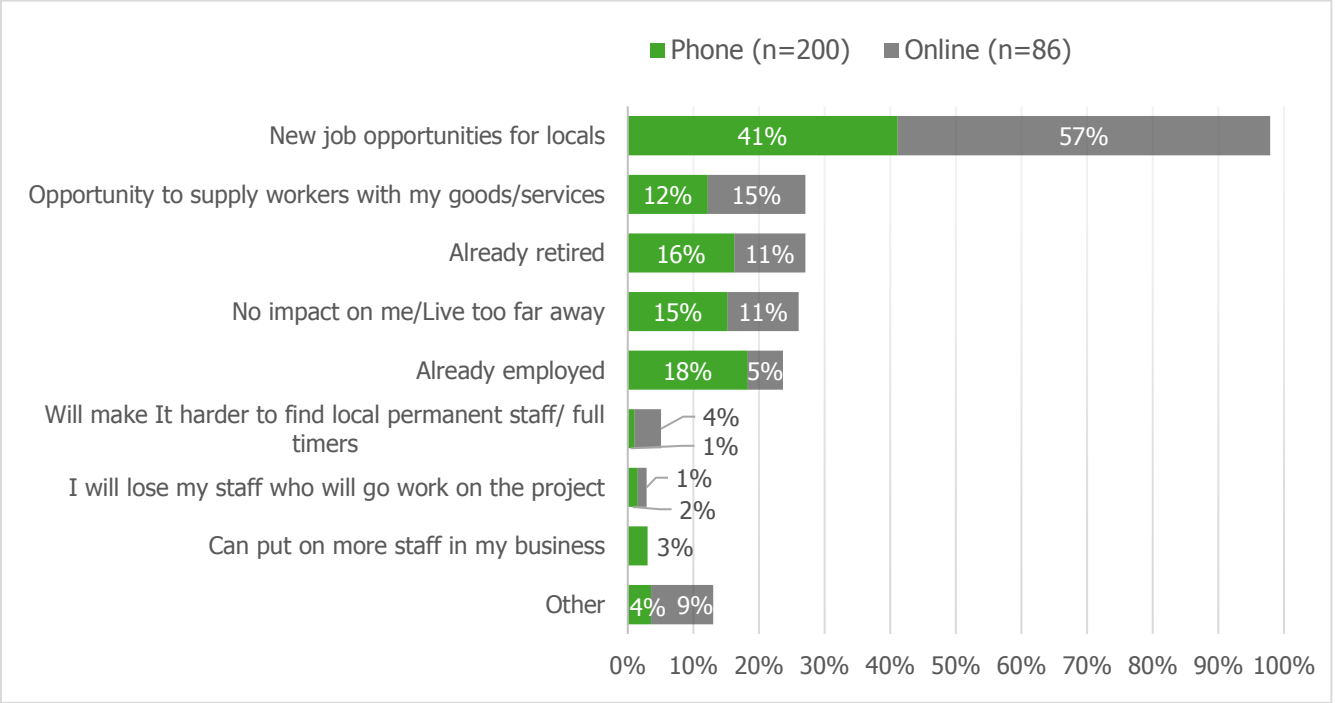


Overall respondents believed the project will have a positive impact by stimulating local employment. There were two ways in which this was thought to happen. Firstly, by the proponent recruiting for project-based roles from local towns, and secondly by the existing local businesses being able to provide services to the project. Additionally, the influx of construction and project workers spending in local towns would stimulate the local economy and local businesses.

Those who believed the project would have a negative impact on local jobs were concerned that either their employees would be lured away to work on site and/or this would make it harder for local employers to find locally-based permanent full-time staff, see Figure 30.

Q9: Why do you say that?

Figure 30 Reasons for response on local jobs



Respondents who believed the project would have a negative impact (0-1 on scale) on local jobs were asked what they thought could be done to reduce the potential impact. There were only two responses to this question. They related to preferencing local labour due to the closure of two mills (Tumut area) and the need for government assistance for local farmers to retain their workers.

Respondents who believed the project would lead to a positive impact (9-10 on scale) on local jobs were asked what they could be done to make the most of this potential positive social impact.

The local communities are a highly informed and knowledgeable cohort. They have experienced the effects of long-term construction and infrastructure projects and are aware of the boom and bust impacts often associated with large-scale resources projects.

There were seventy individual responses to this question. The positive impact on local jobs is considered to be one of the most evident positive social impacts to materialise as a result of the Snowy 2.0 Main Works project. Respondents referenced the closure of the mill as a reason to recuperate the loss of local jobs.

Specific enhancement measures included:

» The majority of respondents felt very strongly that the construction workforce should be recruited locally before using FIFO or DIDO workers. Likewise, local services should be used in the first instance. The desired result would be a boost to the number and range of new shops that an increased population might attract, wages spending in local towns and businesses and the provision of infrastructure.

» Enabling workers and their families to get pre-accreditation for skills and trades likely to be needed during the Main Works by providing early information and job advertisements at employment hubs in Tumut, Cooma and Jindabyne

» Partnering and/or negotiating with the TAFE NSW Cooma to provide courses that relate to the specific skills and trades likely to be needed. Early notification of skills requirements means candidates can get the appropriate qualifications before construction commences

» Ensure apprenticeships and traineeships are offered to young people

» Create a local trades and services register for the contractor and Snowy Hydro to use when resourcing construction works

A specific sentiment that came from the survey respondents was the need to ensure a fair distribution of social benefits. This relates to an equal distribution of new population, including where any workers choose to live. This

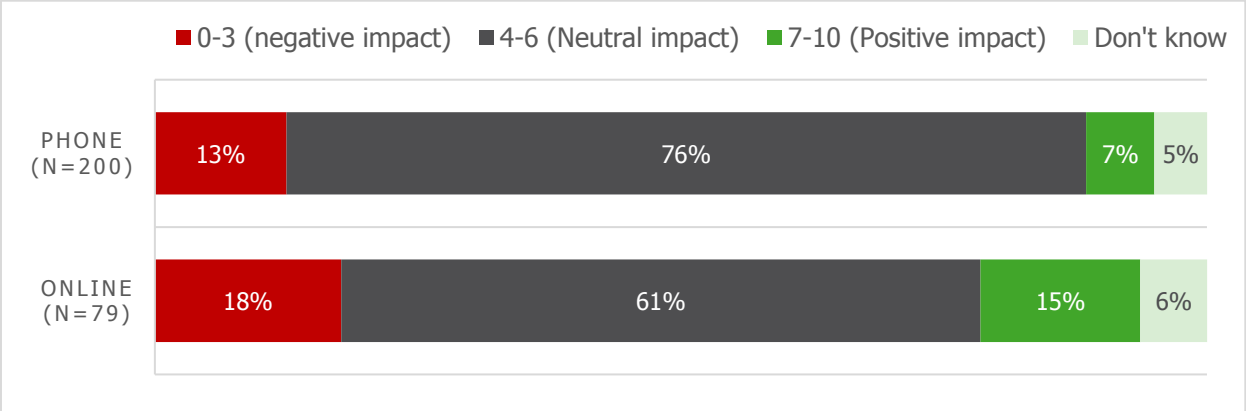
is because respondents feel strongly that the economic benefit from Snowy 2.0 Main Works should be felt throughout the region's towns. Locals would also like to see Snowy Hydro put a legacy in place that continues past the Snowy 2.0 so as to avoid the boom and bust effect often seen in regional towns.

B-1-7 Access to recreation activities

When compared to the other suggested social impact areas, a change to the level of access to recreation activities was cited as the most negative perceived impact expected to result from the Snowy 2.0 project, see Figure 31. Having said this, most people felt that specifically to them, a change to access to recreation activities would have a neutral impact on them. A separate Recreational Users Impact Assessment is available at Annexure G.

Q10: What would be the likely impact on you or your family (during the main construction period) on ***access to recreational activities such as fishing, camping, horse riding, water sports or bushwalking?***

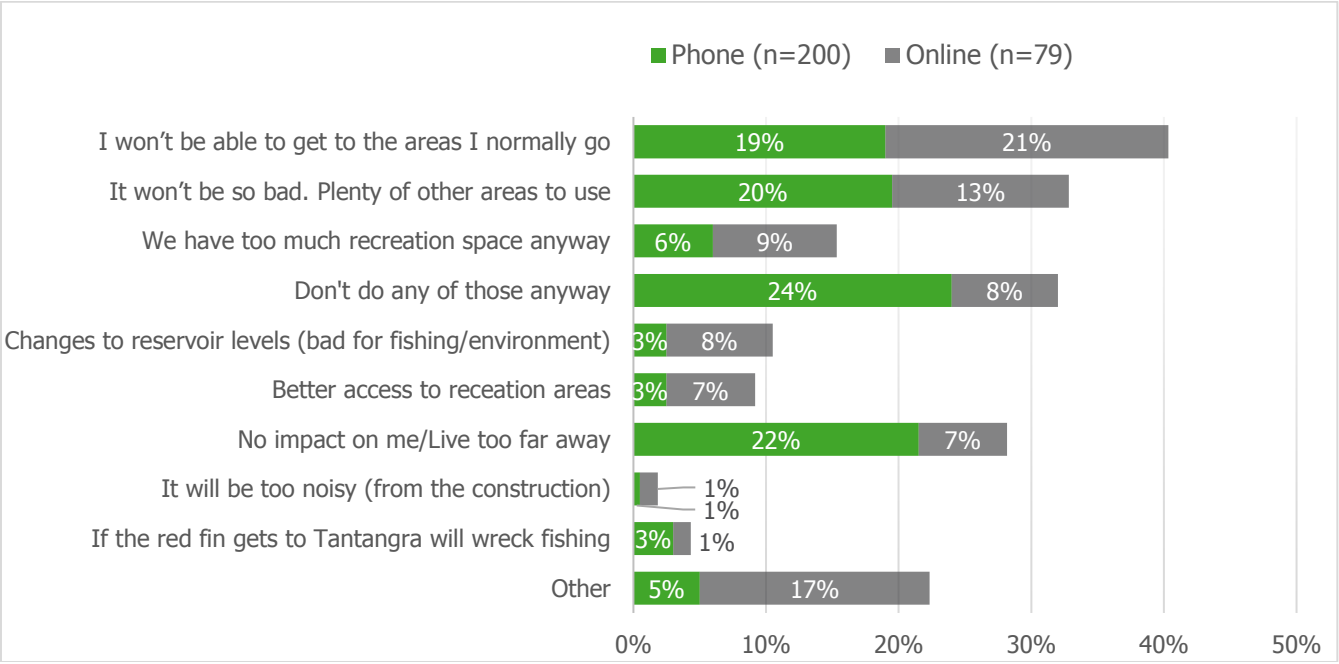
Figure 31 Perceived impact of change to access to recreation activities



We asked people to elaborate on their concerns about this issue. The highest response (40%) related to people believing they won't be able to access the areas they normally use for recreational activities. Interestingly, the second highest response was from people who believe that this impact wouldn't be so bad because there are a number of other places to use for recreation.

Q11: Why do you say that?

Figure 32 Reasons for response for change to access to recreation activities



Respondents who believed the project would have a negative impact (0-1 on scale) on their level of access to recreational activities such as fishing, camping, horse riding, water sports or bushwalking were asked what they thought could be done to reduce the potential impact.

Overall respondents were realistic about the expected impact the Snowy 2.0 Main Works project would have on recreational activities in the KNP. Reference was made to the Talbingo boat ramp and needing an alternative if the boat ramp is to be closed. Additional suggestions included:

» Monitoring water levels in the Talbingo and Tantangara dams – i.e. minimum 35%

» Maintain a central point of clear communication about access and closures for recreation users, updated daily

» Ensure worker behaviour in the natural environment complies with respect and leave no harm mentality

» Look for alternatives or offsets by working with NPWS

» Stop construction works in Tantangara region during peak holiday periods but ensure when access is open public safety is maintained

Respondents who believed the project would lead to a positive impact (9-10 on scale) on their level of access to recreational activities such as fishing, camping, horse riding, water sports or bushwalking were asked what they could be done to make the most of this potential positive social impact.

Respondents suggested Snowy Hydro could display apologetic signage acknowledging the disruption and explaining that the it is temporary.

Additional responses to this question related to the possibility of increased provision of recreational infrastructure in lieu of those being affected by the construction works. This is explored in the next section.

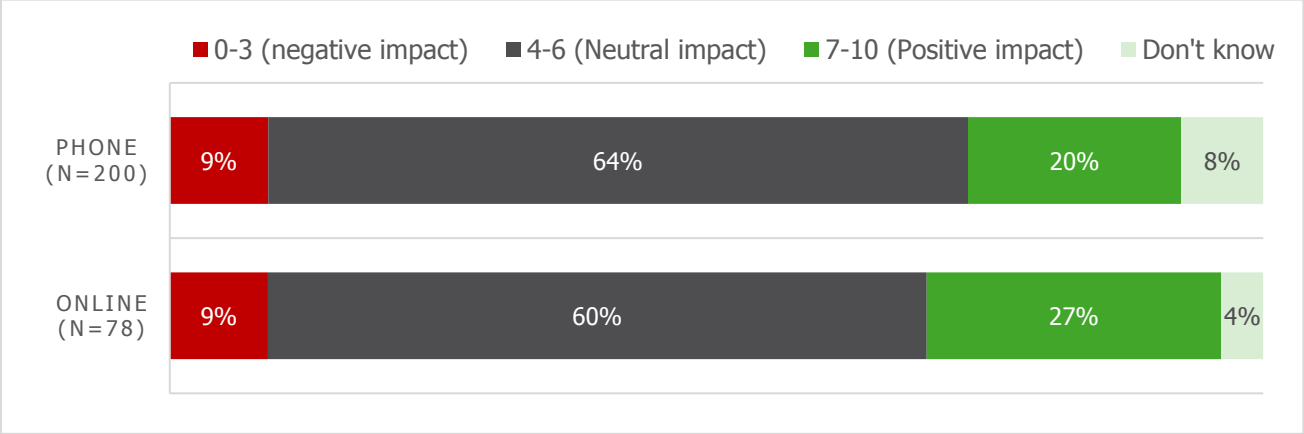
B-1-8 Demand for community infrastructure and services

This issue relates to the impact of an increased worker population in local towns and what affect this might have on the demand and capacity of local community infrastructure and services. Community infrastructure and services refers to schools, hospitals or sporting facilities such as swimming pools and courts.

The majority of respondents felt the project would cause a neutral impact on themselves or their families.

*Q12: What would be the likely impact on you or your family (during the main construction period) on **demand for community infrastructure and services, such schools, hospitals or sporting facilities like pools?***

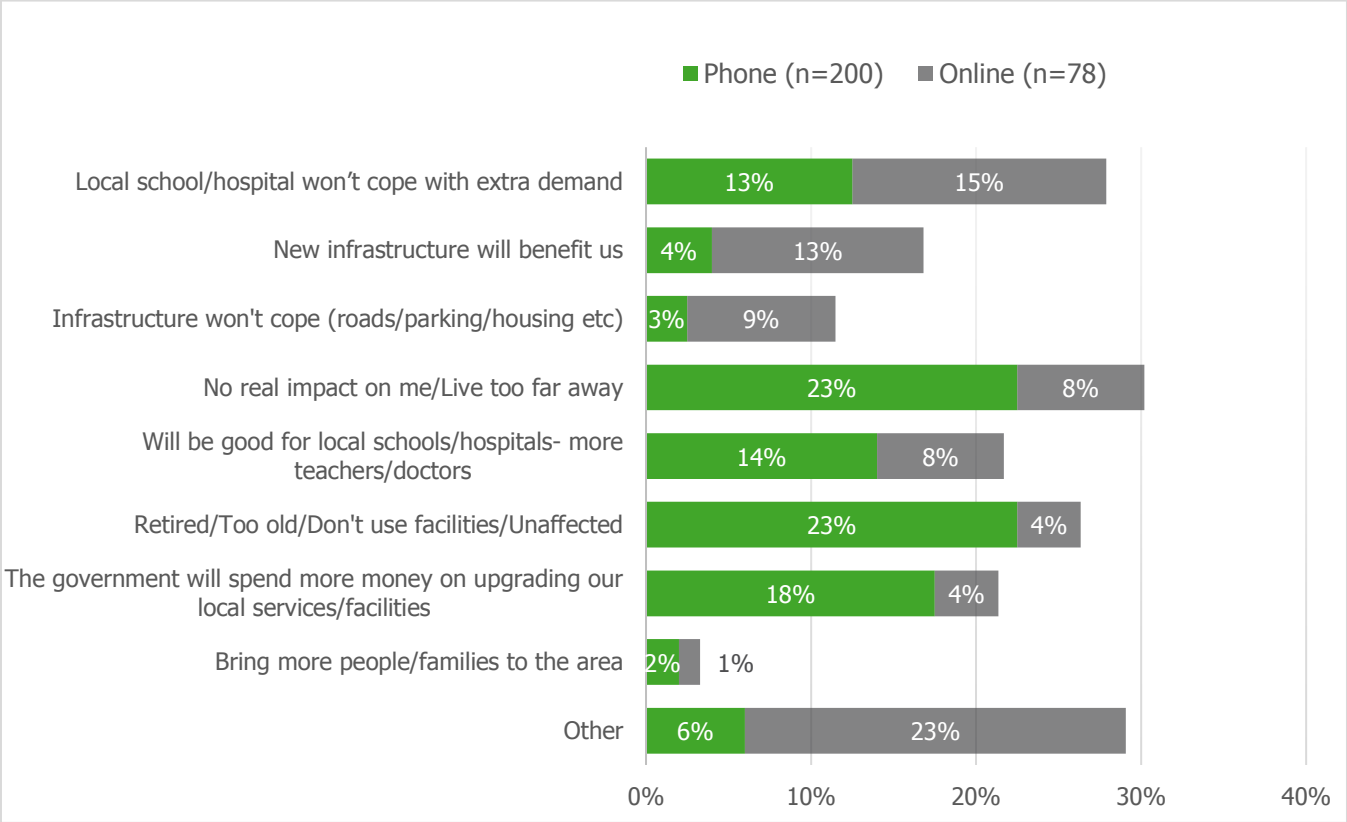
Figure 33 Perceived impact on demand for community infrastructure and services



Close to one quarter of all respondents to this question felt the project would actually lead to a positive impact on the demand for community infrastructure and services. Amongst these people 22% believed the government would spend money on upgrading local services and facilities.

Q13: Why do you say that?

Figure 34 Reasons for response for demand for community infrastructure and services



Respondents who believed the project would have a negative impact (0-1 on scale) on demand for community infrastructure during main construction works were asked what they thought could be done to reduce the potential impact.

Mitigations suggested in response to this potential negative social impact relate to the provision of new or upgrades to existing community infrastructure. Some respondents felt that essential services like education, healthcare and aged care were underserviced and understaffed. There was a consistent sentiment that government funding is required to provide capital to undertake the provision or upgrades required. It was felt that local council was responsible for pre-emptive planning and funding agreements to meet the demand.

Respondents who believed the project would lead to a positive impact (9-10 on scale) on demand for community infrastructure were asked what they could be done to make the most of this potential positive social impact.

Respondents felt that if the demand for community infrastructure was met it would stimulate more jobs and investment in the area as it becomes a more attractive place to live.

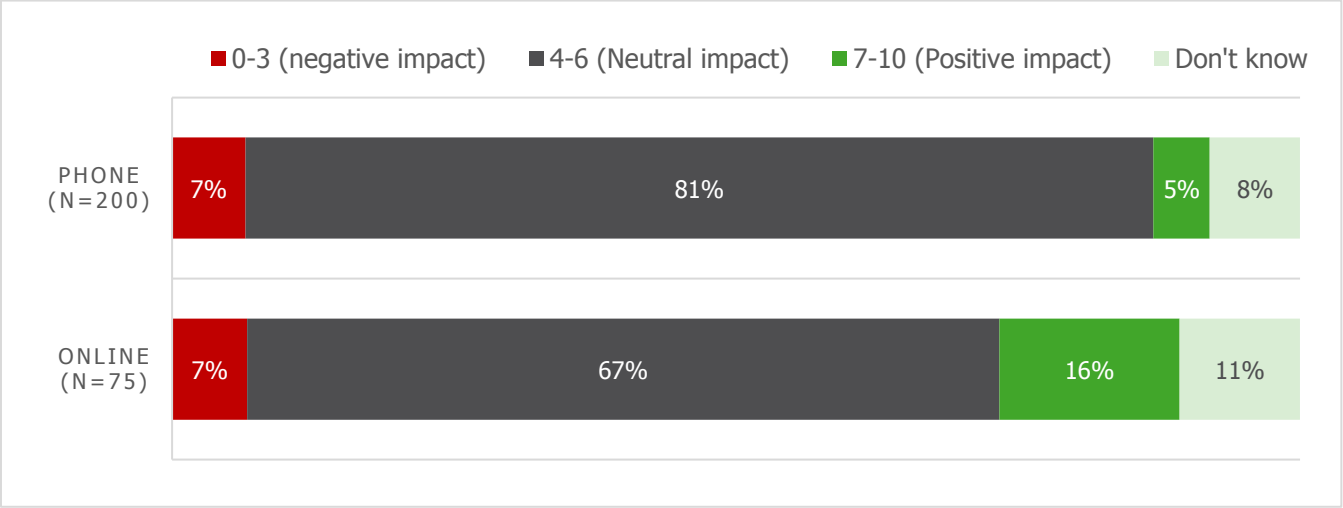
B-1-9 Social cohesion and neighbourhood safety

This issue relates to the impact of a potential influx of workers in local towns and what affect this might have on the sense of community and cooperation between individuals and groups.

*Q14: What would be the likely impact on you or your family (during the main construction period) on **sense of cohesion or neighbourhood safety in your community?***

The majority of respondents felt the project would cause a neutral impact on themselves or their families. Around 10% of respondents felt the project would lead to a positive impact on neighbourhood safety and community cohesion, and less than 10% a negative impact.

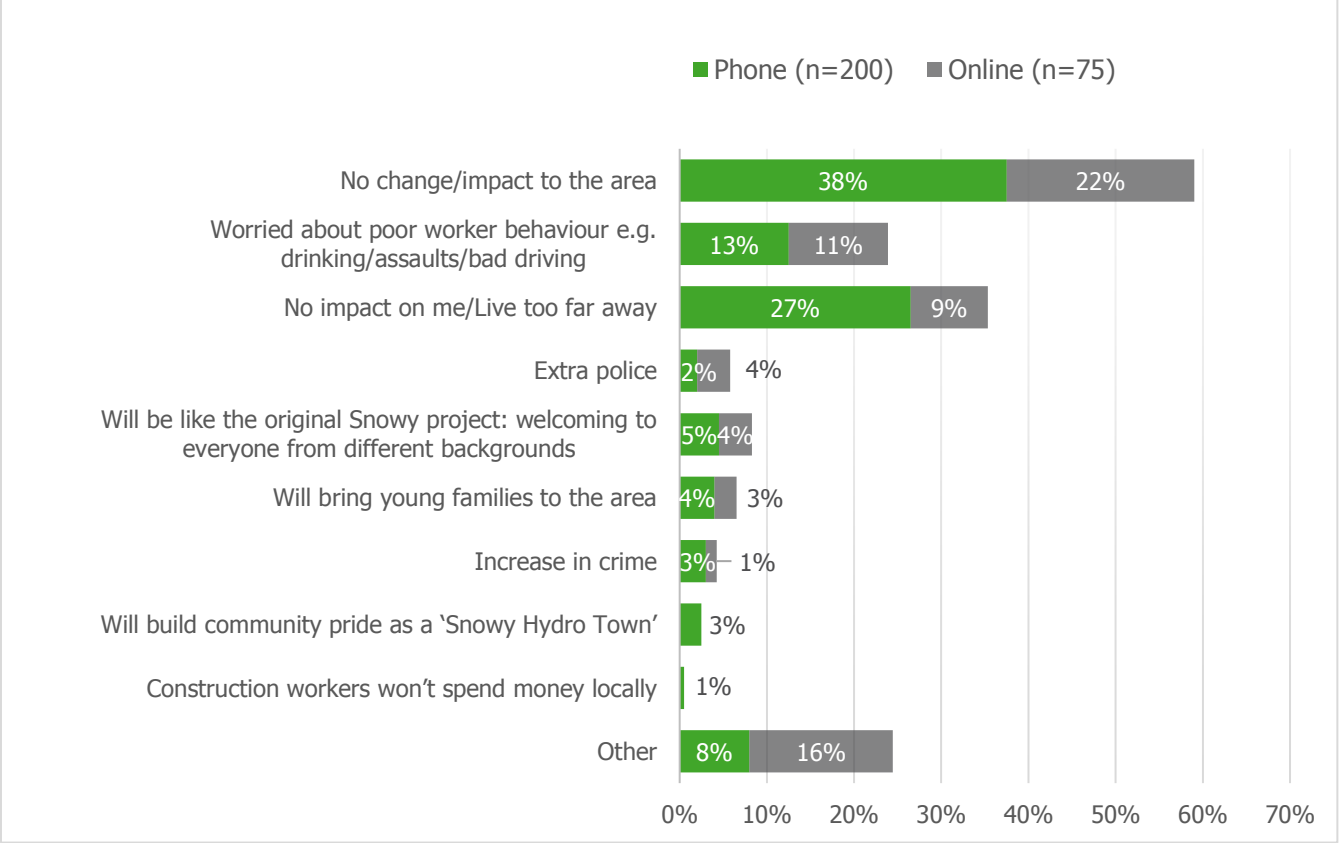
Figure 35 Perceived impact on social cohesion and neighbourhood safety



We asked people to elaborate on their concerns about this issue. The highest response (24%) related to people believing that workers may be poorly behaved.

Q15: Why do you say that?

Figure 36 Reasons for response for social cohesion and neighbourhood safety



Respondents who believed the project would have a negative impact (0-1 on scale) social cohesion and neighbourhood safety during main construction works were asked what they thought could be done to reduce the potential impact.

Very few mitigations were raised. It was thought that if more police were stationed to the area this would reduce any negative impact of the project in relation to public safety and cohesion.

Respondents who believed the project would lead to a positive impact (9-10 on scale) on social cohesion and neighbourhood safety were asked what they could be done to make the most of this potential positive social impact.

Factors likely to contribute positively to a sense of social cohesion and safety were:

» Increased police presence

» Station doctors and ambulance near the construction sites to avoid an injured person having to go Wagga Wagga or Canberra for treatment

» Continued transparent communication between the project and the community

» Hiring local people from the area would increase feelings of excitement and acceptance about the project.

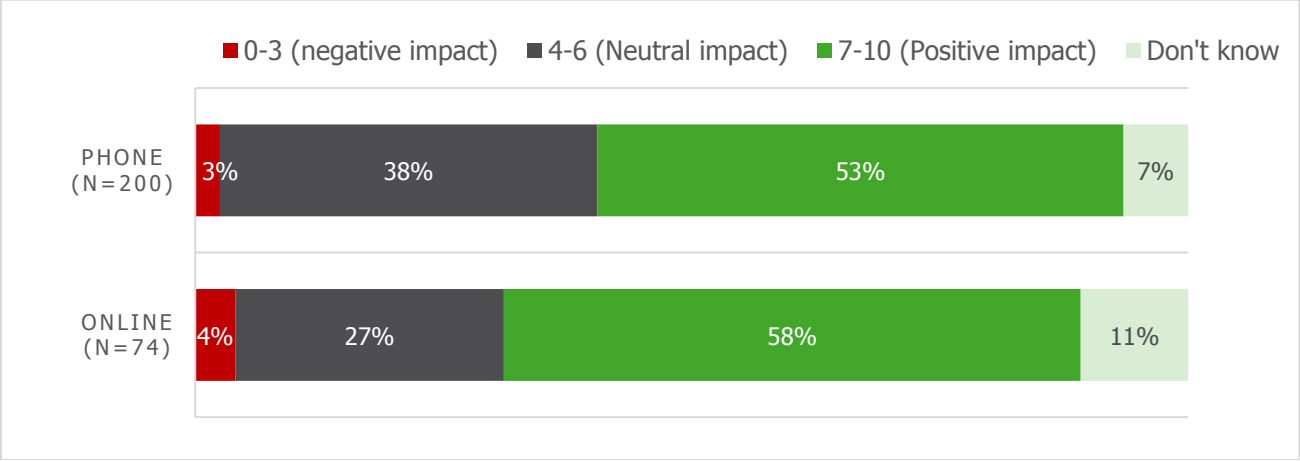
B-1-10 Long term social impacts

The Snowy 2.0 project is a large, long term, complex and multi-staged project. We wanted people to think about the broader public interest of the project and consider any legacy social impact issues that might arise.

It would take about six to seven years for the Snowy 2.0 project to finish being constructed. After it is built, do you think the long-term impact on you or your family would be positive, negative or neutral?

The long-term impact expected to be felt by the community as a result of the Snowy 2.0 Main Works project is largely positive (56%), followed by neutral (33%) and only 4% saying it would have a negative long-term impact on them or their family.

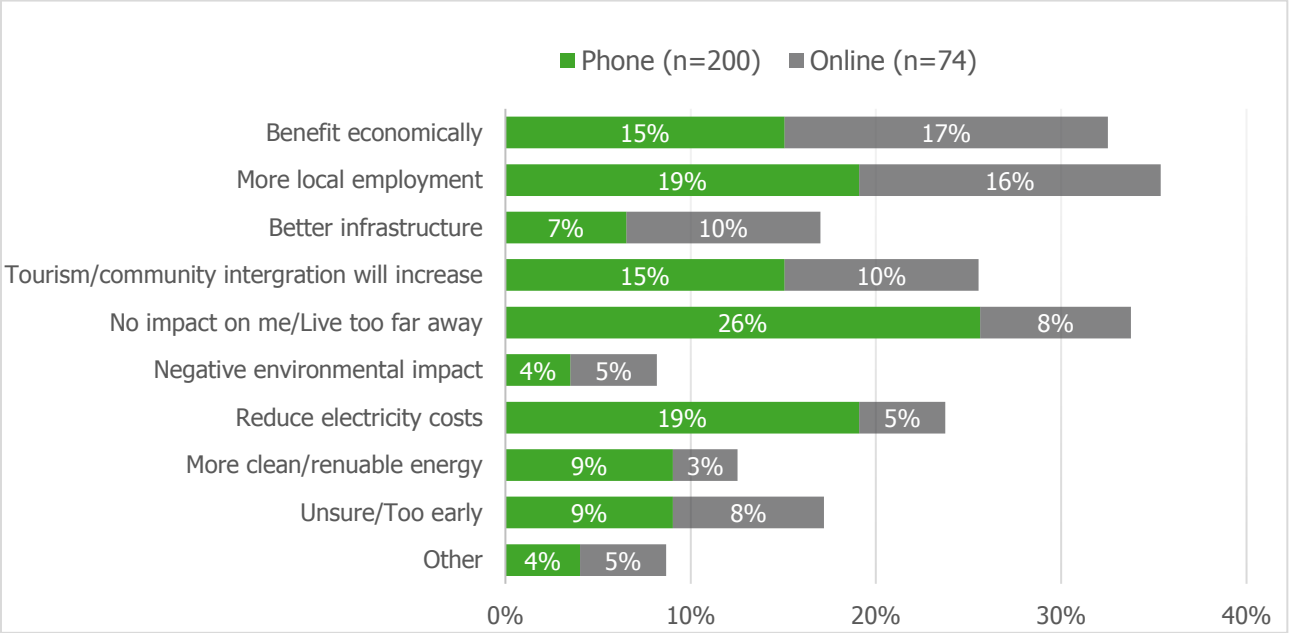
Figure 37 Perceived long-term social impacts



We asked people to elaborate on their longer-term social impact concerns. The highest responses related to an expectation that significant economic benefit expected to materialise in the region through an increase in jobs growth, wages spending in local business and the effect of Snowy 2.0 construction services and workers being sourced from local towns. Other long-term expectations were that there would be an increase in tourism to the area and improved community integration. Respondents also expect a long-term reduction in their electricity costs as a result of the operation of Snowy 2.0.

Q29: Why do you say that?

Figure 38 Reasons for response for long term social impacts



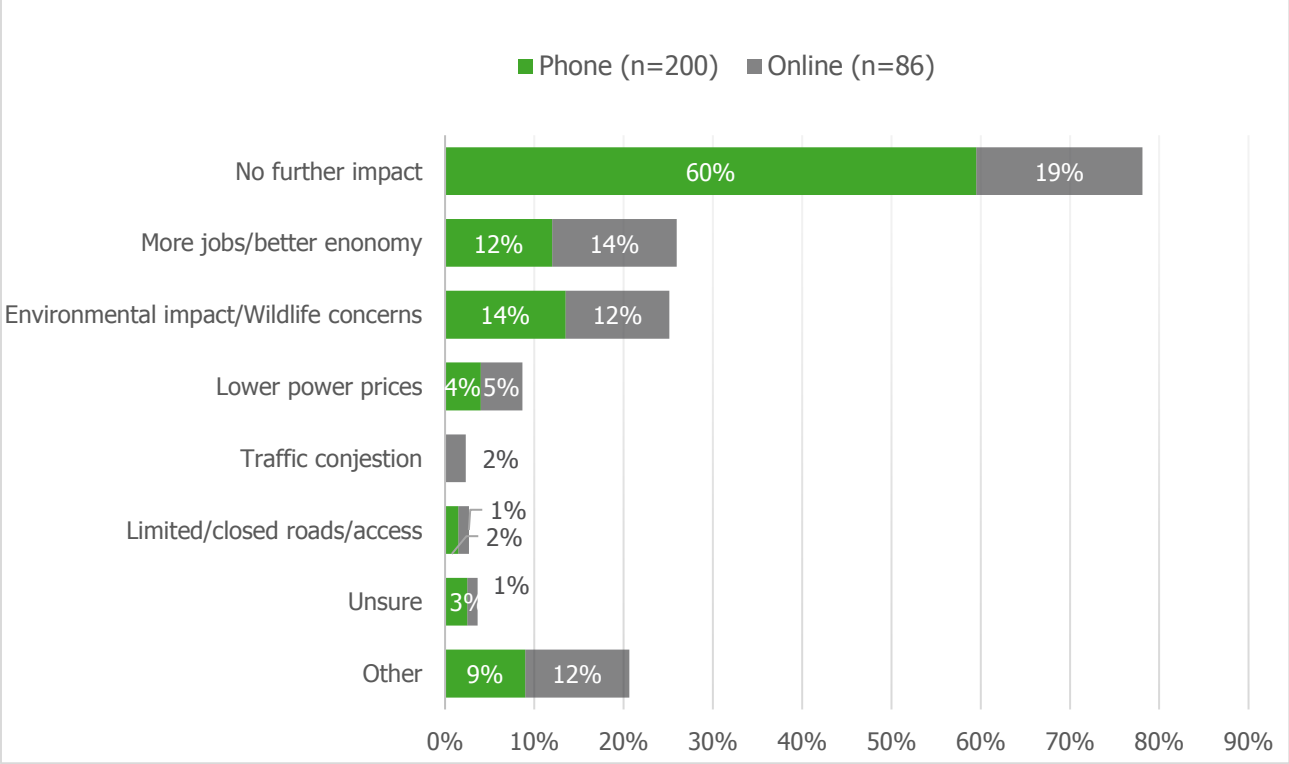
B-1-11 Other impacts

Respondents were given the opportunity to add any additional thoughts on the social impact areas.

The highest response (26%) was from people who reiterated hopes for more jobs and a better economy, which was covered and discussed at an earlier question and people concerned about environmental impacts (Figure 39).

Q30: Are there any other major impacts you think the program will have?

Figure 39 Other impact responses



B-1-12 **Snowy 2.0 Main Works – CATI survey**

Introduction/Preamble:

Hi, my name is (name) and I'm calling from [Research provider].

We are doing a research project on behalf of Snowy Hydro. We are conducting some research about an important local issue - Snowy 2.0. You have been randomly selected to participate in this. This survey takes less than 10 minutes, we're not trying to sell anything, we're just after your thoughts on the project even if you don't know much about it.

Your answers will remain confidential. This survey is an important part of the planning requirements Snowy 2.0 needs to go through for approval.

Would you be willing to assist Snowy Hydro with a quick research survey this afternoon/evening?

Q#	Question	Responses
S1	Into which of the following age bands do you fall?	18 to 39, 40-59, 60+
S2	Gender (don't ask)	Male, Female
S4	Which of the following towns do you live in or nearest to?	Adaminaby, Tumbarumba, Cooma, Talbingo, Tumut
	(Ask for and record first name)	

Q#	Question	Responses
1	(Name) Are you aware that Snowy Hydro is considering and planning for a pumped-hydro expansion of the Snowy Mountains Scheme?	Yes, No, Don't know
INFO	Snowy 2.0 is a proposed pumped-hydro expansion of the Snowy Mountains Scheme which, if approved, will significantly add to its existing hydro-electric generation and large-scale storage capabilities. The project will link two existing Scheme dams, Tantangara and Talbingo, through underground tunnels and will include an underground power station with pumping capabilities. Snowy 2.0 will significantly increase the Scheme's electricity generation capacity and provide 175 hours of large-scale storage.	
2	IF NO OR DON'T KNOW at Q1: Have you heard of Snowy Hydro's Snowy 2.0 project?	Yes, No, Don't know
3	ASK ALL: Based on what you know about the Snowy 2.0 project, to what extent do you support or oppose the Snowy 2.0 project?	Strongly support Somewhat support Neither support nor oppose Somewhat oppose Strongly oppose Don't know
	Research to date has identified a number of changes to the local area that might happen if the Snowy 2.0 project is approved.	0 very negative 5 no impact 10 very positive

Q#	Question	Responses
	We would like to find out from you how you think your way of life might be affected if these were to happen: Please consider the following potential impacts of the Snowy 2.0 project and tell me…	
4	On a scale of 0 to 10 where 0 means very negative, 5 is no impact and 10 means very positive, what would be the likely impact on you or your family during the main construction period. First… Traffic on roads	0 very negative 5 no impact 10 very positive 99 Don't know
5	Why do you say that?	Road closures that prevent public access to areas of national park Congestion/delays making it take longer to get places/ getting stuck behind trucks More road accidents Deteriorating road condition: pot holes etc Other (please specify)
6	Using the same scale, what would be the likely impact on you or your family during the main construction period on… Housing prices	0 very negative 5 no impact 10 very positive 99 Don't know
7	Why do you say that?	My property value will go up My rent will go up Not enough rental properties There're not enough houses- Council need to release more land Good opportunity to rent out my home to workers There won't be enough accommodation for tourists/visitors
8	Using the same scale, what would be the likely impact on you or your family during the main construction period on… Local jobs	0 very negative 5 no impact 10 very positive 99 Don't know
9	Why do you say that?	I will lose my staff who will go work on the project New job opportunities for locals Can put on more staff in my business Good chance to supply the project workers with my goods/services Will make It harder to find local permanent staff/ full timers Other (specify)

Q#	Question	Responses
10	On the same scale of 0 to 10 where 0 means very negative, 5 is no impact and 10 means very positive, what would be the likely impact on you or your family during the main construction period on… Access to recreational activities such as fishing, camping, horse riding, water sports or bushwalking	0 very negative 5 no impact 10 very positive 99 Don't know
11	Why do you say that?	I won't be able to get to the areas I normally go (Tantangara/ Lobs Hole/ Talbingo reservoir) It won't be so bad if I can still go to will give campground/fishing spot alternative) If the red fin gets in to Tantangara it will wreck the fishing If there is changes to reservoir levels it will be bad for fishing It will be too noisy (from the construction) Other (specify)
12	Using the same scale, what would be the likely impact on you or your family during the main construction period on… Demand for community infrastructure and services, such schools, hospitals or sporting facilities like pools	0 very negative 5 no impact 10 very positive 99 Don't know
13	Why do you say that?	Local school/hospital won't cope with extra demand Will be good for local schools/hospitals- more teachers/doctors The government will spend more money on upgrading our local services/facilities Other (specify)
14	Using the same scale, what would be the likely impact on you or your family during the main construction period on… Sense of cohesion or neighbourhood safety in your community	0 very negative 5 no impact 10 very positive 99 Don't know
15	Why do you say that?	Worried about poor worker behaviour e.g. drinking/assaults The construction workers won't spend money in the local shops (creates an us and them feeling) It will bring young families to the area It will be like the original Snowy project: welcoming to everyone from different backgrounds

Q#	Question	Responses
		It will build community pride as a 'Snowy Hydro Town' Other (specify)
16	If code 0-1 at q4 (negative towards traffic on roads): Negative: What do you think could be done to reduce the potential impact of traffic on roads?	Open-ended
17	If code 9-10 at q4 (positive towards traffic on roads): Positive: What do you think could be done to make the most of traffic on roads?	Open-ended
18	If code 0-1 at q6 (negative towards housing prices): Negative: What do you think could be done to reduce the potential impact of housing prices?	Open-ended
19	If code 9-10 at q6 (positive towards housing prices): Positive: What do you think could be done to make the most of housing prices?	Open-ended
20	If code 0-1 at q8 (negative towards local jobs): Negative: What do you think could be done to reduce the potential impact regarding local jobs?	Open-ended
21	If code 9-10 at q8 (positive towards local jobs): Positive: What do you think could be done to make the most of local jobs?	Open-ended
22	If code 0-1 at q10 (neg towards access to recreational activities): Negative: What do you think could be done to reduce the potential impact regarding access to recreational activities?	Open-ended
23	If code 9-10 at q10 (pos towards access to recreational activities): Positive: What do you think could be done to make the most of access to recreational activities	Open-ended
24	If code 0-1 at q12 (negative towards demand for community services and infrastructure): Negative: What do you think could be done to reduce the potential impact regarding demand for community services and infrastructure?	Open-ended
25	If code 9-10 at q12 (positive towards demand for community services and infrastructure): Positive: What do you think could be done to make the most of extra demand for community services and infrastructure?	Open-ended
26	If code 0-1 at q14 (negative towards sense of cohesion or neighbourhood safety): Negative: What do you think could be done to reduce the potential impact regarding neighbourhood cohesion or safety?	Open-ended
27	If code 9-10 at q14 (positive towards sense of cohesion or neighbourhood safety):	Open-ended

Q#	Question	Responses
	Positive: What do you think could be done to make the most of neighbourhood cohesion or safety?	
28	It would take about six to seven years for the Snowy 2.0 project to finish being constructed. After it is built, do you think the long-term impact on you or your family would be positive, negative or neutral?	0 very negative 5 no impact 10 very positive
29	Why do you say that?	Open-ended
30	Are there any other major impacts you think the program will have?	Open ended
31	Just before we finish (name), Snowy Hydro will be running further engagement on this topic. This would typically involve attending a focus group lasting up to 2 hours on a weeknight, and you would be paid for your time. Is this something that may interest you?	Yes No
32	(if Q20=yes) Gather surname, email address and best daytime phone number, postcode).	Surname Email address Daytime phone/mobile

Thanks so much (name), that's the end of the survey, which has been sponsored by Snowy Hydro. We greatly appreciate your feedback this afternoon/evening. Did you have any questions about the survey?

(Thank again and conclude.)

B-2 Focus group outcomes

Two focus groups were held on weekday evenings during late January 2019 at venues within central Cooma and Tumut. Participants were recruited by an independent market research company via an opt in question asked at the completion of the CATI telephone survey as described at in the previous section. The agenda questions and a summary of key findings is outlined below.

B-2-1 Baseline social context

Attendees were asked to describe their existing community and what it's like living in their town. They noted general social trends in the area, and described what things might look like for their future without the Project.

Table 24 Summary of existing social context – focus groups

Cooma	Tumut
» Overall consistent expressions of highly valued quality of life » Appreciation of rural lifestyle » Examples of positive community cohesion » Tolerance of transient visitor populations » Concern about ageing population » Concern about young people leaving town for career/education opportunities » Concern about general economic decline	» Overall consistent expressions of valued rural lifestyle » High levels of community involvement » Examples of close-knit community that help each other » Concern about ageing population » Concern about lack of opportunities for young people » Varied opinions on levels of local economic activity

Cooma	Tumut
	» High reliance on tourism industry » Concerns about law and order

B-2-2 Understandings of the project

Attendees were asked what they have heard about the Project, and gave reasons why they believe there is high levels of support for it.

Table 25 Summary of project understanding – focus groups

Cooma	Tumut
» Overall felt well informed about project » Described as energy storage project, long term asset » Tunnelling between dams » Large workforce, estimated at 1,500 to 3,000 workers » Lobs hole described as main worker accommodation camp » General support for renewable energy related to concern for environment » Anticipation of trickle-down economic benefit » Trust in SHL as proponent	» Overall felt vague about project details » Described as water storage, battery storage » Tunnelling between dams » Uncertainty about workforce numbers estimated 'not a lot' to 2,000 » Lobs hole described as main worker accommodation camp but others also expected at Cabramurra and Tumbarumba » Understandings that KNP are opposed to the project » Uncertainty at timeframe, estimated 6 years » Appreciation of the large-scale nature of the project and its link to renewable energy policy

Attendees were asked to give their opinion on why workers may or may not be attracted to live in the area, or stay during their rostered days off rather than returning home. This included investigation of reasons why they thought this, and examples of how their communities have dealt with population changes in the past.

Table 26 Summary of potential worker attraction to the area – focus groups

Cooma	Tumut
» Towns are attractive for families » Depends on: > length of contracts: longer is better > availability of local accommodation: newer homes preferred > how high their wages will be: the higher they are, the more likely they can afford good accommodation > how far away their 'home' is: price of fuel can be a barrier to long driving trips > on how many rostered days off in a row they have: the longer the break, the more likely they will return home > age of workers: the younger they are the more likely it is they are flexible/ mobile	» Towns are attractive for families » Plenty of local outdoor recreation activities » Depends on: > home of origin: the closer they live, the more likely they'll return home on days off > length of contract: the longer the better > specialisation: the more specific their skillset, the less likely they could stay in the area post-project so would be less likely to relocate > availability of accommodation: tourists viewed as main market who can afford the highest rates > age of workers: younger age groups will be more open to staying in lower quality accommodation » Towns cope well with large influx of fruit pickers however this is confined to low-cost accommodation

Cooma	Tumut
> if they have a family or not: finding local work for partners could be difficult » Towns cope well with fluctuations of tourist populations » Very few examples of previous major projects other than original Snowy Hydro Scheme	» Towns cope well with fluctuations of tourist populations, with a large proportion of campers

B-2-3 Understanding the issues

Of the three impact areas that were explored as part of the focus groups, attendees were asked to rank identified potential social impacts according to their significance.

Each social impact is ranked according to those who responded with either a positive or negative expectation toward the impact.

While each of the identified social impacts can be experienced both positively and negatively as demonstrated by Table 27, a clear hierarchy of concern emerged. Attendees were most concerned about access to infrastructure, and least concerned about neighbourhood safety and cohesion. Conversely, attendees were most hopeful about positive impacts on neighbourhood safety and social cohesion, and expected the least benefits for housing affordability and availability.

Table 27 Focus group significance ranking

Positive impact	Area of social impact	Negative impact
3	Housing (affordability, availability)	2
2	Access and demand on community infrastructure and services or recreation	1
1	Neighbourhood safety and social cohesion	3

These topic areas were then explored in more detail, for example asking people to assess different scenarios based on alternate workforce projections.

Overall, the issues ranked as most significant were:

» Hopes for potential for local economic stimulus and concern if onsite accommodation compromises opportunities for local business growth

» Concerns some local infrastructure types will not cope with increased demand (roads and health)

» Concerns about a shortage of appropriate quality housing suitable for longer term accommodation stays (rental and purchase).

Table 28 Focus group social impact discussion

Cooma	Tumut
» Concern about road traffic impacts » Concern about medical services ability to cope with increased demand » Concern about housing availability and quality » Concern about increased demand on emergency services	» Concern about road traffic impacts » Concern about medical services ability to cope with increased demand » Concern about housing availability and quality, particularly potential competition with tourism » Concern about policing ability to cope with any increased demand

Cooma	Tumut
» Reported capacity within most business, schools and general infrastructure » Fluctuations in grocery retail capacity e.g. during winter peaks stock can run out due to tourist demand » Workers may compete with tourists for short stay accommodation » Minor concerns about worker behaviour	» Reported capacity within most business, schools and general infrastructure » Concern about lack of local entertainment facilities » Workers may compete with fruit pickers for low cost accommodation

Attendees were asked to contribute their ideas of how the Project could mitigate potential social impacts.

Table 29 Focus group examples of suggested mitigations

Cooma	Tumut
» Road upgrades » Facilities for older people e.g. nursing homes » Enclosure of local swimming pool/ expansion into a leisure centre » Advance knowledge of skillsets required for locals to acquire relevant qualifications to be competitive for employment on the Project	» Employment opportunities targeted at locals, especially young people » Upgraded recreation facilities e.g. swimming pool at Tumut, or new pool at Talbingo » Provision of additional medical staff in Tumut hospital

Attendees were asked to explore a Project scenario where benefits were not directly experienced. This involved an assessment of their community's resilience to set backs.

Table 30 Concern if the project were to not proceed – focus groups

Cooma	Tumut
» Overall minor concern expressed » Confidence in SHL » Anticipation that some trickle-down benefits would still be inevitable	» Overall minor concern expressed » Confidence in alternative industries supporting baseline local economy » Anticipation of positive image of area and potential future Snowy Hydro tourism

C Context review

C-1 Policy and planning documents

The justification for Snowy 2.0 in the context of the NEM can be found in Chapter 3 of the EIS.

C-1-1 NSW planning framework

The EP&A Act and NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) form the statutory framework for planning approval and environmental assessment in NSW. This legislation is supported by environmental planning instruments (EPIs) including State environmental planning policies (SEPPs) and local environmental plans (LEPs).

State Significant Infrastructure and Critical State Significant Infrastructure

State Significant Infrastructure (SSI) projects are major transport and services developments which are over a certain size, located in environmentally sensitive areas or exceed a specific capital investment value (DPIE 2019). An SSI project can be declared to be critical by the Minister for Planning if the project is essential for economic, social or environmental reasons at a State level.

The Environmental Planning and Assessment Act (EP&A Act) outlines the declaration rules surrounding SSI and CSSI project in Section 2.12 and Section 2.13 respectively.

Snowy 2.0 was declared as SSI and CSSI on 7 March 2018 and came into effect 9 March 2018. This is reflected in clause 9 of Schedule 5 of the State Environment Planning Policy (State and regional Development) 2011 (SRD SEPP).

Clause 9 of Schedule 5 of the SRD SEPP identifies Snowy 2.0 as follows:

Snowy 2.0 and Transmission Project

The Snowy 2.0 and Transmission Project is a proposed program of works for the expansion of the generating capacity of the Snowy Mountains Hydroelectric Scheme and for associated upgrades and additions to the electricity transmission network. The object of this clause is to declare development for the purposes of the Snowy 2.0 and Transmission Project that is set out in this clause to be State significant infrastructure and critical State significant infrastructure.

This clause applies to development on land in any of the following local government areas:

» Cootamundra-Gundagai Regional

» Goulburn Mulwaree

» Snowy Monaro Regional

» Snowy Valleys

» Upper Lachlan Shire

» Yass Valley.

Snowy 2.0

Development for the purpose of pumped hydro and generation works to be known as Snowy 2.0 on land between Tantangara Reservoir and Talbingo Reservoir that involves:

» the carrying out of exploratory geotechnical works or engineering investigations, and

» the construction and operation of an underground hydroelectric power and pump station capable of supplying approximately 2,000 megawatts of hydroelectric power, and

» the construction of water and access tunnels, surge tank and intake and outlet structures at and between the two reservoirs.

Transmission works

Development that involves:

» The construction and operation of new electricity transmission lines and an electricity substation to the west of the Talbingo Reservoir to connect Snowy 2.0 to the existing electricity transmission network at Nurenmeremong, east Tumbarumba

The development referred to in this clause do not include:

» the carrying out of surveys, sampling, environmental investigations, geotechnical borehole drilling, test drilling, test excavations, or other tests or investigations, for the purposes of feasibility assessment and the preliminary design of the Snowy 2.0 and Transmission Project, or

» the carrying out of works to upgrade or modify electricity transmission lines, works within existing switchyards, and the installation of communications infrastructure.

Ancillary development

» Development that is ancillary to any other development in this clause, including the carrying out of works to upgrade or construct access roads, utilities infrastructure, construction accommodation, construction compounds and construction power supply.

Snowy 2.0 fills the requirements of Schedule 5, clause 9, subclass (3) of the SRD SEPP therefore not requiring development consent under Part 4 of the Act and is declared to be SSI and CSSI. As such, the project requires assessment and approval under Division 5.2 of the EP&A Act.

C-1-2 Land use context

National Parks and Wildlife Act 1974

The Snowy Scheme operates within the KNP in accordance with the Snowy Hydro Corporatisation Act 1997 (SHC Act). Part 6, section 37(2) of the SHC Act entitles Snowy Hydro to the grant of a lease, licence, easement or right of way over KNP, for the purposes of the existing Snowy Scheme development. The Snowy Park Lease was granted to Snowy Hydro by the NSW Minister for Environment in 2002 and has a term of 75 years. The lease covers land where infrastructure associated with the existing Snowy Scheme has been constructed. Section 41(5) of the SHC Act provides that development that is for a purpose for which a lease has been granted under Part 6 of the Act, is taken to be authorised under the NPW Act.

The SHC Act was amended in 2018 and now also entitles Snowy Hydro to the grant of a lease, licence, easement or right of way over KNP, for the purposes of Snowy 2.0. Snowy Hydro will be granted a series of licenses and leases by the Minister for the Environment to enable the construction and operation of Snowy 2.0.

Kosciuszko National Park Plan of Management, 2006

The plan of management is a legal document outlining how the Park should be managed in the future based on relevant policies and acts. It also takes into consideration local, regional, national and international obligations which impacts management and uses.

The Kosciuszko National Park has five management zones:

» Wildness zone

» Back Country Zone

» Minor Road Corridors

» Major Road Corridors

» Visitor Services Zone.

The park zoning aims to protect values of the park (including environmental, cultural and recreational).

The majority of the Snowy Scheme's operation occur in the Back Country Zone, which is defined by a lack of public road access. Snowy Hydro and associated infrastructure are the only development in this zone. The management focus of the Back Country Zone is to limit development to the current status.

As part of the Snowy Management Plan, Snowy Hydro must develop an environmental management plan. The Kosciuszko National Park Plan of Management identifies the following key opportunities and issues relating to the management of environmental issues involving Snowy Hydro:

» Opportunity to integrate some elements of environmental management between the Scheme and the Park, such as: feral animals, weeds, fire risk, visual impact of development, river water flows

» Achieve best ecological outcomes for the park through improved river flow

» Improve visual amenity through restoration and rehabilitation of disturbed sites, undergrounding, rerouting or screening of installations.

The Kosciuszko National Park Plan of Management also states that any changes to the Snowy Management Plan must comply with the Park Plan of Management, evident in Figure 40.

Figure 40 Governance flow regarding permitted land use

C-1-3 Other relevant policies and land use planning documents

Statewide Destination Management Plan, Destination NSW 2019

The Statewide Destination Management Plan identifies 10 strategic focuses to support NSW 2030 Visitor Economy Goal of $55 billon overnight visitor expenditure and $25 billion overnight regional expenditure.

Within the plan, the Snowy Mountains is identified as a 'hero' destination which provides a world class, iconic and unique visitor experience. The Snowy Mountains is considered to have 13 offerings, five of which are based around natural recreation:

» Nature & Adventure

» Skiing & Snowy Activities

» Walking & Hiking

» Aquatic Activities

» Specialist Interest Activities

The Snowy Mountains Hydro Scheme is acknowledged as an important aspect of the regions history and heritage and will continue to play a role in local tourism.

Draft Destination Management Plan, Snowy Monaro Regional Council, 2019

The Draft Destination Management Plan outline key trends, future opportunities and priorities for the tourism industry in the Snow Monaro area. A key point of focus is ensuring local and state government work with Snowy Hydro to ensure environmental protection and access for current and future tourism opportunities. Central to this is effective planning. Specific mentions to working with Snowy Hydro within the plan include:

» Snowy Monaro Regional Council work with NSW Fisheries and Snowy Hydro to ensure a sustainable fishing industry in Lakes Eucumbene and Jindabyne, identified as a medium priority

» Snowy Hydro and Planning NSW to collaborate on the Jindabyne revitalisation project.

The Snowy Hydro Scheme is also considered to be an important part of the local history. The Snowy Hydro Discovery Centre is currently considered a 'hero' experience in Cooma. The plan outlines opportunities to further link the history of the Snowy Hydro Scheme with walking and cycling tours.

Snowy Monaro Regional Planning and Land Use Discussion Paper, Snowy Monaro Regional Council, 2019

The discussion paper aims to revaluate planning issues, opportunities and challenges, and future land use needs since the amalgamation of Bombala, Cooma-Monaro and Snowy River Councils.

Snowy 2.0 is identified as a major project in the region which will create unique planning pressures. These pressures include demand for large amounts of temporary worker housing, demand for industrial land in relation to construction, and infrastructure to move large machinery and materials. The discussion paper anticipates that Adaminaby will experience the greatest influx of workers due to its proximity to the site and over the coming decades experience significant population growth. The discussion paper does acknowledge that the number of expected workers is currently unknown.

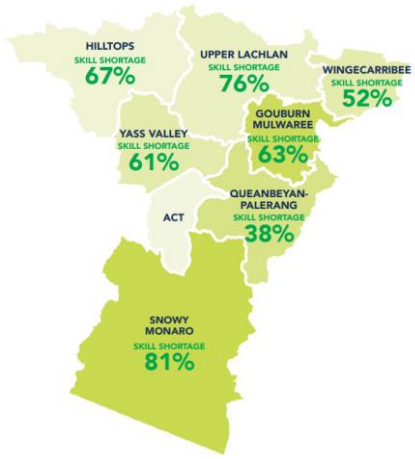
Skills Audit Report, Regional Development Australia: Southern Inland, 2018

The Skills Audit Report summarises research undertaken by Regional Development Australia. The aim of the report is to identify perceived skill shortages within industry and business in the Southern Inland area of NSW. The findings of the audit are used to support targeted education and skills training programs to assist with regional development.

The study concluded there was an overall skills shortage in the Southern Inland region. Skills shortages were associated with the remoteness of the area, a lack of technical skills and a lack of experience amongst candidates.

The Snowy Monaro area reportedly had the greatest skills shortage of the seven areas investigated with a skill shortage of 81%, see Figure 41. It was reported that location, lack of technical knowledge amongst candidates and a shortage of accommodation in the local area were identified as the top reasons for skill shortages in the Snowy Monaro area.

Figure 41 Skills demands in the Southern Inland Region



Visitor Economy Industry Action Plan, Destination NSW, 2012

The Visitor Economy Industry Action Plan outlines six key strategic areas to support and promote growth in the tourism industry across NSW. Within the plan, Sydney's image as a global city is central to 'drawing' tourist to the state. Capitalising on opportunities to promote tourism activities in rural areas is identified as a key growth area. Supporting skills development is listed as a priority to help enable tourism development and support growth within the industry.

C-2 Media content

A select review of relevant media publications between 01 November 2018 to 01 May 2019 was undertaken to understand how Snowy 2.0 has been discussed in the media. This review is not exhaustive. The review focuses on local and national/online sources to try understand what residents may be reading within the media. The review considered national, regional and local newspapers using a combination of Factiva and Google.

On a local level there was limited news sources which published online, but from those that did there tended to be a focus on:

» local impact (particularly tourism in Talbingo and the closure of the spill way and boat ramp at)

» opportunity for local employment

» restriction of recreational activities

» community engagement (positive reporting).

Overall, local media articles tended to focus on hyper local issues such as the closure of the Talbingo dam spillway and boat ramp and the flow on effects of this on the local tourism industry. There was also an emphasis on local employment.

Reporting on a national or regional scale tended to focus on:

» financial rational of the project including 'value for money'

» the project costing more than early estimates suggested

» the cost of building supporting infrastructure to support Snowy 2.0

» energy prices for consumers

» the energy sector more generally.

A high-level analysis of available comments found people commenting on the articles tended to focus on Government expenditure and the finical viability of the project. There were mixed views on the need to transition from coal with some in support while others were not.

Table 31 Summary of media articles relating to Snowy 2.0

Date	Article
16 April 2019	**Snowy 2.0 prompts calls for high country facilities, Tumut and Adelong Times** Article covering the backlash from fishermen and 'water enthusiasts' regarding potential restricted access in the Kosciuszko National Park during the 8-year construction period of Snowy 2.0. It also raises the closure of Tantangara Road as a potential negative impact on tourist activities.
11 April 2019	**Snowy Hydro costs, timeline blow out, The Financial Review** Claims the Snowy Hydro budget has increased by $2bn over the last 2 years. Overall general discussion about the risk associated with climate action and renewable energy sector.

Date	Article
9 April 2019	**Snowy Hydro awards $5.1b contract, Tumut and Adelong Times** Outlines the specifics of the contract announcement and previous work undertaken, neutral article in tone.
9 April 2019	**Snowy 2.0 Cost blows out to $5.1b, ABC News** Outlines that the project will cost 35% more than anticipated in December 2017 and far higher than estimates from earlier 2017. It also outlines the possibility of a 10% contingency clause
5 April 2019	**MacCap hired for Snowy Hydro's $5b funding package, The Financial Review** Article discussing who will be financial adviser to Snowy Hydro.
16 March 2019	**Bright outlook with Snowy 2.0, Tumut and Adelong Times** Reports on a consultation session at Club Tumut in which manager Dean Lynch updated the community on the project. Quotes Dean Lynch saying there will be significant local employment as it is cheaper to employ and procure locally. It also reports on the work major contractors have been doing with TAFE to ensure there the region has the skills required.
13 March 2019	**Small businesses 'doing the heavy lifting' on energy, The Sydney Morning Herald**
8 March 2019	**How Morrison's Snowy scheme will accelerate coal's demise, ABC News** Set in a pre-election context, the article positions Snowy Hydro as a project which contraindicates the Liberal parity's commitment to coal fired electricity generation. The article argues that coal and hydro cannot co-exist.
26 February 2019	**Spark Infrastructure looks to ride Snowy 2.0 boom, The Financial Review** Reporting on the approval of the project and the role network company Spark Infrastructure's role as a contractor. Comments that Spark Infrastructure was predicted to have a weak year and that Snowy. Discusses the potential growth of renewable energy in the private sector.
25 February 2019	**Snowy 2.0 project given funds and approval for early work phase by Federal Government, ABC News online** Overall commentary about Federal Government approved funding for Exploratory Works phase. Very factual outlining energy storage and jobs generated.
15 February 2019	**Snowy welcomes approval, Tumut and Adelong Times** Positions Snowy 2.0 as a project will deliver energy security to the region, provide jobs and economic opportunities across the Snowy Mountains with 50 local business already involved in the project. A large part of the article focuses on the public access to the Talbingo boat ramp.
13 February 2019	**Snowy 2.0 planning tick, Tumut and Adelong Times** Reporting on approval of Exploratory Works.
11 January 2019	**Talbingo tourism thriving ahead of Snowy 2.0, Tumut and Adelong Times** Claims Snowy 2.0 will have negative impacts on tourism in Talbingo, stating quoting a local resident "Tourism is what keeps Talbingo alive". Identifies conflict on recreation uses such as the spillway and boat ramp. The article quotes CEO of Snowy Hydro, Paul Broad stating the boat ramp will remain open and that many spots will still be open to recreation. Paul Broad also states the project will have economic benefits for the local community.
27 December 2018	**Tyranny of distance: The renewable power disconnect, the Sydney Morning Herald** Overall commentary on the lack of infrastructure connecting renewable energy project to the grid. Overall argues Snowy 2.0 should be paying for their own connection costs. A significant focus on where and who funding was coming from for the project.

Date	Article
	Public comment included: Discussion around the viability of supporting infrastructure for non-coal energy sources. Many comments focus on whether to phase out coal, keep coal or other alternative energy productions systems.
11 December 2018	**Snowy Hydro closes in on Snowy 2.0 expansion sigh-off, The Financial Review** Commentary on approval, noting that it will be unlikely to be signed off before Christmas. The article also goes into the benefits of the project noting benefit to energy markets
8 December 2018	**Swept up in heat of the moment, The Australian** Positions Snowy 2.0 as a climate change mitigation project. The article argues that Australia is already undertaking significant climate change action and that calls for 'action' are unfounded and unclear. Raises economic and employment issues and negative impacts from current government action and claims they are in vein as global emissions continue to climb.
23 November 2018	**Big Response to Talbingo Snowy 2.0 drop-in, Tumut and Adelong times** Article on the engagement session run by Snowy Hydro. Noted a significant turn out of residents both from Talbingo and other areas such as Batlow and Tumut. Reports that most residents were eager to discuss direct employment opportunities, including how to apply, and general questions regarding construction. One resident is quoted complimenting Snowy Hydro's engagement, commenting on both the number of people and stating that Snowy Hydro is "…starting to take us seriously for a change" showing meaningful and genuine engagement.
27 November 2018	**1 2 3 4, The Australia** Positions Snowy 2.0 as an expensive Government project which will not reduce energy prices or emissions. Argues gas, coal and hydro are the only reliable energy sources as wind and solar to weather dependant.
22 November 2018	**Snowy 2.0 slammed as 'a waste of money' by energy experts, The Australian** Same as **1 2 3 4, The Australian** Most comments discuss Australia's CO2 emissions (as a small percent of global emissions) and frame clean energy as a waste of money.
21 November 2018	**Snowy Hydro 2.0 could actually cost as much as $4.5b – more than double the initial price tag, ABC News** Focus on uncertainty of total cost commenting that original budget of $2 billion has no expanded to $3.8 to $4.5 billion. CEO Paul Broad defends the cost of the project by saying the cost will not be worn by tax payers as funding will come "… out of the balance sheets of Snowy Hydro." Public comment: A large focus of government spending including feasibility and lack of economic feasibility study. Also, a strong focus on how and what energy source will be used to power the proposed storage system.
16 November 2018	**Tumut Snowy 2.0 drop-in sessions informative, Tumut and Adelong Times** Coverage of the Tumut drop-in session. quotes from Snowy employee saying the session went well and that people were interested and welcoming. Also quotes a resident strongly supporting it: "They answered all my questions so I hope it goes ahead. It is going to be a lot better for the community than people realise. It's bigger than I ever thought it would be. It will be fantastic and everyone will get a taste of the cherry at some point."
13 November 2018	**Snowy Hydro says multibillion-dollar energy project doesn't need cost-benefit test, Sydney Morning Herald Online** The article reports on Snowy Hydro's claim that the Snowy 2.0 should not undergo cost-benefit testing due to its significance stating it could cause delays to the project. The report alludes to

Date	Article
	potential increases in cost for consumers caused by expensive infrastructure and the overlooking of potentially cheaper options. Public comment: General discontent for lack of feasibility study. Comparison to the NBN project and other Government expenditure 'blow outs'. Overall sentiment is it will be a waste of taxpayer dollars.
2 November 2018	**Snowy Hydro dumps coal for wind and solar to pump its water, The Leader** Outlines that the pumped hydro storage generators will be powered by wind and solar power rather than coal. The development of 4 wind farms and 4 wind farms in NSW and Victoria will support the facility.
1 November 2018	**Snowy Hydro beefs up on solar, wind power to undercut market, Financial Review** Reporting on Snowy Hydro's choice to use wind and solar to support the pumped hydro storage system. The article goes into great detail reflect the costings of renewables compared to coal and focuses of Snowy Hydro CEO Paul Broad defending the organisations choice.
1 November 2018	**$1bn green scheme sparks Snowy, The Australian** Discusses energy prices and whether Snowy Hydro 2.0 will deliver lower energy prices to the region. Overall supports the idea that Snowy 2.0 can reduce energy prices.
10 August 2018	**Talbingo worried about Snowy 2.0 impact on tourism, Tumut and Adelong Times** Reporting on a community meeting which was attended by residents and Snowy Hydro representatives. The issue of public access to Talbingo Dam, via the spillway, was raised by residents with fears it will be shut off during construction of the Snowy Hydro 2.0 project. The meeting indicated "residents overwhelmingly supported the Snowy 2.0 project", losing access to the dam was a key concern considering Snowy Hydro is planning to shut off the spillway to public access. Summer tourism relies heavily on access to the dam.

C-3 Literature review

This literature review has been prepared as part of developing the social baseline as well as to gather an understanding of social issues encountered in comparable projects. It is not intended to prescribe or describe what should be done to address the social impacts of Snowy 2.0 Main Works. Articles were selected based on a cursory list of broad themes that appear in large-scale infrastructure projects. Issues uncovered during this literature review may never eventuate in Snowy 2.0 Main Works however, it is prudent to conduct research to understand the potential risks to those likely to be impacted by the Project. It is not suggested that the following themes will necessarily materialise in Snowy 2.0 Main Works. While some of the following project examples are located outside NSW and discuss extractive projects it is possible that similar issues are applicable to this Project.

Review of key themes

This section provides a summary of key themes considered relevant to the identification and analysis of social impacts associated with Snowy 2.0 Main Works. They include:

» the mental and physical health impacts of Fly-In/Fly-Out (FIFO) work

» the safety-related effects of an increased worker and resident population on local townships and on workers themselves

» the socio-economic effects of a temporary workforce on local communities

» the potential impacts on demand for housing and community infrastructure

» the strong identification with place felt by its historical inhabitants and land use conflicts

Effort was made to source research material that related to comparable projects to Snowy 2.0 Main Works. So as to best inform the identification of potential social impacts.

Mental and physical health impacts of a FIFO workforce

FIFO and DIDO workers

FIFO and Drive-In/Drive-Out (DIDO) workers face unique health impacts directly linked to their employment. A 2018 report produced for the Western Australian Mental Health Commission outlined the risks associated with FIFO/DIDO work arrangements, focusing on psychological and wellbeing impacts (Centre for Transformative Work Design 2018). The broader literature agrees FIFO workers have a high risk of experiencing:

» excessive drinking, recreational drug use and obesity

» relationship strain from geographical isolation leading to a sense of disconnect

» anxiety and stress caused by 'missing out' on family events and memories as well as limited ability to support during family crises

» difficulty adjusting between home and work life

» work related stress due to high intensity work environment and shift length

» job dissatisfaction and fears relating to job insecurity cause by 'lifestyle lock-in'.

Reported stigmatisation of mental health issues within the resource development sector and the masculine/'macho' culture associated with the industry can be barriers that prevent workers seeking help (Gardner, Alfrey et al. 2017). Research also suggests that alcohol consumption trends are higher among FIFO/DIDO/resource development workers in Western Australia than other workers. The literature identifies some potential key factors which include; high disposable incomes, social isolation, lack of recreational activities, and a mixture of workplace and rural masculine cultures (Joyce, Tomlin et al. 2012). It is acknowledged that excessive drinking may also be a stress coping mechanism for some workers.

Recommendations

The research undertaken by the Centre for Transformative Work Design (2018) includes seventeen in-depth recommendations for Western Australia FIFO workers. They have been categorised into three topics; mitigate illness, prevent harm and promote thriving. The recommendations are applicable to Snowy 2.0 as they focus on FIFO workers in accommodation camps and FIFO work arrangements.

Table 32 Summary of FIFO health and wellbeing recommendations

Aim	Recommendation
Mitigate Illness	Develop a culture that prioritises mental health
	Assess psychosocial risks and monitor the mental health of FIFO workers and the factors that affect their mental health
	Provide mental health training for direct line managers
	Address the stigma associated with mental health
	Educate and promote a broad range of support services
	Ensure strategies, policies and procedures are in place to manage mental health emergencies and injury
Prevent harm	Increase mental health literacy through information training for all workers
	Prepare and educate FIFO workers and their families for FIFO work
	Provide reliable communication options and foster connections with home
	Implement initiatives that support FIFO partners and families
	Implement roster and shift structures that optimise mental health and wellbeing

Aim	Recommendation
	Identify and monitor the impact of job roles, work design, workloads and employment contracts on mental health
	Build community and social connections
	Review FIFO camp rules and regulations, and assess the impact on mental health
	Provide a permanent room at accommodation sites
	Recognise the mental health risks of financial stress and job insecurity
Promote thriving	Identify and implement strategies and interventions to enable FIFO workers to thrive

Safety-related impacts

Crime

Rapid changes in gender balances in host communities can have perceived and actual safety impacts. Research focusing on crime impacts of FIFO populations on rural communities has shown:

» it is not uncommon for crime rates to increase associated with increases in male non-resident populations

» excessive drinking, drug abuse and masculine culture often lead to male on male violence in worker camps and host communities (Ennis and Finlayson 2015).

In some host communities in rural Queensland, crime rates are nearly twice that of Brisbane – showing a clear disparity between rural host communities and urban centres. It is acknowledged that these figures may be higher due to under reporting in worker camps. Violence in host communities can caused by a further masculinisation of the resident population, reduced acquaintanceship within the community and a lack on informal surveillance (Petrova and Marinova 2013). This is often further impacted by excessive drinking and drug abuse by FIFO/DIDO workers (House Standing Committee on Regional Australia 2013).

A significant increase in the male population can cause concerns for individual safety within the community with research reporting on the unease female residents of host communities experience. Interviews with residents from Queensland host communities said verbal harassment was an increasing issue and were concerned for individual safety as well as the safety of younger women in the community (Sincovich, Gregory et al. 2018).

Road safety

Increased traffic on rural roads has an inherent safety element. The amount of traffic and vehicle speed are considered to be two major factors determining the likelihood of an accident in Australia (May, Tranter et al. 2008). It is also noted that shift workers and long-distance commuters are more at risk due to fatigue whilst driving (Queensland Government 2008). This evidently poses risks to shift workers but also the broader community.

Economic impacts

Fly-over effect

The benefits of resource booms are rarely distributed equally with host communities. Australian and other developed nations commonly experience the 'fly-over effect'. The 'fly-over effect' describes the movement of wealth generated from resource development where profits and wages are exported to urban cities and centres and not captured in local communities. The fly-over effect is associated with FIFO/DIDO work arrangements replacing local employment. This approach challenges the perception that resource developments provide significant economic befit to rural communities (Hajkowicz, Heyenga et al. 2011, Sincovich, Gregory et al. 2018).

Impact of wages spending on local towns

Much of the literature discusses the missed opportunities of economic growth in local communities, focusing on the difference between potential benefit and on the ground reality. The multiplier effect can have positive economic impacts on local service sectors such as transport, rental and accommodation services. This is evident in Tonts, Plummer & Lawrie (2012) research which studied the economic impacts of the resource sector across 33 towns in Western Australia. However, factors such as migrator workforces place uncertainty around local wealth capture (Tonts, Plummer et al. 2012).

Current SIA best practice acknowledges the need to capitalise on opportunities for local economic development (Esteves, Vanclay et al. 2011). To ensure economic benefits from development are captured by local communities there needs to be a stronger emphasis on local procurement, inclusion of local service providers and industry development. The extent to which local communities benefit from local procurement initiatives is highly dependent on the capacity of local communities to 'supply goods and services to the project' (Tonts, Plummer et al. 2012). In relation to Snowy 2.0, the provision of goods and services may be in the form of worker buses stopping in town to collect food or souvenirs for the trip home. However, this would be subject to rosters, routes and enterprise bargaining agreements. This is highly linked to the available skill sets in local communities.

Central to Tonts, Plummer & Lawrie's (2012) argument is that companies need to make a conscious effort to include local industries and employment in projects otherwise the economic benefits are far less likely to be experienced by the community. This argument also relies on the communities' ability to provide a market that is attractive and suitable for the project to plug into.

Housing

It is not uncommon for host communities to experience increases in housing costs associated with local resource development projects. The combination of low supply, increased demand for housing and high income of migratory workers place strain on local housing markets causing median rent and sale prices to increase. These impacts can be observed in mining communities in the Bowen Basin (Queensland) where median rent was up to 95% more than Brisbane between 2004 and 2006 (Rolfe and O'Dae 2007).

Local rental markets and temporary accommodation are impacted by long distance commuting workers needing offsite accommodation. Motels and caravan parks often have no vacancy while the amount of available properties for rent is are few. While this has positive impacts for businesses and property owners, there are significant negative impacts on housing affordability and availability. Those most impacted are:

» low income earners and families

» those on government support

» people working in non-industry related employment (Sincovich, Gregory et al. 2018).

Unexpected increases in demand and the ability of non-permanent residents to pay more, leads to local families being priced out of the market. In the most serve situations this can cause outward migration of residents (Robertson 2010).

Community infrastructure

Rapid population growth associated with non-permanent residents creates challenges for local governments. Planning for migratory workforces is difficult as it is often unexpected, meaning there is a limited understanding of current and future needs. Dramatic and rapid increases in users means facilities and services operate beyond their capacity. It is widely acknowledged within the literature that the following community services are impact by increases in non-resident workforces: schools, childcare, medical services, particularly specialist and physiotherapists, roads, recreational facilities (Rolfe and Kinnear 2013).

These factors generally lead to local services and facilities being under-resourced, unable to meet current demand and overcrowded which impacts both resident and transient populations (Carrington and Pereira 2011, Sincovich, Gregory et al. 2018)

Communities and community leaders have previously commented that transient workforces tend to disrupt their sense of community as they do not socially invest in host communities. Excessive use and general mis use of community facilities has been identified by some as a negative social impact on host communities (McKenzie 2016).

Roads

Increased traffic congestion is associated with significant regional projects. In the early 2000s, Orange experienced a rise in traffic congestion caused by the growth of mining activities and development of supporting industries. Changes in demand for road infrastructure resulted in Council bringing forward expenditure on roads and introducing more sophisticated traffic control systems. While the extraction company did contribute to road construction beyond their rate, road improvements where still a considerable cost for Council and required additional Federal funding (Basu, Hicks et al. 2015).

Social capital and community cohesion

Development of "us and them" mentalities has been associated with increases in transient workforces in host communities (Ennis and Finlayson 2015). Feelings of resentment among residents is not uncommon with research suggesting that social relations, community dynamics and resident relationships become strained when there are increases in transient populations (Petrova and Marinova 2013). Resentment often occurs when communities feel they are 'being used', generally caused by a lack of interest from non-residents to invest time in building social relations and partake in community activities and organisations (Sincovich, Gregory et al. 2018).

Petrova & Marinova's (2013) research focused on Boddington, a small mining town in Western Australia, found abrupt changes in the social landscape impacts a community's social capital networks. Their work suggests transient worker populations and shift rosters negatively impacted social landscapes. Levels of trust and changes in social organisation, networks and volunteering over time were used to assess the 'amount' of social capital within the community. Over a third of surveyed residents reported that their sense of trust had changed negatively since the opening of the mine. Residents also commented that some shift workers did get involved in community events and organisations but noted that regular attendance was hard due to work rosters. Similarly, the amount of community members who volunteered in organisations decreased from 31% to 20% since the opening of the mine.

While Petrova & Marinova's (2013) research does indicate that disruptions to social capital are linked with migrator workforces, it frames this disruption as a change in the social landscape. The challenge for communities who face shifts in their social landscape is mobilising and adapting to these changes by reshaping local relationships and redefining community identity. Some communities choose to view FIFO workers as an opportunity to capitalise on a market into which they can promote liveability and tourism, supporting local economic benefit. This balance is important to monitor throughout the planning and design of major infrastructure projects.

Land use conflict

Land use conflicts between development and recreational users is not uncommon. In cases where 'wilderness' is developed there are often negative impacts on recreational users relating to access, emotional connection and physical disruption. The damming of Lake Pedder, Tasmania, in 1972 is possibly the most iconic case in Australian history highlighting individual's connection to place.

Lake Pedder

In 1972, Lake Pedder was dammed by the Hydro Electric Commission of Tasmania for hydroelectric power generation. During the 1960s, Lake Pedder was a popular recreational area for walking and provided inspiration for many local artists. Announcement of the project caused immense backlash among some members of the community, giving birth to the United Tasmania Group – one of the first green parities in the world. While Lake Pedder did get dammed, the UTG later become the Tasmanian Greens and were instrumental in preventing the damming of the Upper Franklin River in 1983 (Kirkpatrick 1988, Dovers 2013). The Lake Pedder case highlights how development of the environment can have negative impacts on individuals, to the point where there is significant backlash and public political opposition.

D Social baseline analysis

D-1 Description of places within area of social influence

D-1-1 Lobs Hole

Lobs Hole was established in the 1850s as a small copper mining settlement, with some remaining ruins of Washington Hotel still present at the site. Lobs Hole is currently used as a remote recreational camping area within the KNP, located north along a single way 37km 4WD trail off Link Road. Lobs Hole has no camping amenities. It is used by visitors primarily in warmer months.

For Exploratory Works, Lobs Hole will be the location of the worker accommodation camp.

For Main Works, Lobs Hole would continue to be used as a worker accommodation camp along with another accommodation camp at Marica.

The Project will result in closure of public access to Lobs Hole, as previously assessed in the Exploratory Works EIS (p.102). The following mitigation measure was recommended (p118): Master plan to be developed before the completion of Project works at Lobs Hole. Work on the rehabilitation of the site and the installation of visitor infrastructure would commence before the conclusion of the Exploratory Works (or Snowy 2.0) to enable visitor use of the area to recommence as soon as possible. This mitigation measure was adopted in the EIS (Reference SEC03).

Figure 42 Lobs Hole camping

Figure 43 Lobs Hole abandoned mine

D-1-2 **Tantangara Reservoir**

Tantangara Reservoir was constructed as part of the original Snowy Scheme. It is located approximately 17km north of the Snowy Mountains Highway (via Tantangara Road). It is currently used as a fishing spot and for camping, with boat ramp access and some basic amenities nearby at the Wares Yards campground (suitable for horse riding)

The Project will result in restricted public access to Tantangara Reservoir and will be the location of a worker accommodation camp.

Figure 44 View of Tantangara Reservoir

Figure 45 View of Tantangara Reservoir

Currango Homestead

Approximately 3km from the northern end of Tantangara Reservoir (via Port Phillip Trail) is the historic Currango Homestead which accommodates up to nine guests. The homestead is closed to guests between June and October (NPWS 2019).

Figure 46 View of Currango Homestead

Figure 47 View of campers in distance at Tantangara Reservoir

D-1-3 **Cooma**

Cooma is located approximately 90 minutes' drive (120km) south of Canberra, or close to a two-hour drive (100km) south east of the project area (Lobs Hole).

Cooma is the largest township in the Project's area of social influence with a 2016 population of 6,681 people. This population size has remained relatively stable, slightly increasing by 17 people since the 2011 census (population 6,664 people) and by 94 people since the 2006 census (population 6,587 people).

Cooma experiences a high level of visitor 'through' traffic travelling to snowfield townships such as Jindabyne and Thredbo, primarily during school holiday periods and peaking during snow season.

Cooma has strong links to the original Snowy Scheme and remains the corporate headquarters for Snowy Hydro Limited (SHL).

The Exploratory Works SA previously identified Cooma as a community that would be affected by the Project in the following ways:

» probable impacts to Cooma Airport as point of entry/exit for FIFO workers (p.31)

» impacts to the road network connections to the Project site (p.61)

» increased pressure on access to community services and facilities (p.100)

» residual impacts on housing availability arising from some of the Project workforce deciding to relocate to Cooma with their families (p.95 and p.117).

A mitigation measure relating to monitoring of long-term housing demand was adopted in the EIS (Reference SEC01) along with several traffic mitigation measures.

Figure 48 Sharp Street Cooma

Figure 49 Centennial Park

"Cooma … feels friendly. It's a great place to raise a family" - Focus group participant

D-1-4 **Tumut**

Tumut is located approximately a one-hour drive (100km) east of Wagga Wagga, or close to a 75-minute drive (100km) north west from the project area.

After Cooma, Tumut is the second largest township in the area of social influence with a 2016 population of 6,154 people. Like Cooma, this population size has remained relatively stable, slightly increasing by 68 people since the 2011 census (6,086 people) and by 229 people since the 2006 census (population 5,925 people, noting this includes a boundary change).

Tumut experiences a high level of resident and visitor 'through' traffic travelling to other townships such as Batlow and Tumbarumba, as well as snow season traffic travelling to the nearby Selwyn Snowfields as well as Jindabyne and Thredbo.

Tumut is well known for its pine forestry industry.

"Tumut is a pretty stable town" - Focus group participant

The Exploratory Works SA previously identified Tumut as a community that could be affected by the Project via increased pressure on community services and facilities arising from the potential of some of the Project workforce choosing to relocate their families to the area (p.100), noting this risk was assessed as being low.

D-1-5 **Adaminaby**

Adaminaby is a small village located approximately 40 minutes' drive (50km) north west from the town of Cooma (see Section 6.3).

In 1957 the entire village of Adaminaby was relocated from its original location (now known as 'Old Adaminaby) for the construction of Lake Eucumbene as part of the original Snowy Scheme. The lake is now very popular for recreational trout fishing.

The population of Adaminaby is relatively stable, with a 2016 population of 210 people, a decrease of 16 people since the 2011 census (226 people) and 24 people since the 2006 census (234 people). The resident population is made up of predominately older people, with more than half (55%) of the population aged over 55 years.

The Exploratory Works SA previously identified that the community of Adaminaby could be exposed to more traffic impacts arising from its location on the Snowy Mountains Highway (p.89). Tourist accommodation providers also raised concern about the perceived risk of competing demands on the local short-term housing market (during the snow season) (p.100).

Figure 50 The Big Trout

Figure 51 Adaminaby Shops

"Adaminaby is safe; everyone watches out for each other." - Focus group participant

D-1-6 **Providence Portal**

Providence Portal is located approximately 15 minutes' drive (18km) north west of Adaminaby. It consists of two tourist accommodation operators with no other residential population. It is very close to the Selwyn Snowfields (26km). This location is on the Bicentennial National Trail, a long-distance trekking route. It is also adjacent to the Eucumbene River, a popular fishing spot. The Exploratory Works SA previously identified that the tourist accommodation providers in Providence Portal raised concern about the perceived risk of competing demands on the local short-term housing market (during peak tourism season) (p88).

D-1-7 **Cabramurra**

Cabramurra is a small village of around 250 dwellings constructed in 1954 for the original Snowy Scheme workers and their families. It has since been modernised and rebuilt in the early 1970s as a 'company town' to accommodate SHL employees and contractors. While visitors can access Cabramurra's retail facilities, its accommodation is not open to the public (Snowy Hydro Limited 2019).

Cabramurra is located closest to the site of the Project construction works, being approximately 20km south of Lobs Hole. It is also almost an equidistant 90-minute drive from both Tumut (110km) and Cooma (110km). At an elevation of 1,488m, Cabramurra is known as the highest town in Australia. Its buildings feature very high-pitched roofs to cope with winter snow falls.

Cabramurra has a very low, fluctuating population which at the 2016 census was 37 people. Due to this small sample size, there is limited demographic data on this population. The Exploratory Works SA previously identified Cabramurra as being affected by the Project in the following ways:

» higher risk of traffic impacts to road network connections to the Project site (p.15, p.86)

» increased pressure on access to childcare and school education facilities (p.27)

» increased pressure on housing availability arising from some of the Project workforce being accommodated there initially during construction of workforce accommodation camps at the Project site (p.25, p.50, p.85, p.94, p.95, p.99).

D-1-8 **Talbingo**

Talbingo is a small village located approximately 30 minutes' drive (40km) south east of Tumut.

Like Cabramurra, Talbingo was established for the original Snowy Scheme workers and their families. Similar to Adaminaby, the original township was relocated in 1968 to construct the Jounama Pondage as part of the original Snowy Scheme.

Talbingo is also well known as the place where the author Miles Franklin was born.

The residential population of Talbingo in 2016 was 226 people, a slight increase of 27 people since the 2011 census (199 people). The age profile of population is predominately older, with more than half (62%) of the population aged over 55 years.

Talbingo is well known for its proximity to the Tumut 3 Power Station (see Figure 28) and a Snowy Scheme visitor display centre is located at the Talbingo shopping complex. Talbingo is a popular place to access Talbingo Reservoir and Blowering Dam for recreational holiday-makers, particularly for fishing and water skiing (summer) and for its proximity to the snowfields (winter).

The Exploratory Works SA previously identified a number of minor impacts on Talbingo Reservoir arising from closure of access for recreational users (p.103). Most of these impacts affect a small number of people and were assessed as being low risk (p.105). The following mitigation measure was recommended (p.119): Restrictions to access to Talbingo Reservoir at the spillway end for recreational users should be timed to avoid the peak visitor use periods (i.e. 7 am-9 am on weekends and school holidays between October and April). This mitigation measure was adopted in the EIS (Reference SEC06)

Figure 52 Talbingo Shops

Figure 53 Tumut 3 Power Station

"Talbingo has turned into a holiday town." - Focus group participant

D-1-9 Batlow

Batlow is located approximately 30 minutes' drive (35km) south west of Tumut (via Batlow Road).

Batlow is the fourth largest town in the area of social influence, with a 2016 population of 1,021 people. This population size has remained relatively stable, slightly decreasing by 7 people since 2011 (1,026 people). Like Tumbarumba, Batlow was originally established as a gold mining town during the 1850s.

Batlow experiences a high level of resident 'through' traffic travelling to Tumbarumba and visitor traffic to nearby snowfields during the snow season.

Batlow is well known for its apple and stone fruit growing industry.

"Batlow is so pretty, so friendly and community orientated." - Focus group participant

D-1-10 Tumbarumba

Tumbarumba is located approximately one-hour drive (67km) south west of Tumut (via Batlow Road).

Tumbarumba is the third largest town in the area of social influence, with a 2016 resident population of 1,484 people. This population size represents a slight increase of 29 people since 2011 (1,455 people) and a slight decrease of 3 people since 2006 (1,487 people). Tumbarumba was originally established as a gold mining town in the 1850s. Tumbarumba experiences a high level of visitor 'through' traffic travelling to the nearby Selwyn and Thredbo snowfields during the snow season. Tumbarumba is well known for its timber industry as well as a cool climate wine growing region.

"Tumbarumba is quite a vibrant town, a lot of tourists coming in." - Focus group participant

D-1-11 Other nearby townships

There are a number of place-based townships within the area of social influence who were not assessed for impacts in the Exploratory Works SA because they were considered too geographically distant from the Project location. For the larger scale Main Works component of the Project however, they have been included on the basis they could experience 'flow on' effects (indirect impacts) arising from the close network of transport/travel relationship with the largest towns of Cooma and Tumut (in terms of resident access to services and facilities).

Adelong

Adelong is located approximately 20 minutes' drive (22km) west of Tumut (via the Snowy Mountains Highway). It has close relationships with Tumut, being on the road route for traffic travelling west to the Hume Highway. Adelong had a resident population of 943 people in 2016.

Adelong could experience some level of flow on effect from impacts on Tumut (housing and traffic).

Gundagai

Gundagai is located approximately 35 minutes' drive (37km) north west of Tumut (via Gocup Road). It has close relationships with Tumut, being on the road route for traffic travelling north to the Hume Highway.

Gundagai had a resident population of 1,925 people in 2016.

Gundagai could experience some level of flow on effect from impacts on Tumut (housing and traffic).

Jindabyne

Jindabyne is located approximately 45 minutes' drive (60km) south west of Cooma (via Kosciuszko Road). It has a close relationship with Cooma, particularly on matters relating to the tourism industry. Jindabyne is on the road route for traffic travelling south from Cooma to access recreational activities (including skiing during snow season). Jindabyne had a resident population of 2,629 people in 2016. Jindabyne could experience some level of flow on effect from impacts on Cooma (housing, traffic and recreation).

There is currently an active NSW Government strategic planning process aimed at revitalising Jindabyne to increase its residential and tourism growth (DPIE 2019). Community consultation sessions held during December 2018 and January 2019 collected information to inform master planning. There is an expectation that the potential long-term growth of Jindabyne will inevitably develop social infrastructure that will make Jindabyne residents less reliant on services and facilities in Cooma.

> *"[At Jindabyne] I look out of my windows and I've got the lake and the mountains, and it feels safe."*
> *- Focus group participant*

D-1-12 **Nearby major towns**

The two major place-based towns of Canberra and Wagga Wagga were not assessed for impacts in the Exploratory Works SA because the Project scale was considered to have a negligible impact on such highly populated areas.

For the larger scale Main Works component of the Project however, they have been included on the basis they could also experience indirect impacts arising from the close network of transport/travel relationship with the largest towns of Cooma and Tumut (in terms of resident access to services and facilities).

Both Canberra and Wagga Wagga were frequently mentioned during community consultation as places that residents of the area of social influence spent time at to access major facilities and services that would not otherwise be available to them, such as:

- airport and train services
- access to major suppliers of farming equipment and bulk food
- larger retail outlets such as Westfield, Aldi and Kmart
- boarding schools and University campus'
- hospital surgery and other medical specialists
- entertainment
- public service jobs.

Residents believed that both these towns would also be attractive locations for the Project workforce to relocate with their families. For a couple household, Wagga Wagga and Canberra may be perceived as more viable areas for a partner to find employment compared with smaller towns in the area of social influence.

Canberra

The total urban area of Canberra-Queanbeyan had a 2016 population of 432,369 people.

Wagga Wagga

The total urban area of Wagga Wagga had a 2016 population of 54,441 people.

"We don't easily go [to Wagga Wagga], we go there because we have to." - Focus group participant

D-2 Community capitals analysis

D-2-1 Natural capital

Natural capital refers to environmentally produced assets (i.e. from ecosystems) such as agriculture, forests, minerals and fish stocks.

Availability of natural assets

The most obvious natural capital in the area of social influence is its alpine waters, which is the reason the area was selected for the establishment of the original Snowy Scheme. The Snowy Scheme was first conceived and designed to capture and divert water into inland Australia for irrigation purposes. Management of water inflows, storage and release is still a key purpose of the Snowy Scheme, with electricity generation a core by-product of increasing importance. The variability of the availability of water in the area of social influence is still a key community concern, for example a bad snow season can impact the volume of water available in storage dams, impacting recreational users (e.g. boating and fishing) and downstream irrigators (i.e. water licensing).

Collectively, the area of social influence is orientated around the Kosciuszko National Park (KNP), an almost 7,000 square kilometre area of protected national park. It contains many threatened species of fauna and is impacted by significant populations of feral animals including wild horses.

Key natural capital assets available in the area of social influence are outlined in Table 33 below:

Table 33 Key natural capital within the area of social influence

Area of social influence	Natural capital
Cooma	» Access to snowfields » Access to Lake Jindabyne and Lake Eucumbene
Tumut	» Access to snowfields » Tumut River
Adaminaby	» Lake Eucumbene
Cabramurra	» Three-mile dam » Selwyn Snowfields
Talbingo	» Blowering Dam/ Jounama pondage » Talbingo Reservoir » Access to Yarrangobilly caves
Tumbarumba	» Paddy's River
Batlow	» Sugarpine Walk

Indicators of natural capital

Measures selected for natural capital were:

» economic value of tourism as an indicator of how the alpine environment makes the area of social influence popular for visitation

» employment in natural resource-based industries as an indicator of local dependence on these sectors to sustain their way of life

» self-reported sense of rural identity as an indicator of wellbeing.

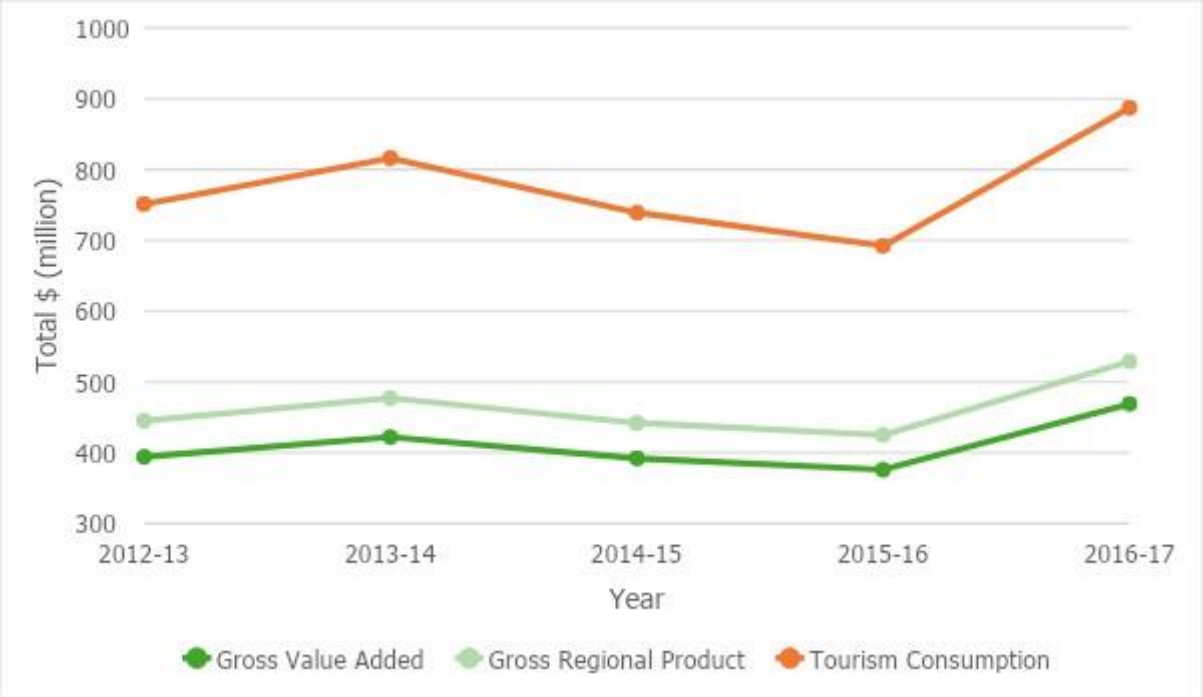
Economic value of tourism

The alpine snow season and resultant proximity of place-based communities to snowfields is a major driver of visitation to the area of social influence. Tourism in the Snowy Mountains peaks during winter months with skiing and snowboarding activities (concentrated in Thredbo and Perisher). The seasonal nature of visitation means the impacts of changing climate is a key community concern, with warming temperatures potentially reducing snow depth, cover and shortening ski season durations. People involved in the tourism industry are focused on building up the region as an all-year-round visitor destination to reduce its dependency on the snow season (Tourism Australia, 2010). Fluctuations in visitation to the area across the year can be viewed both as an economic capital asset because it stimulates key industry sectors. However, it can also place strain on physical capital assets in the region, such as reducing housing accommodation availability and increasing transport congestion. Overall, overnight visitation to the Snowy Mountains region is growing, with more than 2.5 million 'bed nights' recorded in 2015-2016, representing a 14.2 per cent increase compared with the regional NSW average of 4.5 per cent (Destination NSW 2019).

Tourism Satellite Accounts (TSA) evaluate tourism industry activity and performance within a national accounting framework. Figure 54 and Figure 55 below show that although fluctuating, the value of the contribution of tourism in the area over the past five years is a significant generator of income and employment.

For 2016-17, tourism across the Snowy Mountains was estimated to generate $887 million dollars of tourism consumption, made up of components such as spending on accommodation, transport and food services.

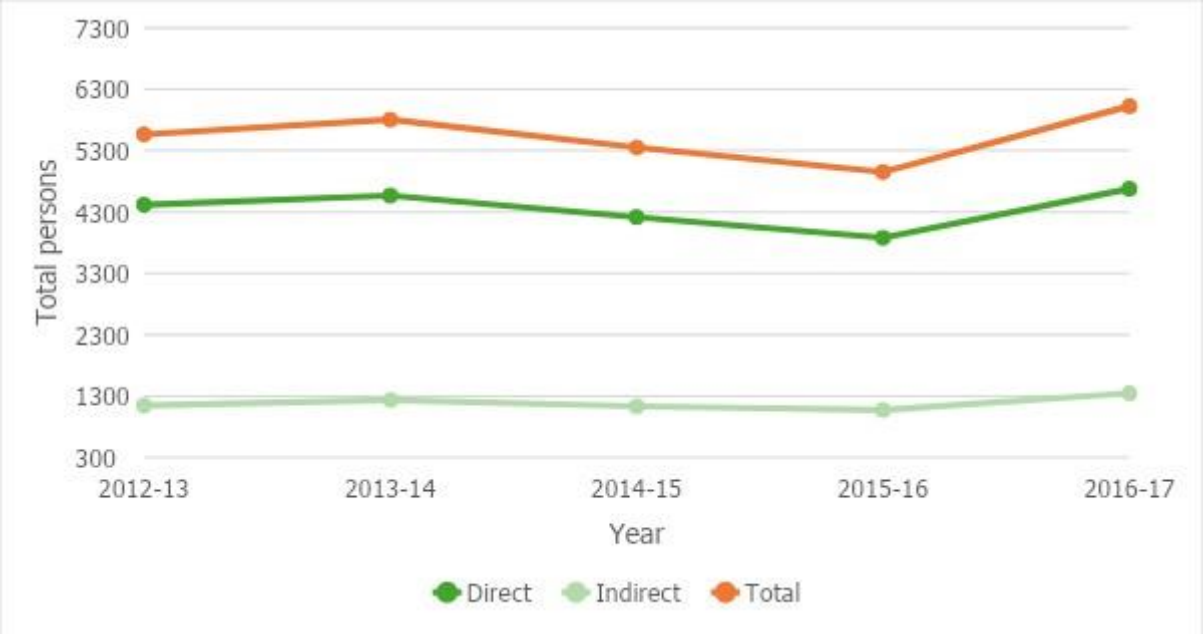
Figure 54 Economic value of tourism (Snowy Mountains)



Source: (Austrade 2018)

For 2016-17, tourism across the Snowy Mountains is estimated to generate 6,026 direct and indirect jobs, representing more than a quarter of the usual resident population of the area.

Figure 55 Employment value of tourism (Snowy Mountains)



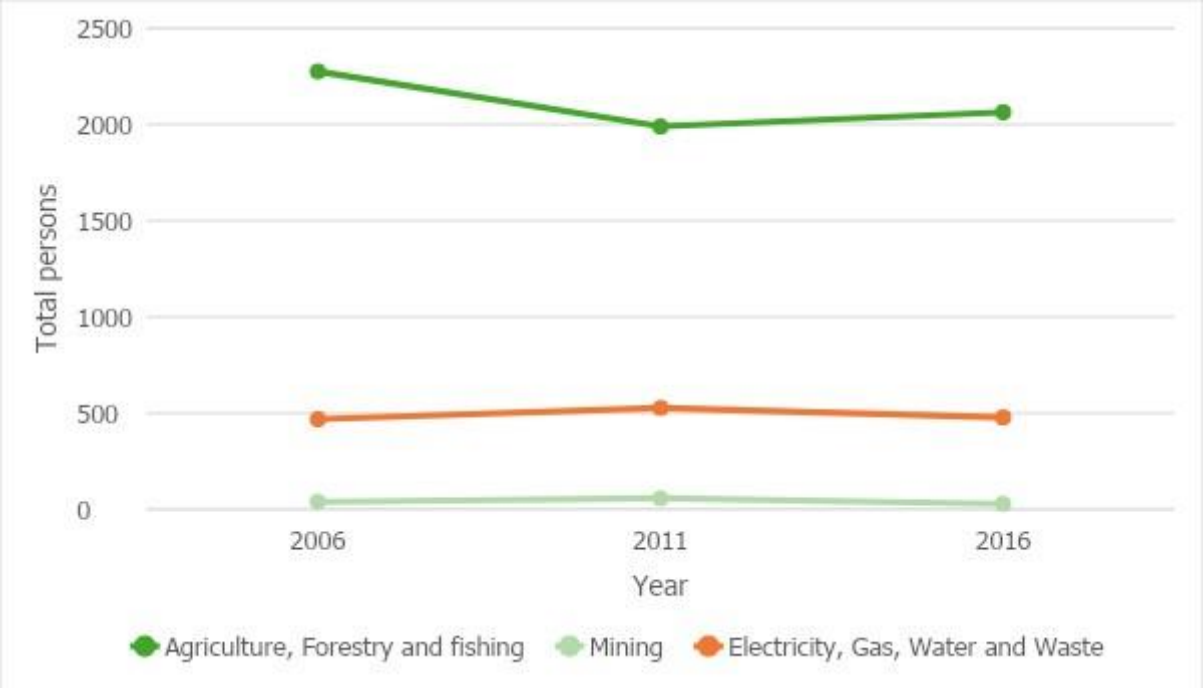
Source: (Austrade 2018)

Employment in natural resource-based industries

Across the area of social influence, there is a strong existing relationship between natural capital and some of the largest industries of employment, which include agriculture (sheep and beef grazing, fruit growing), forestry (logging) and mining (non-coal).

ABS Census data over the past ten years (Figure 56) indicates relatively stable levels of employment within these natural resource-based industries across both Snowy Monaro Regional and Snowy Valleys LGAs. Thirteen percent of the overall labour force is employed by the Agriculture, Forestry and Fishing industry, and three percent by the Electricity, Gas, Water and Waste industry. This represents a moderate degree of reliance by the area of social influence on natural resource industries for employment opportunities.

Figure 56 Persons employed by natural capital reliant industries 2016-2016



Source: (Australian Bureau of Statistics 2016)

Sense of rural identity

Community consultation outcomes indicated social identities in the area are strongly informed by the rural 'country' setting of homes, workplaces and recreational sites. Several focus group participants reported that their choice to move to, live and stay in the area is tremendously driven by appreciation of the natural capital elements that surround them such as lakes, rivers, mountains and bushland. This value of the natural environment was frequently expressed through descriptions of overall quality of life including fresh air, open space and clean water.

> *"It's an awesome area, the caves are not far away, you can really get out and explore." - Focus group participant*
>
> *"There's plenty to do around here, we're on the doorstep of the mountain." - Focus group participant*
>
> *"It's nice to live here: fantastic fresh air, terrific fresh water, I just love it." - Focus group participant*

Assessment of natural capital

The area of social influence comprises an abundance of natural assets focused on alpine seasonality which are highly valued by residents, workers and visitors. The wide availability and proximity to a diversity of natural assets has led to the formation of multiple industries of employment that depend on them, particularly for tourism and agriculture.

Arising from its array of existing natural capital assets, the area of social influence is likely to be vulnerable to any changes the project may cause in relation to land use conflicts between the Project and:

» recreational users, through restricted access to snowfields, camping areas or impacts to fish stocks in Talbingo and Tantangara reservoirs

» workers within agricultural production including logging, grazing or fruit growing, through changes to irrigation, road transportation, or access to seasonal workforces (e.g. fruit pickers).

The area of social influence is also likely to exhibit a level of adaptive capacity arising from their natural capital assets, namely:

» an existing ability to adjust to large seasonal fluctuations in visitor populations to the Snowy Mountains region

» the availability of a wide variety of recreational sites across the area, decreasing the dependency on any one place/ activity for tourism income and increasing options for alternatives.

It is likely that existing natural capital capacity can best be enhanced and managed by:

» effective ongoing management of reservoir water levels

» protection of pristine natural environments, particularly in relation to water quality and native species.

D-2-2 Physical capital

Physical capital refers to built form assets such as factories or infrastructure like hospitals and schools, as well as the management systems that enable them to work. There are a very wide range of physical built infrastructure facilities available across the area of social influence. Critically, physical infrastructure provided in the main townships of Cooma and Tumut also meet the needs of their surrounding place-based communities.

The largest physical capital across the whole area of social influence is the Snowy Scheme itself, with 16 dams, seven power stations, one pumping station and associated tunnels, pipelines and transmission lines. Also spread throughout the area are numerous recreational infrastructure sites with associated physical capital assets such as horse camps, amenities, boat ramps and ski lifts.

Availability of physical capital

Due to the large range of physical capital types, the following categories of physical capital are examined in turn:

» economic, social and cultural capital

» transport capital

» telecommunications capital

» housing capital.

Indicators of physical capital

Measures selected for each of the physical capital types are:

» demand for schools and hospital as an indicator of capacity

» method of travel to work as an indicator of reliance on private vehicles

» mobile phone coverage and internet access as an indicator of connectivity and digital disadvantage

» change in dwelling types as an indicator of growth and diversity of stock.

Examples of economic, social and cultural infrastructure

There are a wide range of facilities within the area of social influence that support economic, social and cultural wellbeing, outlined in Table 34 below.

Table 34 Examples of economic, social and cultural infrastructure

Area	Economic infrastructure	Social infrastructure	Cultural and historical infrastructure
Cooma	» Snowy Hydro Headquarters and 'Snowy Hydro Discovery Centre' » Tourist accommodation (more than 20 hotel/ motels)	» 6 Government and Catholic schools, 1 Steiner school (Alpine School opening 2019 in Binjura), TAFE » Greater Southern Area Health Services	» Raglan Gallery and cultural centre » NSW Correctional Services Gaol museum

Area	Economic infrastructure	Social infrastructure	Cultural and historical infrastructure
	» Restaurants, cafes and fast food chains » Three major retail supermarkets » Cooma Twin Cinema	» Cooma Festival Swimming Pool » Snowy Monaro Regional Library » Multipurpose centre » Cooma skate and bike park » Correctional services facility » Swimming pool » Cooma hospital and medical centres	» Stewarts Visitor Information and Gallery » Cooma Little Theatre
Tumut	» Tourist accommodation (more than 25 hotels and a caravan park) » Restaurants, cafes and fast food chains » Two major retail supermarkets » Snowy Valleys Council offices » CarterHoltHarvey Wood products sawmill, chipboard panel factory and sawlog processing plant (Tumut) » Visy pulp and paper mill (Tumut)	» Neighbourhood centre » Library » Hospital and medical centres » Swimming pool » 7 religious and community spaces (hireable) » 5 Government and Catholic schools, TAFE and childcare centres	» Montreal Community Theatre
Adaminaby	» 'The Big Trout' tourist attraction » Accommodation services including a hotel, tourist park (cabins) and resort » Local retail including grocery store, post office, bakery and ski hire shop » Bowling club and bistro	» Adaminaby Public School » Swimming pool	» Snowy Scheme Museum
Cabramurra	» Houses and facilities for SHL workers and contractors including general store, petrol station, canteen » Airstrip	» Primary school classroom » Indoor recreation facilities	» Nil
Talbingo	» Service station » Supermarket » Club, motel and tourist park	» Primary school » Police station » Golf course (private) » Community health care facility » Library » Community health care	» Tumut 3 power station

Area	Economic infrastructure	Social infrastructure	Cultural and historical infrastructure
Tumbarumba	» Hyne and Sons timber mill » Viticulture (wineries) » Blueberry growing	» Tumbarumba library and archive » 3 schools: two primary, one high » RSL memorial hall and community hall » Tumbarumba hospital and Multi Purpose Centre, medical centres	» Museum » Historic courthouse » Tumbarumba rodeo (annual) » Tumbafest (annual)
Batlow	» RSL club, restaurants and cafes » Agriculture (apples) » Service station » 6 hotels/motels	» Batlow Technical School and Catholic school » Batlow/Adelong Multi Purpose Centre and medical centre » Batlow Literary Institute » Show Pavilion	» Batlow Cider Festival » Historic Society Museum
Jindabyne	» Service stations » RSL club, pub, numerous bars, restaurants and cafes » Local cinema » Information centre » Distilleries » Tourist accommodation: hotels, motels, private retails, holiday park » Snowy-based retail » Major super markets	» 2 Government and Private schools » Medical centre and medical practice » Library » Halls » Wenoma Studio » Neighbourhood centre » Memorial halls	» Kunama Gallery » Light Sculpture Festival

Figure 57 Cooma Swimming Pool

Figure 58 Monaro High School

Figure 59 Tumut Swimming Pool

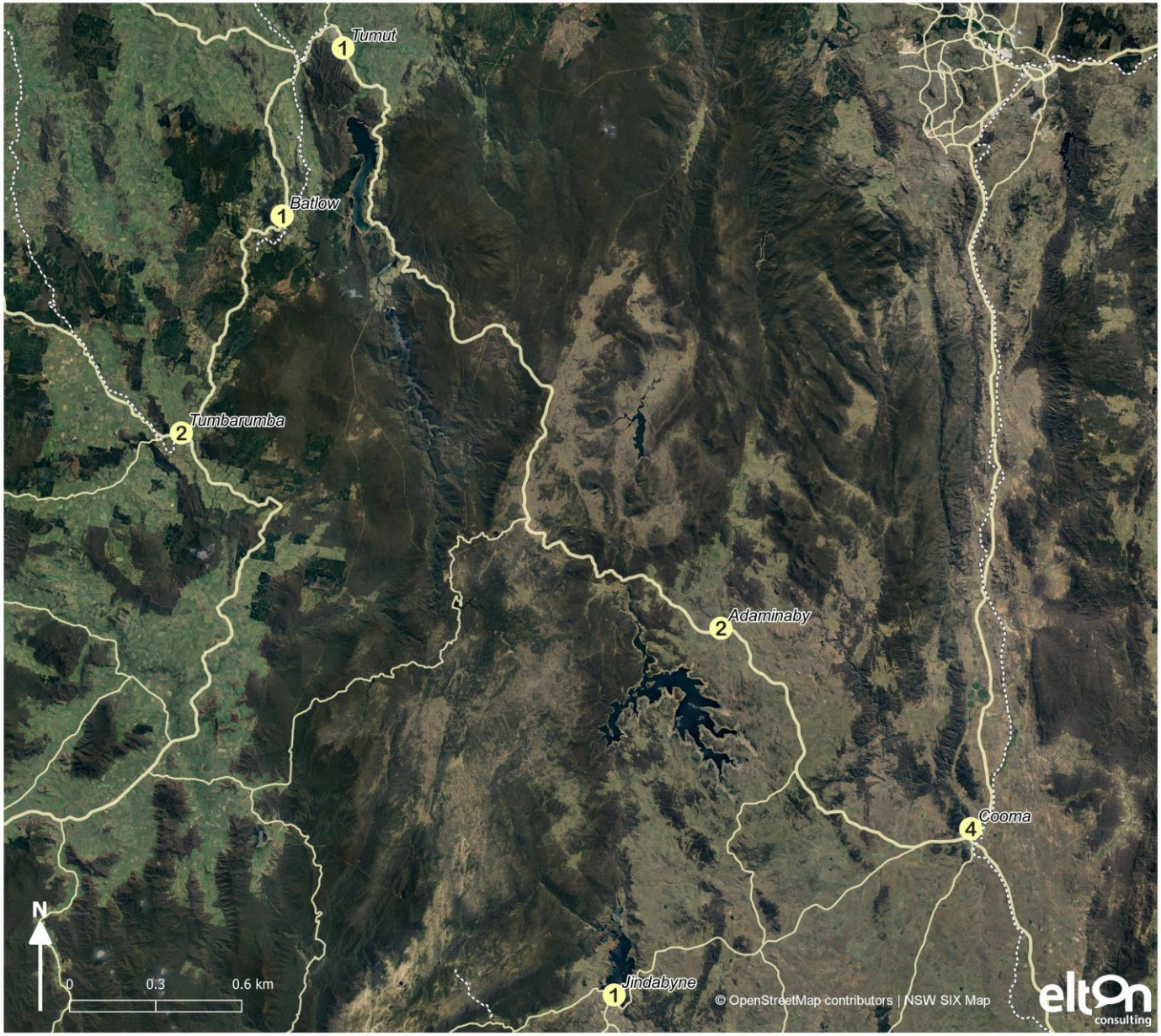
Figure 60 Tumut Hospital

Figure 61 Adaminaby Swimming Pool

Figure 62 Adaminaby Public School

The full range of identified social and community infrastructure by category as well as detailed maps for Cooma and Tumut are shown overleaf.

Art and Culture



Legend

Adaminaby
1 Snowy Scheme Museum
2 Stewarts Visitor Information and Gallery

Batlow
1 Historical Society Museum

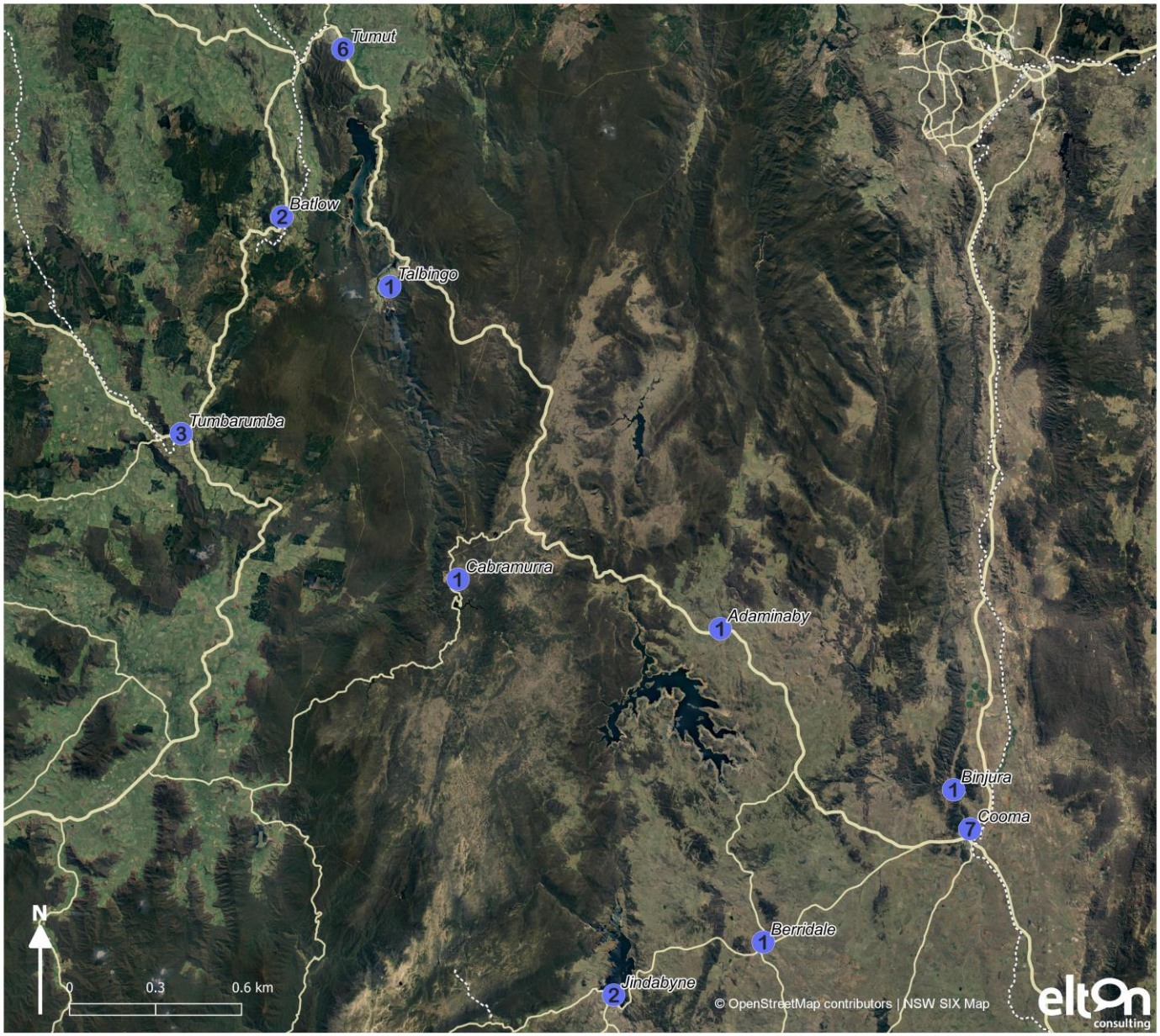
Cooma
1 NSW Correctional Services Goal Museum
2 Raglan Gallery & Cultural Centre
3 Snowy Hyro Discovery Centre
4 The Cooma Little Theatre

Jindabyne
1 Kunama Gallery

Tumbarumba
1 Historic Courthouse
2 Tumbarumba Museum

Tumut
1 Motreal Community Theatre

Education



Legend

Adaminaby
1 Adaminaby Public School

Batlow
1 Batlow Technology School
2 St Mary's School

Berridale
1 Berridale Public School

Binjura
1 The Alpine Steiner School

Cabramurra
1 Cabramurra Public School

Cooma
1 Cooma North Public School
2 Cooma Public School
3 Cooma TAFE
4 Monaro High School
5 Snowy Mountains Christian School
6 St Patrick's Parish School
7 St Patrick's Parish School

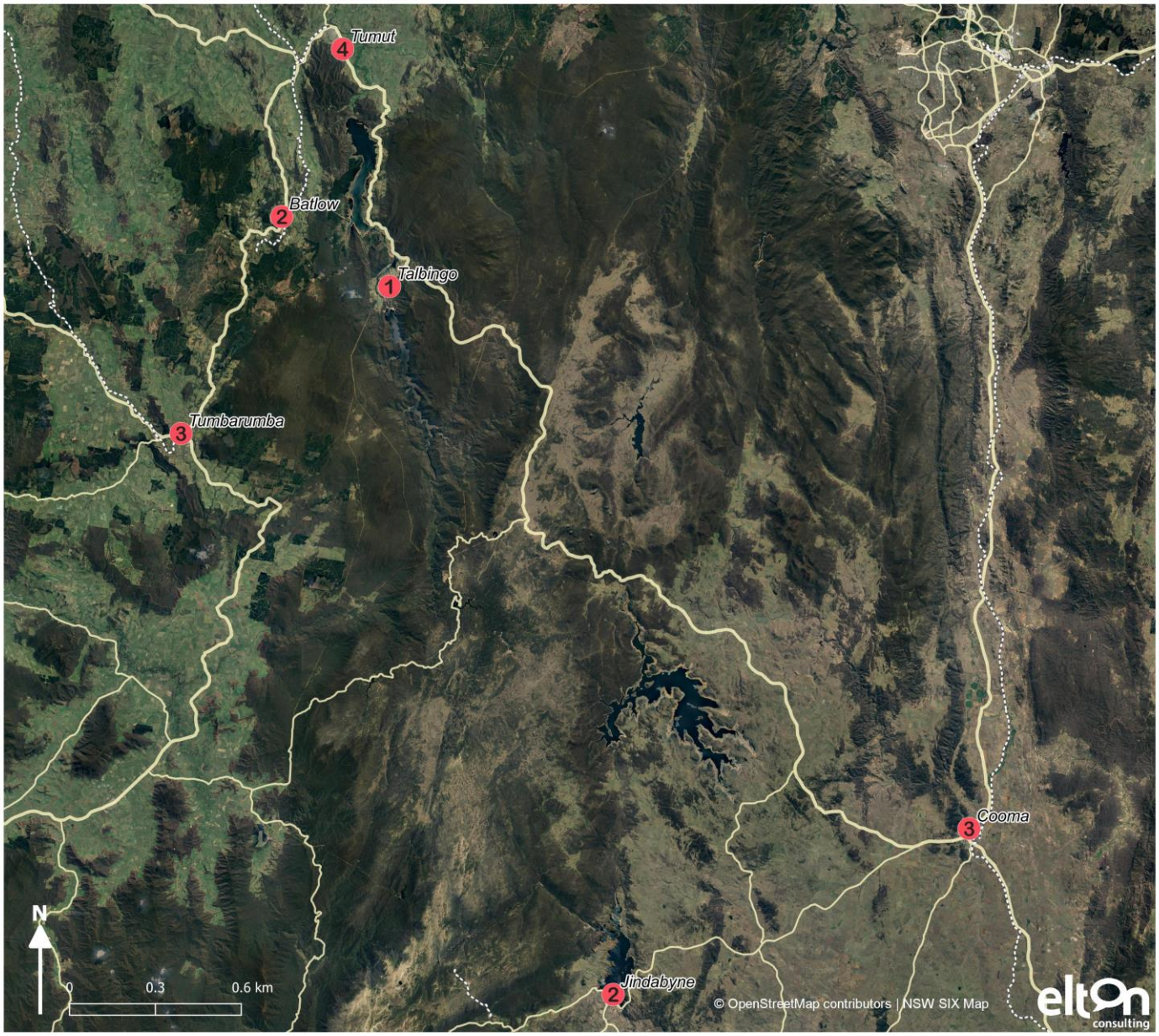
Jindabyne
1 Jindabyne Central School
2 Snowy Mountains Grammar School

Talbingo
1 Talbingo Public School

Tumbarumba
1 All Saints Primary School
2 Tumbarumba High School
3 Tumbarumba Public School

Tumut
1 Franklin Public School
2 Gadara School
3 McAuley Catholic Central School
4 Tumut High School
5 Tumut Public School
6 Tumut TAFE

Health



Legend

Batlow
1 Batlow Medical Practice
2 Batlow/Adelong Multi Purpose Service

Cooma
1 Cooma Hospital and Health Service
2 Sharp Street Medical Practice
3 The Bombala Street Surgery

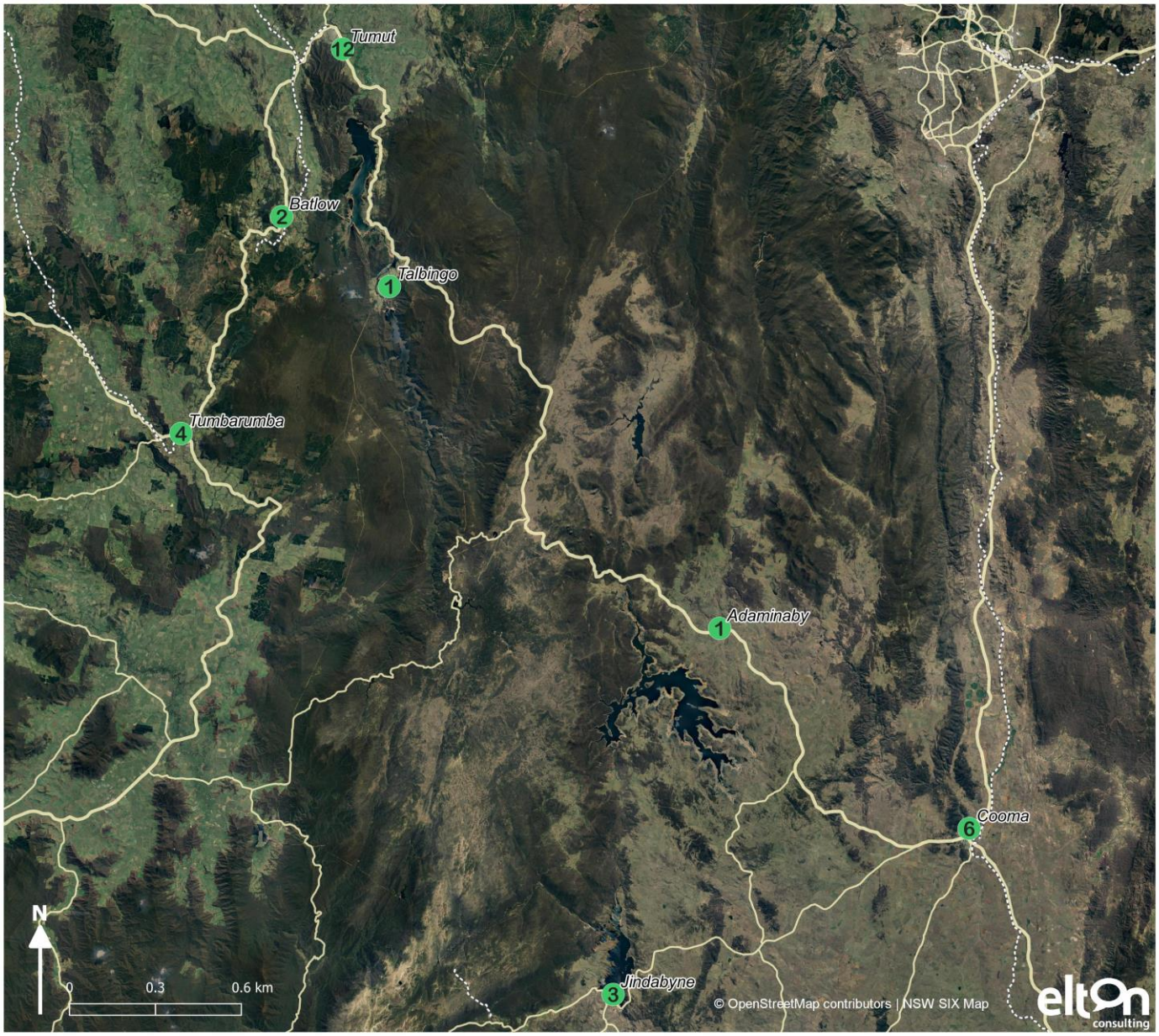
Jindabyne
1 Jindabyne Medical Practice
2 Snowy Mountains Medical Centre

Talbingo
1 Community Health Care

Tumbarumba
1 Roths Corner Medical Centre
2 Tumbarumba Medical Practice
3 Tumbarumba Multipurpose Service (hospital)

Tumut
1 Connection Medical Centre
2 Fitzroy Medical Centre
3 Tumut Family Medical Centre
4 Tumut Hospital

Recreation



Legend

Adaminaby
1 Adaminaby Swimming Pool

Batlow
1 Batlow Community Swimming Pool
2 Batlow Memorial Park

Cooma
1 Cooma Festival Swimming Pool
2 Cooma Showground
3 Cooma Skate and Bike Park
4 Cooma Tigers Football Club and Playing Fields
5 Cricket Field
6 Sports Hub

Jindabyne
1 Jindabyne Indoor Heated Pool
2 Jindabyne Skate Park
3 Jindabyne Sport & Recreation Centre

Talbingo
1 Cricket Field

Tumbarumba
1 Sports Hub
2 Tumbarumba Showgrounds & Sports Stadium
3 Tumbarumba Sports Ground
4 Tumbarumba Swimming Pool

Tumut
1 Bullpaddock
2 Cricket Field
3 Elm Drive Hocky Fields
4 Hard Courts
5 Jarah Oval
6 Playing Field
7 Playing Field
8 Playing Fields
9 Riverglade Oval
10 Tumut Showground/Pavillion
11 Tumut Turf Club
12 Tumut War Memorial Community Swimming Pool

Cooma

Legend

Art and culture
1 NSW Correctional Services Goal Museum
2 Raglan Gallery & Cultural Centre
3 Snowy Hyro Discovery Centre
4 The Cooma Little Theatre

Community facilities
1 Cooma Multi Purpose Centre
2 Snowy Monaro Regional Library

Education
1 Cooma North Public School
2 Cooma Public School
3 Cooma TAFE
4 Monaro High School
5 Snowy Mountains Christian School
6 St Patrick's Parish School
7 St Patrick's Parish School

Emergency services
1 Cooma Ambulance Station
2 Cooma Fire Station
3 Cooma Police Station
4 Monaro Rural Fire Service

Health
1 Cooma Hospital and Health Service
2 Sharp Street Medical Practice
3 The Bombala Street Surgery

Recreation
1 Cooma Festival Swimming Pool
2 Cooma Showground
3 Cooma Skate and Bike Park
4 Cooma Tigers Football Club and Playing Fields
5 Cricket Field
6 Sports Hub

Tumut

Legend

Art and culture

1 Motreal Community Theatre

Community facilities

1 Anglican Church Hall and Meeting Rooms
2 Baptsist Church Hall
3 Boys Club Hall
4 CWA Craft Centre Tumut
5 Seventh Day Adventist Hall
6 St Stephens Hall
7 Tumut Golf Club
8 Tumut Library
9 Tumut Neighbourhood Centre

Education

1 Franklin Public School
2 Gadara School
3 McAuley Catholic Central School
4 Tumut High School
5 Tumut Public School
6 Tumut TAFE

Emergency services

1 Tumut Fire Station
2 Tumut Police Station
3 Tumut Rural Fire Service

Health

1 Connection Medical Centre
2 Fitzroy Medical Centre
3 Tumut Family Medical Centre
4 Tumut Hospital

Recreation

1 Bullpaddock
2 Cricket Field
3 Elm Drive Hocky Fields
4 Hard Courts
5 Jarah Oval
6 Playing Field
7 Playing Field
8 Playing Fields
9 Riverglade Oval
10 Tumut Showground/Pavillion
11 Tumut Turf Club
12 Tumut War Memorial Community Swimming Pool

Indicators of economic, social and cultural infrastructure

Much of the economic, social and cultural capital facilities in the area of social influence were built more than 20 years ago, with many in need of refurbishment to meet contemporary standards. Community consultation outcomes indicated that like many other Australian rural communities, place-based communities in the area of social influence are affected by broader societal trends of urban intensification and globalisation that have seen widespread gradual decline in small towns.

> *"It is a little bit sad though because I can see how big [Batlow] was and I'd like to see it like that again: I can't imagine what it would have been like when it was so busy like in the old photos of cars in the street." - Focus group participant*

Focus group attendees were very aware of the need to build up new economic opportunities, particularly within the tourism industry, to revitalise and compensate for industries in decline. For example, the village of Batlow used to operate a 'Mountain Maid' cannery which used to employ hundreds of staff until its closure in the early 2000s. Snowy Valleys Council recently purchased the 2.5ha site with funds from the NSW Government's Stronger Communities Major Infrastructure Fund following community consultation that identified the improvement of the derelict site as a priority for the Batlow community. Expressions of interest are currently open for applications from commercial interests for its redevelopment (Snowy Valleys Council 2018).

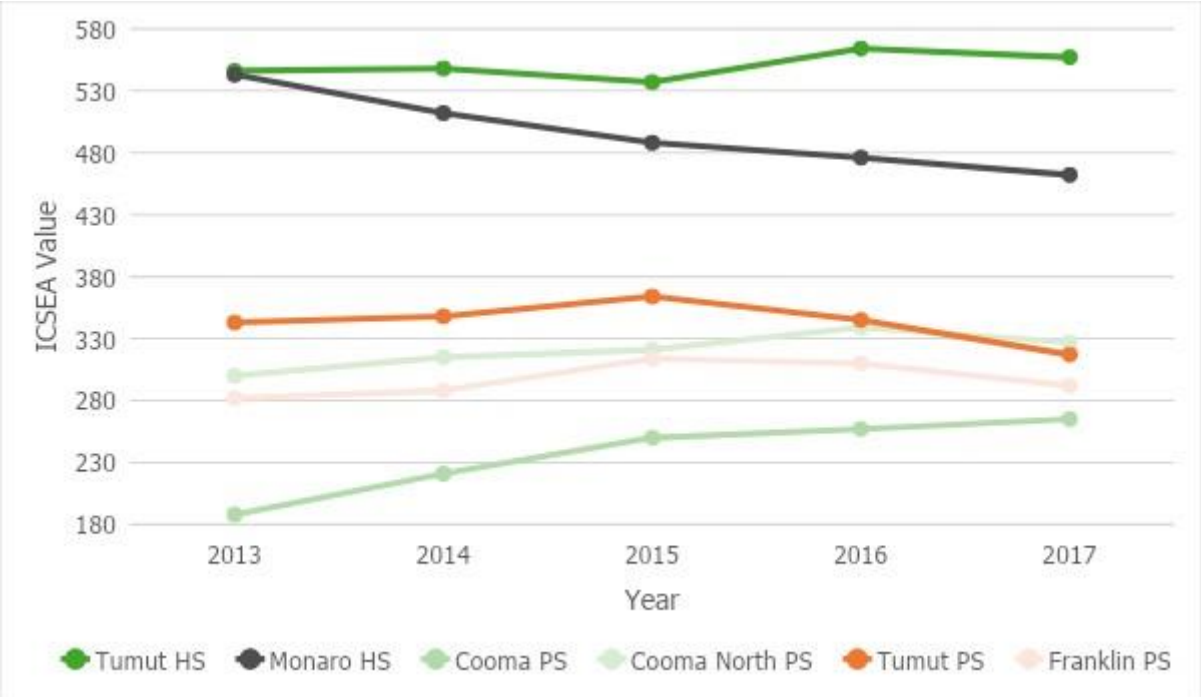
> *"As a community we have a lot of initiatives going on: Ciderfest, apple blossom festival, our show- just recently an artist coop started up… so as a community we're doing all we can from our level but there's just not a lot of opportunities for young people." - Focus group participant*

It is worth noting then that much of the economic, social and cultural infrastructure in the area of social influence was designed to accommodate higher populations than they are currently servicing. This has led to a trend towards centralising some services such as policing, and even pressure to close some facilities such as the swimming pool at Adaminaby.

Social infrastructure capacity

Community consultation activity outcomes indicated that schools in the area of social influence are perceived as having significant enrolment capacity. Although school enrolments have seen recent slight declines (see Figure 63), in the past many of the schools have accommodated hundreds more students than they are currently servicing

Figure 63 Government school enrolment trends



Education Data Hub

Community consultation outcomes indicate hospitals are perceived as having limited capacity. Both Tumut and Cooma hospital are relatively small hospitals, having have fewer than 50 beds. Attracting and retaining doctors was reported to be a significant problem, with a high turnover of recently graduated doctors who use the opportunity to work at regional hospitals to gain experience.

"The people who work [at the hospital] do the best they can with the small amount of resources they're given." - Focus group participant

"Even if there's two car crashes on the same day [the hospital] wouldn't cope." - Focus group participant

"I had to go to the hospital, thankfully I didn't need stitches because of I did I would have had to go to Wagga Wagga." - Focus group participant

At present, the main reported impact of local hospitals reliance on local doctors to provide hospital rounds and emergency assistance was that there is flow on effects experienced at general medical practices, such as cancelled appointments or longer waiting times.

Both Tumut and Cooma hospitals have recently attracted funding for enhancement of infrastructure. Tumut hospital is being rebuilt with a new $50 million hospital due for construction to begin in late 2019 (NSW Health 2018). For Cooma Hospital, planning is underway for a $18.6 million upgrade of services and facilities (NSW Health 2019). Funding for the Tumbarumba Multipurpose Service project also includes the construction of a new building (NSW Health, 2019).

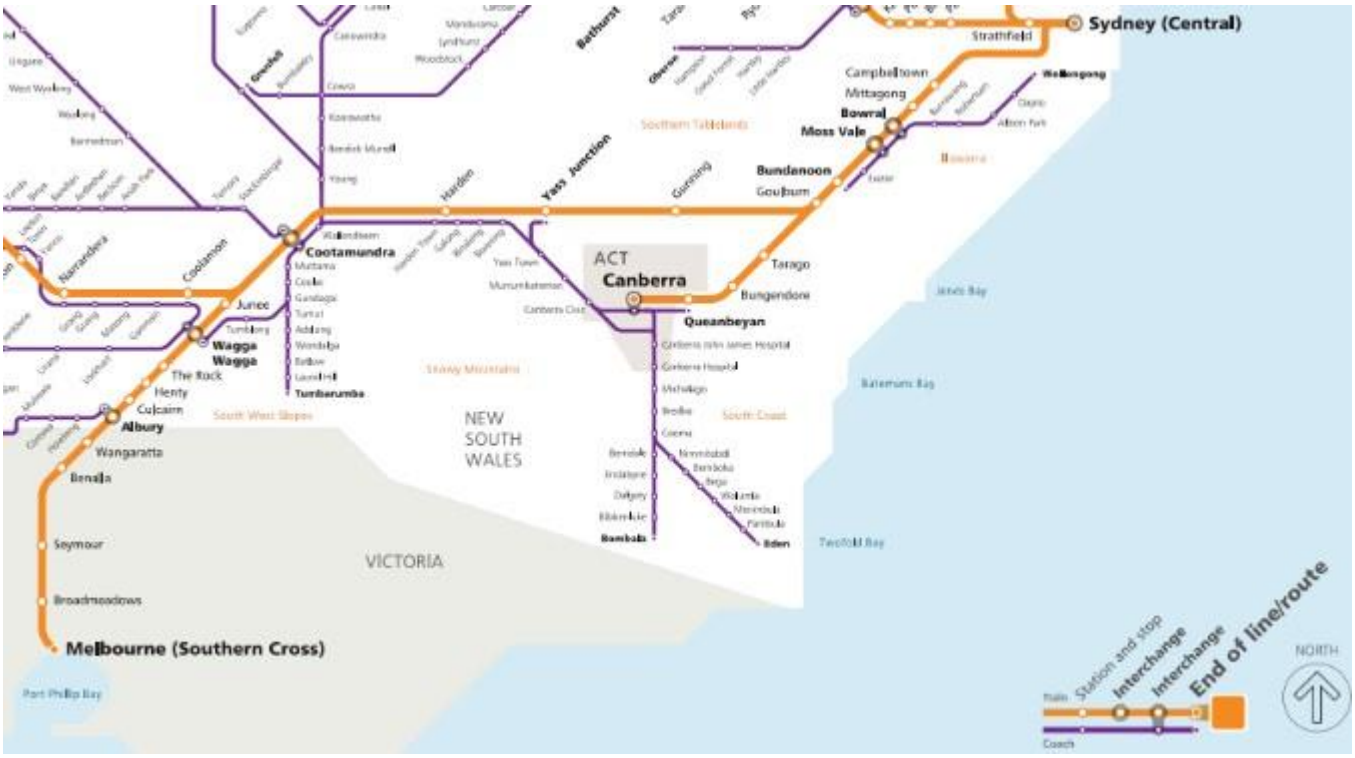
Examples of transport infrastructure

For transport capital, people within the area of social influence are highly dependent on private vehicles and road networks for their daily travel needs (outlined in Table 35). Train services are limited to regional towns, with connecting coach services to other towns (shown in Figure 64). A full description of the existing traffic and transport environment is also described in the Snowy 2.0 Main Works Traffic and Transport Assessment Chapter 3, (SCT Consulting 2019).

Table 35 Examples of transport infrastructure

Area	Description
Cooma	Major access roads into Cooma are: » via B72 Snowy Mountains Highway when travelling from Tumut, passing through Adaminaby » via B23 Monaro Highway when travelling from Canberra, passing through the villages of Williamsdale, Michelago, Bredbo and Bunyan. The Snowy Mountains Airport is located south west of Cooma, a 15-minute drive away (16 km on the Kosciuszko Road). The airport provides return services from Cooma to Sydney and is serviced by Regional Express (Rex). There are also NSW Trainlink services to Canberra with connecting bus services to Cooma.
Tumut	Major access roads into Tumut off the M31 Hume Highway (the major route between Sydney and Melbourne) are: » via B72 Snowy Mountains Highway which passes through Adelong » via Gocup Road which passes through Gundagai. Tumut Airport is a small facility for general and recreational aviation only. There is a NSW Trainlink service that runs from Sydney to Melbourne via Wagga Wagga, with connecting bus services between Cootamundra and Tumbarumba.

Figure 64 Transport NSW map of the regional train and coach network



Source: (TransportNSW 2018)

Many roads across the area of social influence exist as an outcome of the original Snowy Scheme. In times of peak tourism, traffic can become very heavy.

> *"The roads in winter are horrendous with black ice and everything, you've got to be really careful, it's scary, sometimes you can't get through, even the big trucks." - Focus group participant*

> *"Sunday arvo traffic any weekend in winter, the cars coming back down the highway is horrendous- McDonalds does a roaring trade, everyone stops in for a hot coffee." - Focus group participant*

> *"Heavy vehicles come down the mountain, you go around a corner and all of a sudden there's a truck doing 30km because of the curves and he can't go any faster because he would roll." - Focus group participant*

Reliance on private vehicles

In support of the finding that the area of social influence relies heavily on private road transport, Table 36 shows that there are comparatively lower numbers of households who do not have a registered motor vehicle at their address, and a high proportion of people who have three or more motor vehicles.

Table 36 Number of motor vehicles

	Snowy Monaro Regional LGA		Snowy Valleys LGA		NSW
	Number	%	Number	%	%
No motor vehicle	359	4.8	269	5	9.2
1 motor vehicle	2838	31.7	1745	32.4	36.3
2 motor vehicles	2869	35.8	1999	37.1	34.1
3 or more motor vehicles	1670	22.2	1126	20.9	16.7

Source: (Australian Bureau of Statistics 2016)

Examples of telecommunications infrastructure

Mobile coverage in non-metropolitan areas is generally lower than in metropolitan areas. The Snowy Monaro Regional Council and Snowy Valleys Council had a combined 214 reported reception blackspots (Department of Communications and the Arts, 2019). These black spots include:

» 1 blackspot in Adaminaby

» 3 blackspots in Batlow including between Batlow and Tumbarumba and Batlow and Tumut

» 2 blackspots in Tumut.

In 2018, The Australian Government Department of Communications and the Arts announced 125 priority locations which included Tumut (Department of Communications and the Arts, 2019).

Mobile phone coverage

Telecommunications capital plays an important role in facilitating connectivity throughout the area of social influence. Mobile phone services are particularly relied upon to address safety and isolation. This is particularly the case for people who run home based businesses, travel long distances or spend extended periods of time outdoors. Table 37 shows that in the area of social influence, around 8% of people work from home which is significantly higher than the NSW average of 4.8%.

Table 37 Travel to work

	Snowy Monaro Regional LGA		Snowy Valleys LGA		NSW
	Number	%	Number	%	%
Worked at home	804	8.2	481	8	4.8

Source: (Australian Bureau of Statistics 2016)

Additional power and communications infrastructure was proposed as part of Exploratory Works, including a fibre optic service link being provided to the main accommodation camp.

Internet access

Community consultation outcomes indicate that access to the internet is critical to people's ability to access every day services such as banking and online shopping. Older people or people with low computer literacy may be disadvantaged as more businesses expect customers to have online access such as healthcare, education and government services. Table 38 shows that across the area of social influence, nearly a quarter of households did not have access to the internet, whether through a desktop/laptop computer, mobile or smartphone, tablet, smart TV or any other device.

Table 38 Internet connection

	Cooma UCL	Tumut UCL	Snowy Monaro-Regional LGA	Snowy Valleys LGA	NSW
Internet access from dwelling (%)	73.2	70.5	76.5	70.9	82.5
Internet not access from dwelling (%)	21.9	26.8	19.4	26.0	14.7

Source: (Australian Bureau of Statistics 2016)

Examples of housing infrastructure

Housing is a key aspect of physical capital. Table 39 shows that of the dwellings across the area of social influence, a high proportion are unoccupied, around double the NSW average. This aligns with the region's reputation as a tourist destination, with many of these homes likely being holiday houses, huts or cabins (other than seasonal worker quarters). It may also include homes which are vacant because they are scheduled for demolition or repair.

The majority of housing stock in the Snowy Valleys and Snowy Monaro Regional LGAs are separate house dwellings, with a very low proportions apartments or townhouse style dwellings.

Table 39 Housing infrastructure

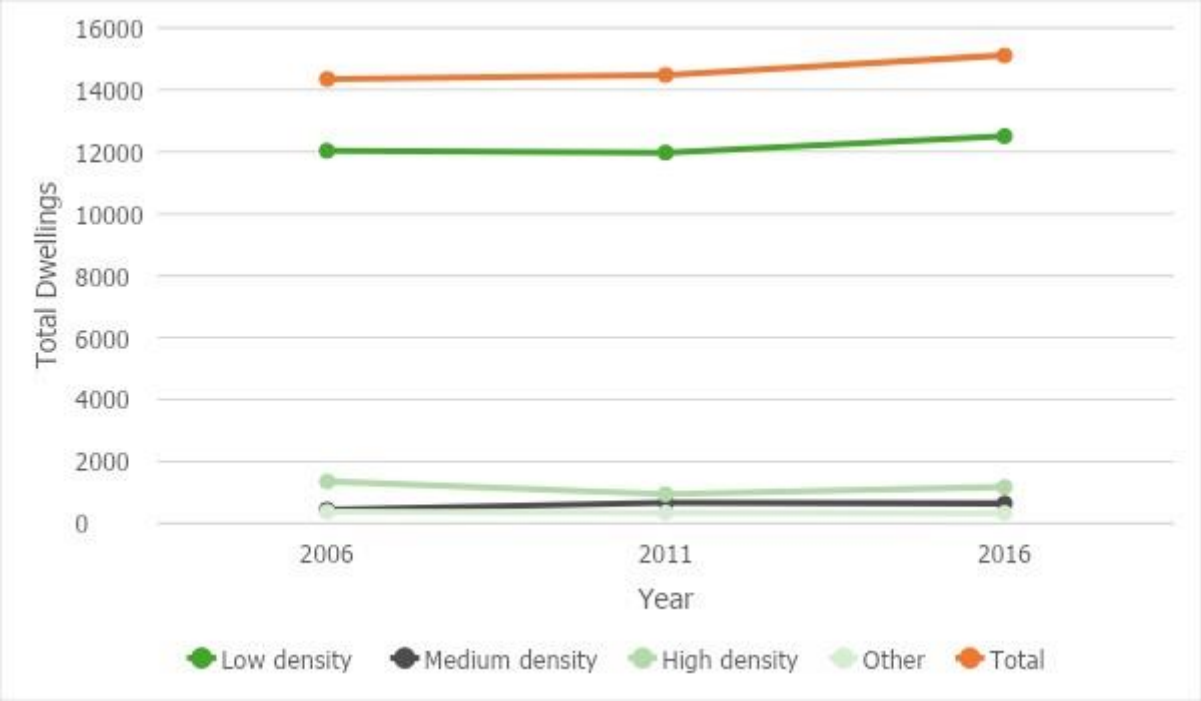
	Snowy Monaro Regional LGA		Snowy Valleys LGA		NSW
	Number	%	Number	%	%
Dwelling count					
Occupied private dwellings	7,518	75.9	5,387	83.9	90.1
Unoccupied private dwelling	2,393	24.1	1,037	16.1	9.9
Dwelling structure					
Separate house (low density)	6,402	85.2	5,033	93.4	66.4
Semi-detached or terrace house (medium density	349	4.6	132	2.5	12.2
Flat or apartment (high density)	413	5.5	149	2.8	19.9
Other (includes caravans and shop top housing)	110	1.5	32	0.6	0.9

Source: (Australian Bureau of Statistics 2016)

Change in dwelling numbers

Over time, the amount of housing across the area has increased modestly, with an overall 5.3% growth rate over the past 10 years made up primarily of increases in the number of separate (low density) housing, as shown in Figure 65.

Figure 65 Change in dwelling structure



Source: ABS Tenure and landlord type by dwelling structure, time series T18, combining Snowy Valleys LGA and Snowy Monaro Regional LGA.

Assessment of physical capital

The area of social influence includes a wide range of types of physical capital focused on servicing residential and visitor populations. The availability of this capital is sometimes compromised by constraints in accessibility and ageing building quality when compared to contemporary facility types.

Arising from the existing range of physical capital assets, the area of social influence is likely to be vulnerable to any changes the Project may cause in relation to:

» access to social infrastructure, particularly hospitals. People are likely to be sensitive to further inconveniences in travel to access medical services, long wait times and limited choice in care providers.

» further risk of transport disadvantage. People without access to a car are likely to experience long travel times with some level of inconvenience relating to routes and timetable frequency, such as constraints to travel on weekends or outside of business hours. People who are reliant on car travel are likely to be sensitive to travel delays.

The area of social influence is likely to exhibit a level of adaptive capacity arising from their physical capital assets, namely:

» physical capacity within some social infrastructure, such as schools, which have been designed to cope with larger populations

» evidence of some housing growth in the area, indicating some growth resilience when compared to other NSW regional towns experiencing housing and population decline.

It is likely that existing physical capital capacity could best be enhanced and managed by:

» contemporising some older social infrastructure facilities

» re-purposing of vacant manufacturing buildings

» improving road safety and decreasing reliance on private vehicles and road transport

» improving telecommunications access

» monitoring levels of unoccupied private dwellings

» increasing diversity of housing types to encourage more housing mix available to different household types.

D-2-3 Economic capital

Economic capital refers to the resources and wealth available to individuals and families. The primary source of economic capital is income sourced from employment, which is linked to the resources and wealth available to key industry sectors.

Availability of economic capital

Across NSW, around 60% of the population is active in the workforce, with the remaining population made up of people who are studying (including school children), in a caring role, or retired. As shown in Table 40, the area of social influence has a slightly higher labour force participation rate than the NSW average.

Table 40 Labour force participation

	Cooma		Cooma Region		Tumut		Tumut Region	
	Number	%	Number	%	Number	%	Number	%
Population aged 15 and over	5733		8583		5244		6775	
Labour force/ participation rate	3449	60.2	6311	73.5	3288	62.7	4241	62.6
Unemployed	181	5.2	118	1.9	134	4.1	120	2.8

Source: Social health atlas of Australia data by population health area, Nov 2018 (Labour force data June 2016)

For people not in the labour force, income is generally sourced via government pensions. Compared with the NSW average, Table 41 shows that Cooma and Tumut have higher proportions of age pensioners, disability support pensioners and female sole parent pensioners but lower proportions of people receiving an unemployment benefit. The wider Cooma and Tumut regions have lower proportions of all pension types compared with the NSW average.

Table 41 Income support

	Cooma		Cooma Region		Tumut		Tumut Region		NSW*
	No.	%	No.	%	No.	%	No.	%	%
Age pensioners (persons 65+ years)	1,093	72.3	919	56.3	1007	77.2	1,208	65.8	69.2
Disability support pensioners (persons 16 to 64 years)	398	9.7	240	3.5	347	9.3	315	6.5	8.6
Female sole parent pensioners (females 15 to 54 years)	110	7.1	42	1.7	112	7.6	74	4.4	5.7
People receiving an unemployment benefit (persons 16 to 64 years)	254	6.2	222	3.2	216	5.8	271	5.6	5.9

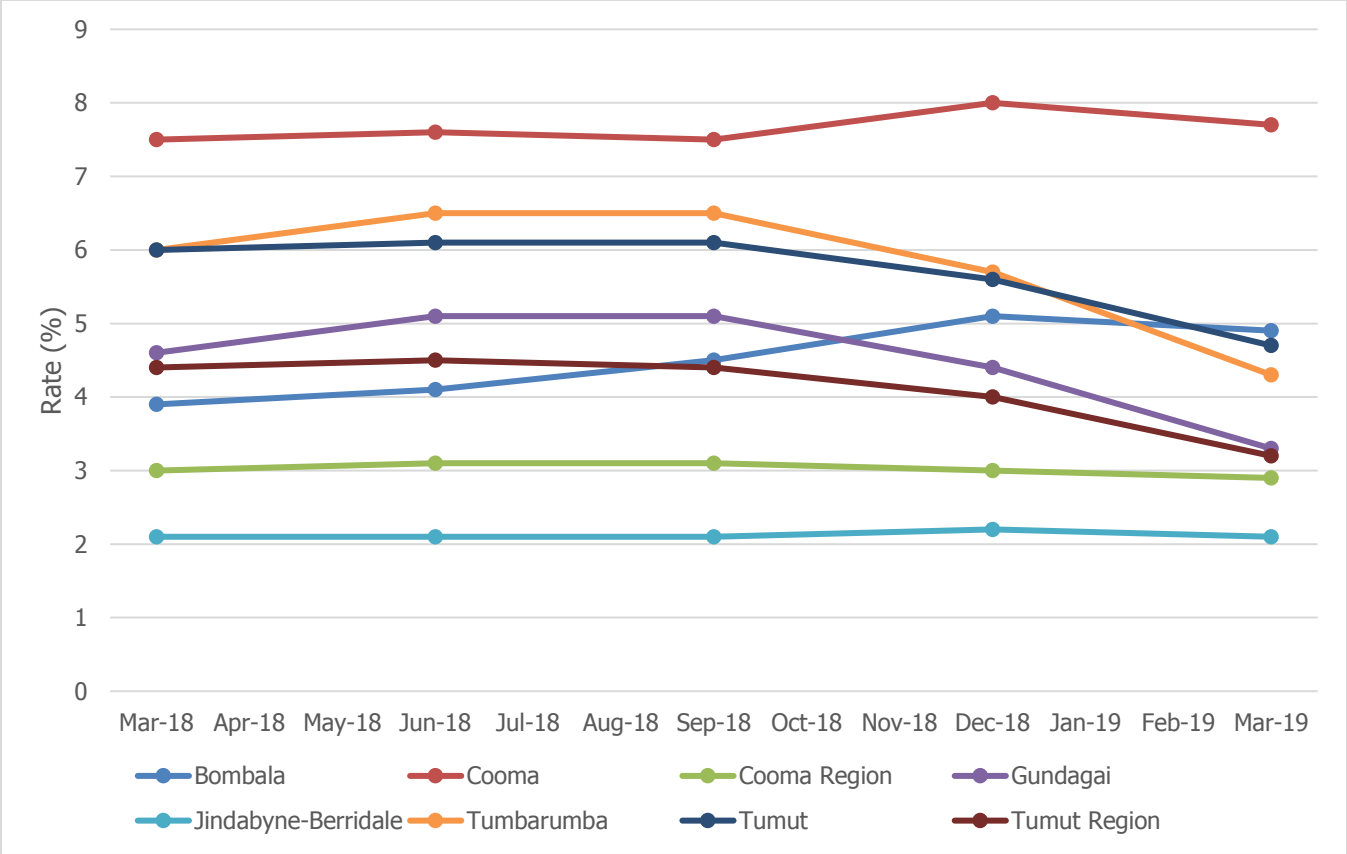
Source: Social health atlas of Australia data by population health area, Nov 2018 (Income support data June 2017). * Excludes Greater Sydney

Indicators of economic capital

Unemployment rate

The unemployment rate is a useful indicator of the number of people in the labour force who are available for and seeking work. As at June 2019, the NSW unemployment rate outside of Greater Sydney was averaging 4.9 per cent (Parliament of NSW, June 2019). Figure 66 shows that the unemployment rate is highest in the main township of Cooma (7.7%) and lowest in Jindabyne-Berridale (2.1%). Like the Cooma Region (2.9%), the Tumut Region has a lower unemployment rate (3.2%) than the township of Tumut (4.7%). Generally, though, all the unemployment trend lines have been stable or declining.

Figure 66 Unemployment trends (updated for March 2018)



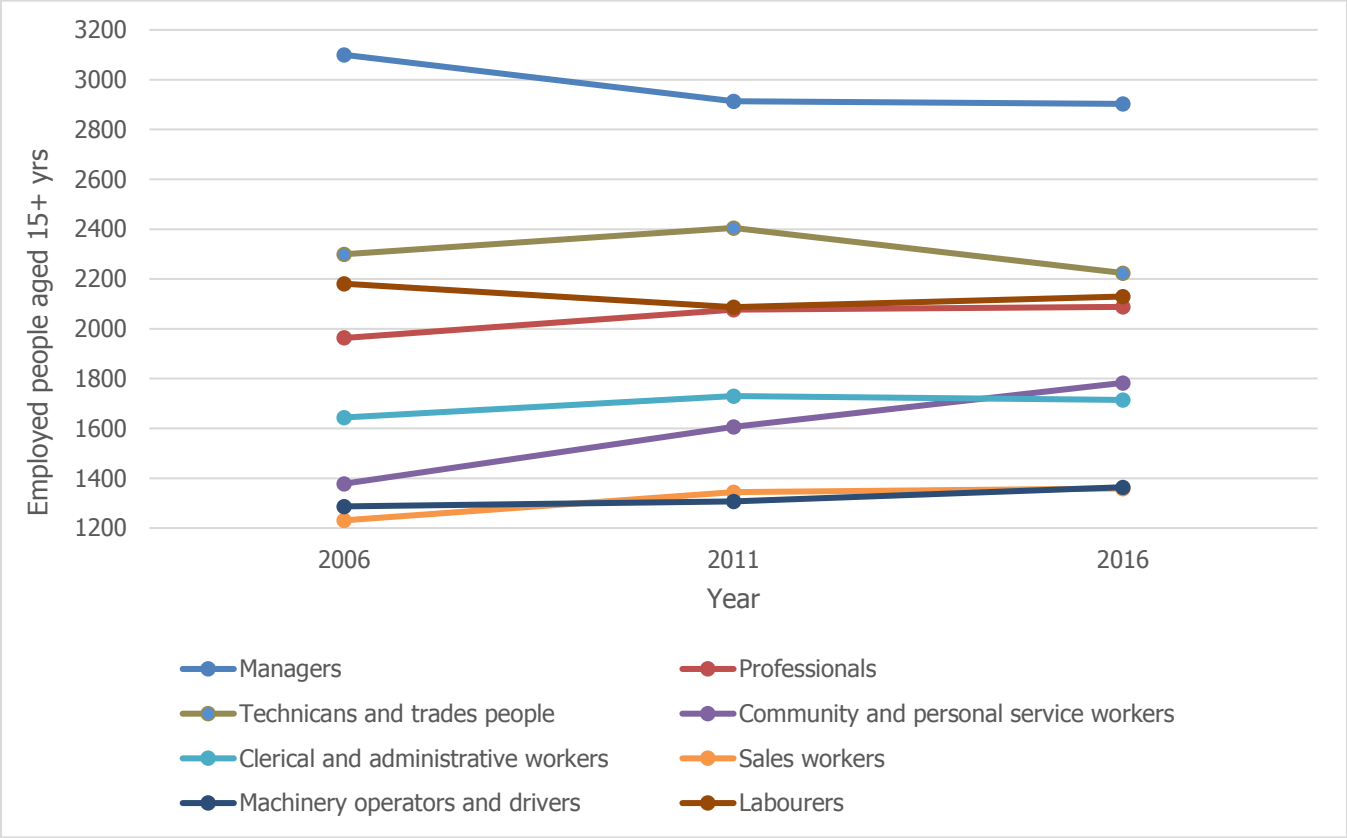
Source: (Business 2018)

Occupation types

Figure 67 shows that across the area of social influence, the most common occupation is managers (18.1%), which declined through 2006 but remains stable since 2011. The number of managers in the area of social influence remains higher than the NSW average (13.5%). The second most common occupations are technicians and tradespeople (14%) and labourers (14%) which have both fluctuated but are still slightly higher than the NSW average (12.7% and 8.8% respectively). The largest increase in occupation has been in community and personal service workers (11%), rising to a level slightly above the NSW average (13.8%).

This indicates that generally workforce occupations are balanced between skilled and unskilled occupation types.

Figure 67 Occupation trends



Source: ABS Census Community Profile time series, combined LGAs

Income and housing costs

Table 42 shows that across the area of social influence, median weekly incomes are lower than the NSW average, particularly in the Snowy Valleys LGA. Overall, there are higher proportions of people in low income households (5%+ above the NSW average), and significantly lower proportions of people living in high income households (8%+ below the NSW average).

Table 42 Household income

2016	Snowy Monaro Regional LGA	Snowy Valleys LGA	NSW
Median personal weekly income	$675	$577	$664
Median family household income	$1,596	$1,418	$1,780
Median household income	$1,200	$1,120	$1,486
Low income households	24.2%	27%	19.7%
High income households	10.1%	7%	18.7%

Source: ABS Census Quickstats, combined LGAs (median incomes) and gross weekly incomes (less than $650 or more than $3,000)

One of the largest weekly expenses for families is mortgage and rent payments. As shown in Table 43, median rent and mortgage costs are significantly lower than the NSW average, and therefore even though the area has lower than average median incomes, there are relatively low numbers of people in the area of social influence experiencing rental stress or mortgage stress.

Table 43 Rent and mortgage payments

2016	Snowy Monaro Regional LGA	Snowy Valleys LGA	NSW
Median rent	$220	$180	$380
Households in rental stress	7.4%	6.6%	12.9%
Median monthly mortgage	$1,300	$1,300	$1,986
Households in mortgage stress	5.2%	4.3%	7.4%

Source: ABS Census Quickstats, combined LGAs (Households where rent/mortgage payments are less/greater than 30% household income)

Assessment of economic capital

The area of social influence has both a high labour force participation rate and high proportions of people who depend on government pensions for their main income.

Arising from existing economic capital, the area of social influence is likely to be vulnerable to any changes the project may impact in relation to:

» cost of living pressures for low income households.

The area of social influence is likely to exhibit a level of adaptive capacity arising from their economic capital assets, namely:

» comparatively low rental and mortgage costs

» the township of Cooma has the highest number of people in the labour force who indicate they are currently seeking employment.

It is likely that existing economic capital capacity could best be enhanced and managed by:

» addressing unemployment rates in some areas, particularly understanding underlying decreases in management and trades and technician occupations

» encouraging income equity by decreasing proportions of people on low weekly incomes.

"If I want to go by a CD, or shoes, there's nowhere to go- those sort of creature comforts: where's the middle of the range clothing stores? When I first came here, Grace Brothers was still here."
- Focus group participant

"I think the shopping online is killing the small shops" - Focus group participant

D-2-4 Human capital

Human capital refers to the levels of knowledge and skill, formal education of the general population as well as their health and wellbeing.

Availability of human capital

As a regional area, the area of social influence is sparsely populated, with the largest towns of Cooma and Tumut having total populations of less than 7,000 people, and the combined population of both LGAs being less than 35,000 people.

Table 44 shows that the population of Cooma has been relatively stable, although the overall Snowy Monaro Regional LGA has increased slightly over the past decade (likely attributable to growth at the township of Jindabyne). Tumut's population has also been stable, as is the overall population of the Snowy Valleys LGA.

Importantly, the area of social influence has a slightly different age profile to the NSW average. Across all areas, the number of people aged under 25 years has been declining to proportions that as of 2016 sit slightly below the state average, while the proportions of people aged over 65 years has been increasing to proportions 3 to 6% higher than the NSW average.

Table 44 Population size and age characteristic trends

	2006			2011			2016		
Place	**No**	**% <25 yrs**	**% >65 yrs**	**No**	**% <25 yrs**	**% >65 yrs**	**No**	**% <25 yrs**	**% >65 yrs**
Cooma	6,587	32.5	17.9	6,301	30.5	19.8	6,379	26.9	23.3
Tumut	5,925	32.6	17.5	6,086	32.6	18.3	6,154	30.3	22.3
Snowy Valley LGA	19,450	31.2	14.3	19,691	30.9	16.1	20,218	28.2	19.2
Snowy Monaro LGA	14,329	30.8	16.9	14,293	30.4	18.9	14,395	28	22.2
NSW	**-**	**31**	**16.2**		**32.1**	**14.7**	**-**	**31**	**16.2**

Source: ABS Census Community Profile time series

Across the area of social influence, around 30% of people are attending an educational institution. As shown in Table 45, there is:

» slightly lower than average attendance at pre-school

» lower than state average attendance at non-government primary and secondary schools, and corresponding higher levels of attendance at government schools. This is likely to relate to a lower availability of non-government schools in the area.

» significantly lower than average attendance at university, likely to be due to these students moving away from the area to pursue further education at this level.

Table 45 Education institution attending

Educational institution attending	Snowy Monaro Regional LGA		Snowy Valleys LGA		NSW
	Number	**%**	**Number**	**%**	**%**
Preschool	303	4.9	242	5.6	5.7
Primary school: Government	1,231	19.8	866	19.9	18
Primary school: non-government	390	6.3	307	7	8.2
Secondary school: Government	806	13	622	15.2	11.6
Secondary school: Non-government	377	6.1	153	3.5	8.5
Tertiary: Technical or further education	385	6.2	272	6.2	6.2
Tertiary: University	430	6.9	192	4.4	16.2

Source: ABS Census 2016 Quickstats

Indicators of human capital

Educational attainment

Levels of education and skills in the area of social influence are a key determinant that supports health, wellbeing and economic activity. Table 46 shows that across the board there are lower levels of overall educational attainment, with the majority of people having school qualifications only. For those with post-school qualifications, the rates of

people with diploma or certificate level training is slightly above the state average, however rates of people with bachelor and above training is approximately half the NSW average. This supports the sentiment expressed during community consultation that people generally move to larger regional towns or to cities to pursue university study, and that once qualified, there are few locally available high-skilled jobs.

Table 46 Highest levels of education attainment

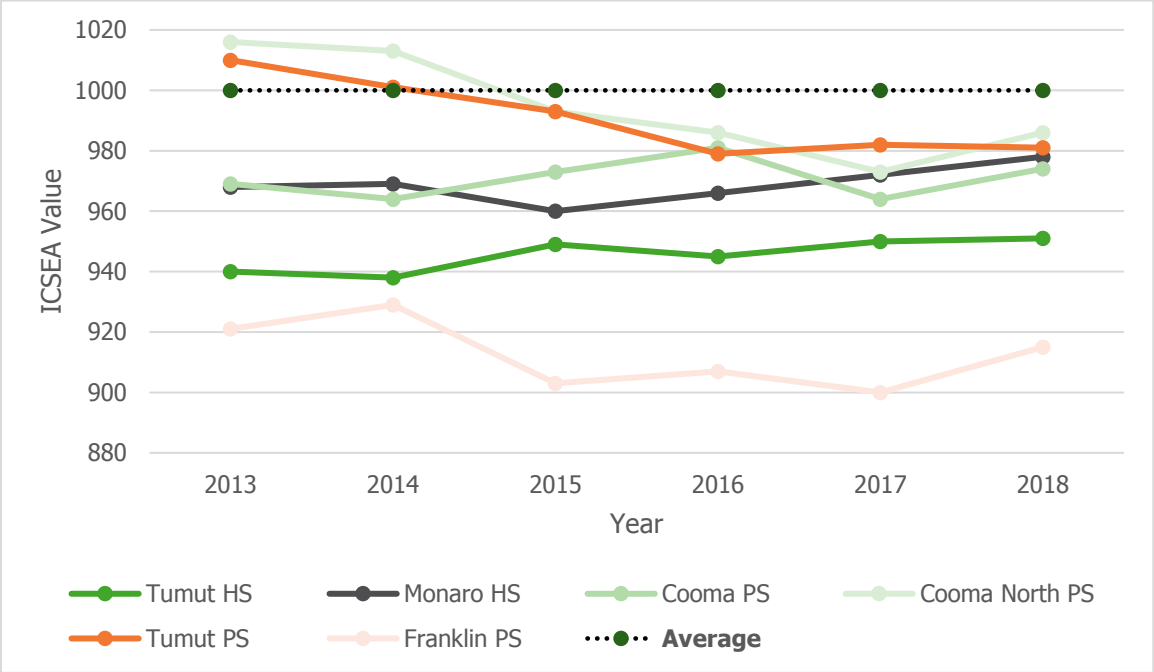
	Year 12 or below (incl. no education)		Diploma or Certificate levels		Bachelor Degree and above	
Place	**No**	**%**	**No**	**%**	**No**	**%**
Cooma	2,172	40.2	1,426	26.3	671	12.4
Tumut	2,298	46.2	1,245	25.0	463	9.3
Adaminaby	91	52.2	52	29.9	13	7.5
Talbingo	63	33.0	74	38.7	20	10.5
Tumbarumba	591	49.4	300	25	93	7.8
Batlow	417	48.8	204	23.8	78	9.1
Snowy Valleys LGA	5,343	45.5	3,065	26	1,136	9.7
Snowy Monaro LGA	6,343	37.7	4,960	29.6	2,495	14.9
NSW Average	-	39.4	-	23.8	-	23.4

Source: ABS Census 2016 Quickstats

School performance

The Index of Community Socio-Educational Advantage (ICSEA) is a scale which allows for fair and reasonable comparisons among schools. As shown in Figure 68, all government schools in the area of social influence exhibit stable or declining Government School ICSEA trends, below the national average which is set at 1,000. While not a measure of academic performance, this measure supports the view that schools in the area have lower levels of attendance by students with educational advantage. In focus groups, some participants expressed that due to limited choice in local secondary level education facilities, some parents prefer to send their children to boarding school rather than attend local high schools.

Figure 68 Government school ICSEA trends



Source: (Australian Curriculum - Assessment and Reporting Authority 2019)

Population health

Levels of physical and mental health are important indicators of social wellbeing.

The area of social influence is serviced by two local health districts (LHD): Tumut and surrounds fall within the Murrumbidgee LHD, and Cooma and surrounds fall within the Southern NSW LHD (shown in Figure 69 below).

Figure 69 Murrumbidgee and Southern NSW Local Health District areas

Source: Health Stats NSW

For most categories shown in Table 47 below, health data indicates similar or higher health needs compared to the NSW average throughout the area of social influence. The Snowy Valleys LGA in particular exhibits significantly higher hospitalisation rates across a number of causes.

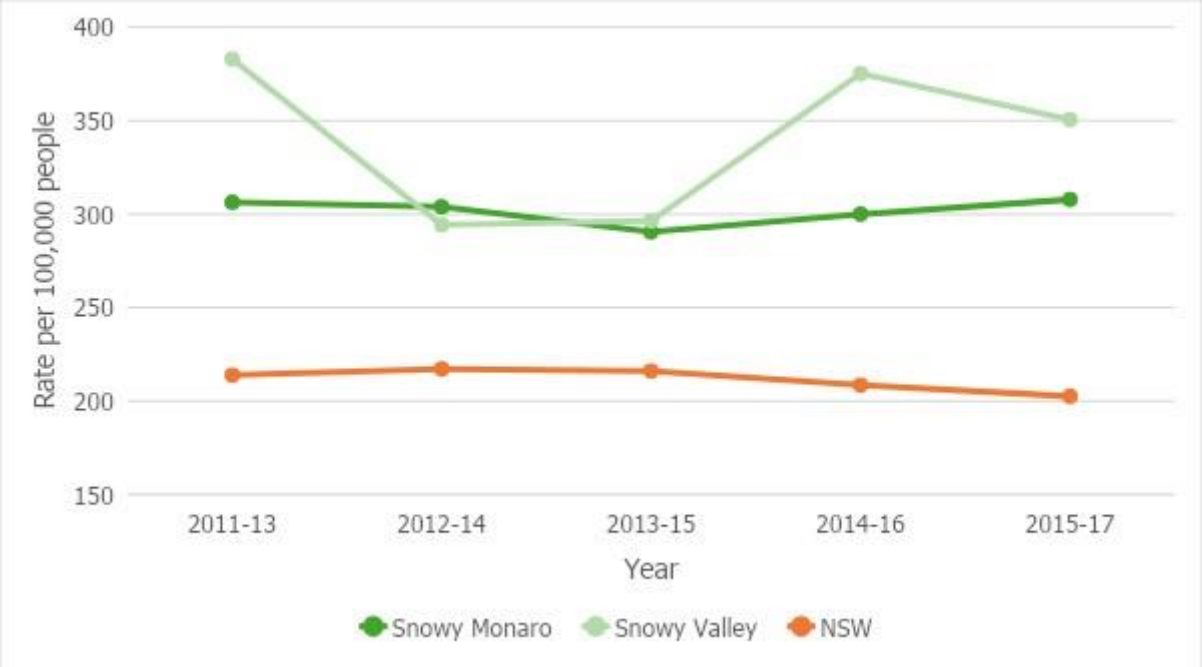
Table 47 Spatially adjusted rates per 100,000 people, 2016

	NSW	Snowy Monaro	Long term trend	Snowy Valley	Long term trend
Deaths, all causes	537.7	568.0	Stable +30.3	718.8	Rising +181.1
Hospitalisations, all causes	35,278.8	30,237.8	Lower -5,041	46,654.2	Significantly Higher +11,376
Hospitalisation for fall related injuries	925.8	967.5	Slightly higher +92.6	1,040.5	Slightly Higher +114.7
Influenza and pneumonia hospitalisations	344.2	390.1	Slightly higher +45.9	527.3	Higher +183.1
Diabetes as principal diagnosis for hospitalisation	148.3	180.6	Slightly higher +32.3	231.4	Higher +83.1
Intentional self-harm hospitalisations	142.6	171.5	Higher Female +90.2	206.3	Higher Female +113 Male +20.9
Smoking attributable hospitalisations	670.8	478.9	Lower -191.9	1,104.2	Higher +433.4
Smoking attributable deaths	71.1	75.3	Slightly higher +4.2	79.4	Slightly higher +8.3
Alcohol attributable hospitalisations	580.6	516.1	Slightly lower -64.5	671.1	Slightly higher +90.5
Alcohol attributable deaths	18.1	21.9	Slightly higher +3.8	20.7	Slightly higher +2.6
Burn injury hospitalisations	31.0	42.6	Slightly higher +11.6	54.4	Significantly higher +23.4
Injury and poisoning hospitalisations	2200.8	2869.7	Slightly higher +668.9	3,336.7	Significantly higher +1135.9
Motor vehicle crash hospitalisations	202.5	307.8	Higher +105.3	350.5	Significantly higher +148

Source: HealthStats NSW

Of most concern is consistently higher rates of motor vehicle crash hospitalisations, shown in Figure 70 below. In focus groups participants observed that road crashes increase substantially during tourist peaks with visitors often unfamiliar with the roads, with long distance driving or with managing variable weather conditions. Long distances and variable weather conditions also affect the ability of ambulance services to respond promptly to emergency situations. There was a widely held view in community consultation that local hospitals cannot 'cope' with serious accidents, and that in these incidences there is medical evacuation by road or helicopter to larger hospitals. Consultation with NSW Health representatives confirms this is standard, and preferred, procedure in regional areas across NSW.

Figure 70 Motor vehicle crash hospitalisations



Source: Health Stats NSW http://www.healthstats.nsw.gov.au/

> *"Ambos is our issue: My wife had accident, and triple zero called me wanting to know how far away I was because it was going to take them one hour to get there [to her]." - Focus group participant*
>
> *"It's busier at hospital during tourist peaks- emergency department demand triples, with all kinds of accidents. A lot of it is because they can't get into local GP's they come to us [at the hospital]." - Focus group participant*
>
> *"There's some dangerous black spots [dips, snow, rain puddles, curves, slope, no verges]: especially for people who don't know our roads or drive too fast, yeah there's more crashes in winter but near misses are always very common." - Focus group participant*

During community consultation, people frequently expressed that access to medical services is a key concern. There were very mixed views on the availability of getting a same day medical appointment with a GP, and similarly differing views on the staffing capacity of local hospitals. Attracting and retaining quality doctors and nurses was seen as a key issue, with high turnover contributing to people's experience of insecure long-term medical attention.

The ageing population was understood as a key risk to exacerbating this issue, with a perception that there is a lack of planning for residential aged care or home care options. As shown in Table 48, across the area of social influence there are currently higher rates of aged care places for people who can no longer live independently in their own homes.

Also shown in Table 48, people in the area of social influence have similar rates of access to private health insurance which can potentially increase access to a range of health services. As there are no private hospitals located in the area of social influence, it is unlikely that this alleviates pressure on public inpatient facilities. It may assist with ancillary health services, or elective health services undertaken in other cities such as Wagga Wagga or Canberra.

Table 48 Other health indicators

	Cooma	Cooma region	Tumut	Tumbarumba/ Tumut Region	NSW
Residential aged care places per 1,000 people aged 70 and over (June 2016)	109.6	12	144.5	43.5	82.4
Number of people (18yrs+) with private health insurance hospital cover (modelled estimates 2014-15)	42.4	51	41.5	47.1	43.3

Source: PHIDU data. NSW figures are Rest of NSW i.e. exclude Greater Sydney.

Disadvantage

IRSAD (the Index of Relative Socio-economic Advantage and Disadvantage) assesses information regarding social and economic factors which contribute to relative advantage and disadvantage. These include income, level of education completed, employment type, internet connection, unemployment, family composition and housing overcrowding. IRSAD deciles are divided into 10 even groupings with 1 representing the lowest scoring 10% and 10 the highest scoring 10%. The IRSAD deciles for select areas are shown in Table 49 below.

Based on 2016 census data, the Snowy Monaro Regional LGA was ranked within the middle 10% of LGAs in NSW while the Snowy Valleys LGA was ranked in the bottom 20%.

Of the townships within the area of social influence, the most disadvantaged area was Tumut, with an IRSAD decile of 2, while Cooma and Tumbarumba were more advantaged than Tumut but still ranked in the lowest 30%. The region nearby to Cooma, such as Jindabyne and Berridale, are comparatively more advantaged.

Table 49 Index of relative socio-economic advantage and disadvantage

Area	Index of Relative Socio-economic Advantage and Disadvantage	Index of Economic resources	Index of Education and occupation
Snowy Monaro (LGA)	**7**	**7**	**8**
Cooma	3	3	4
Cooma Region	6	8	6
Jindabyne-Berridale	6	7	7
Snowy Valleys (LGA)	**4**	**5**	**3**
Tumut	2	3	2
Tumut Region	4	6	4
Tumbarumba	3	5	3
Gundagai	3	5	2

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

Assessment of human capital

There are comparatively low levels of human capital available within area of social influence. Population growth is being impacted by broad population ageing trends.

The area of social influence is likely to be vulnerable to any changes the project may cause in relation to:

» further lowering of education quality, attendance at education institutions or educational attainment

» worsening of hospitalisation rates

» households living with relative socio-economic disadvantage.

The area of social influence is likely to exhibit a level of adaptive capacity arising from their economic capital assets, namely:

» reasonable availability of lower skilled workforce, particularly in Cooma.

It is likely that existing human capital capacity could best be enhanced and managed by:

» increasing access to university level qualifications

» provision of more local jobs requiring higher educational qualifications

» programs and services that promote preventative health including reducing risk taking behaviours

» programs that address socio-economic disadvantage

» retraining opportunities for people in low skilled jobs.

D-2-5 **Social capital**

Social capital refers to how individuals, groups, organisations and institutions within communities relate to each other. It is a very broad category that captures the level of community cohesion as a core asset to creating broad social wellbeing. While measurements of social interaction and cooperation can be difficult to quantify, there are ways of capturing levels of community involvement such as participation rates, as well as indicators of when social cohesion is compromised, such as crime rates.

Availability of social capital

The community consultation activities held for this study were the primary method of understanding what common sets of beliefs and norms were held by groups within the area of social influence (see Annexure B-2-1). Themes were identified where there were high levels of agreeability and convergence of expressed views.

Regardless of the length of time people had lived in the area, people reported that the social environment of the area of social influence was friendly and supportive, with positive terminology used to describe the sense of neighbourliness between people and families. Many stories were told of how people in the community help each other out, particularly in times of adversity. Community members expressed pride in this behaviour as it reflected their self-identification with a 'country' mentality.

> *"It's a country mentality: If you're going to get sick, do it in a small country town. If there's a fire, if there's some disaster in your life, do it in a small country town. If you need someone to back you, someone to hold you up, someone to hold your hand when things get tough- country town." - Focus group participant*
>
> *"If someone needs help, the community will jump in and help." - Focus group participant*
>
> *"Community involvement, country involvement, it's just the best, can't beat it, we're close knit, knitted together. When times get tough, we'll all stand up and have a crack." - Focus group participant*

People viewed their respective townships as highly desirable areas to raise young families due to the relatively good access to shops, schools, open space, affordable housing and relaxed pace of life when compared with cities.

Little concern was expressed regarding general feelings of safety in the community, with the perception that people look out for each other extending to good passive surveillance, and an expectation that neighbours look out for each other. Residents in the Tumut area were an exception in that they reported feeling some level of concern about opportunistic crimes, for example recent instances of stealing and burning out of motor vehicles.

Overall, people felt that the level of policing in communities has been in slow decline in line with gradual population decline, whereby a permanent police presence particularly in smaller villages no longer exists. It was expressed

that many minor crimes may go unreported as there is a sense that the police force is stretched in their ability to respond to incidents in outlying villages, so people may not bother to report them.

The main identified threat to community cohesion across the area of social influence arises from transient visiting populations. Focus group participants cited examples of being alert to 'nuisance' incidents during holiday season where tourists sometimes stay up late making noise to an extent that it interrupts the quiet enjoyment of residents. It was noted that snow season is a particular peak time for poor behaviour of tourists engaging in rowdy or risk-taking behaviour such as public drunkenness. Importantly, participants qualified their stories with expressions of tolerance that this was an inevitable downside of a visitor-based economy, which their townships depend on for their viability.

> *"This time of year, we leave because [the tourists] make so much noise, they have no respect for locals." - Focus group participant*

> *"We need more police patrolling at night- that's when the undesirables come out more, out doing drug deals getting high stealing cars burning them- every week it's happening." - Focus group participant*

Indicators of social capital

Community strength

Community strength indicators measure how people feel about aspects of the community in which they live, and their participation in opportunities to shape their community. Table 50 shows relevant findings from the ABS 2014 General Social Survey which asks a range of questions aimed at assessing positive and negative aspects of community strength (people aged over 18 years only). It shows that across the area of social influence, positive aspects of community strength were either the same or above the NSW average, with particular strength exhibited in the Cooma region. For negative aspects, Tumut displayed some weakness, with indicators below the NSW average on questions such as feeling safe walking alone and experiencing discrimination.

Table 50 Community strength indicators

Rate per 100 people, 2014	Cooma	Cooma region	Tumut	Tumut Region	NSW
Voluntary work for an organisation or group (2016, per cent population 15yrs+)	22.2	26.7	21.2	28.3	20.8
Estimated number of people aged 18 years and over who did unpaid voluntary work in the last 12 months through an organisation	40.8	46.1	34.2	44.4	34
Estimated number of people aged 18 years and over who are able to get support in times of crisis from persons outside the household	94.2	94.5	93.7	94.1	93.8
Estimated number of people aged 18 years and over (or their partner) who provide support to other relatives living outside the household	31.6	30.7	31.3	31.6	30.7
Estimated number of people aged 18 years and over who felt very safe/safe walking alone in local area after dark	60.1	74.1	41.6	68.2	55.9
Estimated number of people aged 18 years and over who disagree/strongly disagree with acceptance of other cultures	4.6	3.6	6.0	5.7	5.4
Estimated number of people aged 18 years and over who, in the past 12 months, felt that they had experienced discrimination or have been treated unfairly by others	19.7	18.7	20.2	18.9	19.5

Source: PHIDU data. NSW figures are Rest of NSW i.e. exclude Greater Sydney.

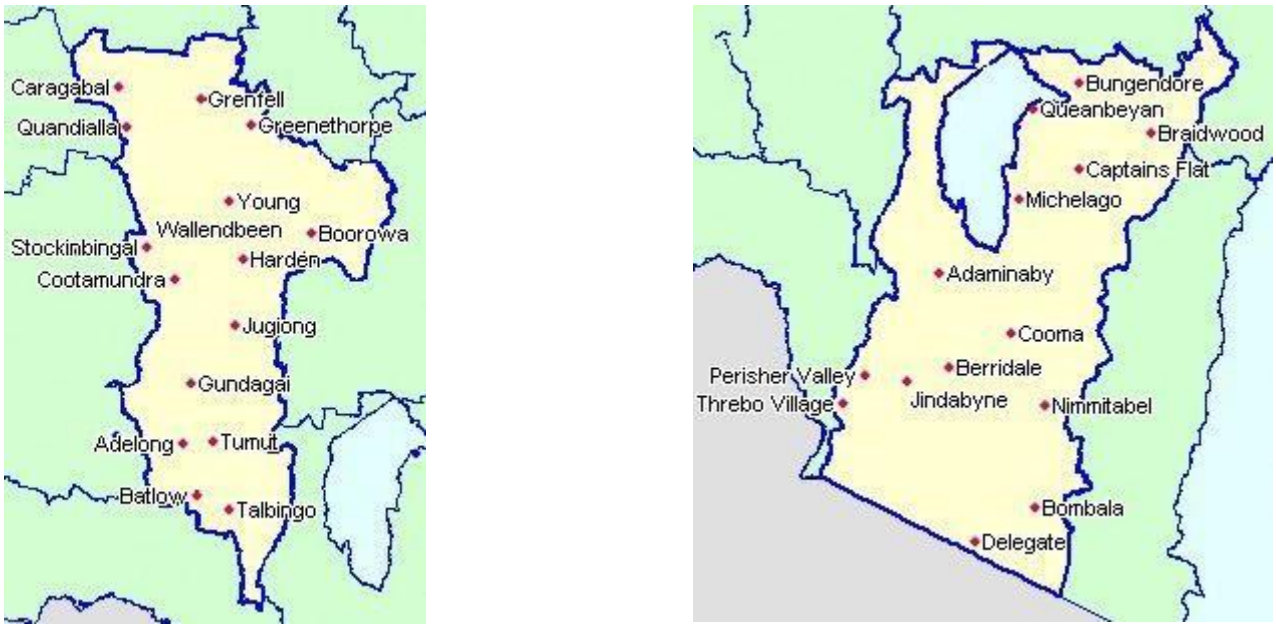
Crime levels

Crime rates are a useful indicator of levels of social capital, noting that only crime that is reported can be measured. In essence, crime works against social capital by damaging relationships and trust between individuals, groups and organisations within communities.

The area of social influence is serviced by two southern region police areas: the Riverina police district (District office located at Wagga Wagga) and the Monaro police district (District office located at Queanbeyan) shown in Figure 71. As previously mentioned, during community consultation there was a perception expressed that the size of this police area and the physical distance between stations is a barrier in the ability of police to patrol to prevent crimes from occurring, particularly at night time.

> *"You don't bother calling [the police] because 90% of the time they don't respond and if they do, by the time they get here [the incident] has finished happening anyway." - Focus group participant*

Figure 71 Cootamundra and Monaro Local Area Command police stations



Source: (Australian Police 2019)

Based on data collected by the Bureau of Crime Statistics and Research (BOSCAR), the most frequent crime committed in Snowy Monaro Regional LGA between April 2017 to March 2019 was malicious damage to property (732.4 per 100,000 people), similar to the NSW rate of 687.5 per 100,000 people. Over the past five years, the Snowy Monaro Regional LGA experienced mostly stable or declining crime trends with the exception of:

» domestic violence relates assault

» trespass.

The reported rate of liquor offences (392.2) was more than double the NSW rate of 144.9.

Malicious damage to property was also the most common crime in Snowy Valleys LGA with a rate of 1,236.9 incidents per 100,000 people compared to 737.8 incidents per 100,000 people across NSW. Over the past five years, the Snowy Valleys LGA experienced mostly stable or declining crime trends with the exception of:

» break and enter

» steal from motor vehicle

» fraud.

It is important to note that while an area may have a higher crime rate for a specific crime, it does not necessarily mean more individual incidents are recorded - rather the rate of individual incidents relative to the population.

Table 51 below shows indicators of the five most common crimes committed across the area of social influence.

Table 51 Five most reported incidents of crimes October2017 to September 2018

	2-year trend	5-year trend	Rate per 100,000 population	NSW – rate per 100,000 population
Snowy Monaro Regional LGA				
Malicious damage to property	Stable	Stable	732.4	765.8
Intimidation, stalking and harassment	+54.7%	Stable	480.2	407.2
Non-domestic violence related assault	Stable	Stable	392.9	414.7
Liquor offences	Stable	Stable	383.2	149.8
Other theft	Stable	Stable	329.8	351.7
Trespass	+8.9%	+12.6%	295.9	128.7
Snowy Valleys LGA				
Malicious damage to property	Stable	Stable	1,113.1	765.8
Steal from motor vehicle	-36.7%	+24.2%	682.9	490.5
Break and enter dwelling	Stable	+34.1%	662.4	350.9
Intimidation, stalking and harassment	Stable	+11.2%	573.6	407.2
Other theft	Stable	Stable	566.8	351.7
Domestic violence related assault	Stable	Stable	430.2	376.3

Source: (BOSCAR 2019)

In relation to some focus group participants perceptions that Tumut is vulnerable to crime, BOSCAR 'hot spot' maps shown in Figure 72, Figure 73 and Figure 74 support the view that some areas are affected by incidences of opportunistic crime.

Figure 72 Tumut incidents of malicious damage to property

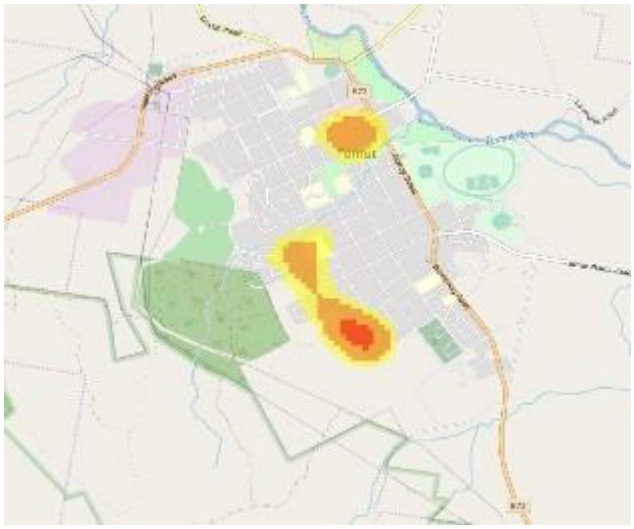


Figure 73 Tumut incidents of motor vehicle theft

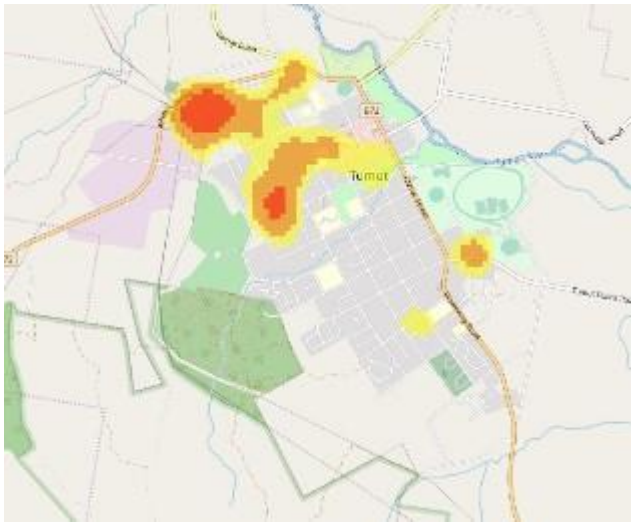
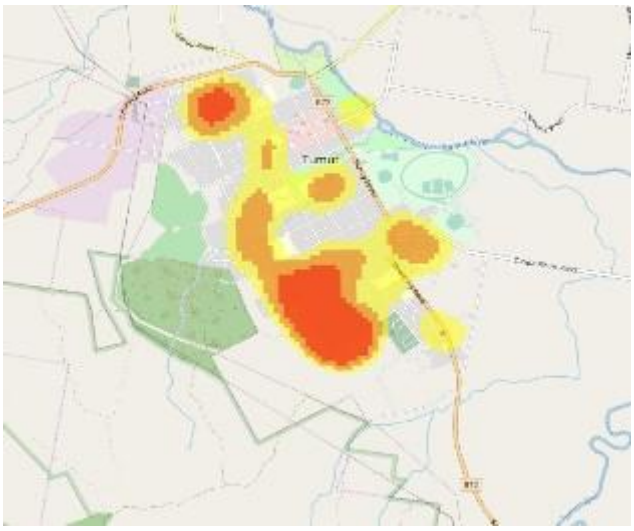


Figure 74 Tumut incidents of theft - break and enter dwelling



Source: BOSCAR crime hot spot maps from October 2017 to September 2018

Assessment of social capital

There is generally high level of social cohesion across the area of social influence.

The area of social influence is likely to be vulnerable to any changes the project may cause in relation to:

» lower levels of trust in visiting, transient populations

» possible underreporting of minor, 'nuisance' crime

» experience of 'hot spot' crime pockets in some areas, particularly liquor offences and opportunistic crime such as malicious damage.

The area of social influence is likely to exhibit a level of adaptive capacity arising from their social capital assets, namely:

» willingness to participate in volunteering activities

» culture of looking out for neighbours and offering to help in times of adversity

» strong sense of community and pride in shared history.

It is likely that existing social capital capacity could best be enhanced and managed by:

» increasing preventative crime programs and police visibility.

D-2-6 Political, cultural and spiritual capital

Availability of political, cultural and spiritual capital

Understanding the strength of the political institutions within the area of social influence is important as they play a crucial role in enabling communities to interact and cooperate, consequently contributing to or compromising their resilience.

Understanding the shared stories and experiences of the social are of influence also assists to establish the beliefs and values held in high regard by communities. These cultural values can influence how sensitive communities may be to social impacts that disrupt those shared experiences.

The major recent historical event that has contributed to dominant narratives about the area of social influence was the construction of the Snowy Scheme between 1949-1974. Aside from the construction works, this event is strongly associated with overseas migration of workers which had a profound effect on the cultural mix of Australia. Over 100,000 people from over 30 countries worked on the scheme during its construction.

> *"That's how Khancoban started: for the Snowy. So that the workers could be close [to the project site]. But in those days, they didn't have [DIDO and FIFO], and so Cooma boomed, we had night clubs for god's sake, and like 17 pubs, it was amazing …but I didn't think about the fact that [for Snowy 2.0] the main workers might not live here- I just assumed, wrongly perhaps, that they would." - Focus group participant*

Indicators of political, cultural and spiritual capital

Federal level governance

The federal electoral division of Eden-Monaro covers almost the entire area of social influence (excepting Canberra, Gundagai and Wagga Wagga). The boundaries of this electoral division have changed little over time. The electorate is historically known as a 'bellwether' seat, meaning the party that wins the seat goes on to win government. This trend (from 1972 to 2013) was overcome in 2016 when the current Federal Member, Hon Dr Mike Kelly (Australian Labour Party) won the seat. Dr Kelly has electorate offices located in Queanbeyan and Bega.

State level governance

There are three key NSW state electoral divisions in the area of social influence, described in Table 52 below.

The electorate of Wagga Wagga was impacted by a by-election in 2018.

Table 52 NSW State electoral districts

District	Towns included	Historical representation	Current member (2016)	Electorate office
Wagga Wagga	Wagga Wagga, Adelong Tumut, Batlow, Talbingo	Liberal Party of Australia (since 1978)	Joe McGirr (Independent)	Wagga Wagga
Albury	Tumbarumba, Cabramurra	Liberal Party of Australia (since 1988)	Greg Alpin (Liberal)	Albury
Monaro	Adaminaby, Cooma, Jindabyne, Queanbeyan-Palerang	Australian National Party (since 2011)	John Barilaro (Nationals)	Queanbeyan

Source: (Commission 2016)

Local level governance

The NSW Government Local Government Council Amalgamations in 2016 have directly impacted the area of social influence. The mergers have resulted in significant changes to electoral boundaries and, consequently, local proportionate representation, outlined in Table 53. In acknowledgment of change impacts, the NSW Government has allocated additional funding to affected areas (Office of Local Government 2018).

Of the affected townships, Tumbarumba exhibits the highest level of grassroots resistance to the merger.

Table 53 Local government areas

Current area	Formerly (pre-2016)	Towns included	Former representation	Current representation
Snowy Valleys Council	Tumbarumba Shire Council	Tumbarumba	Eight Councillors	Nine Councillors (all Independents)
	Tumut Shire Council	Tumut, Adelong, Talbingo, Batlow, Cabramurra	Seven Councillors	
Snowy Monaro Regional Council	Cooma-Monaro Council	Cooma	Nine Councillors	Eleven Councillors (10 Independent, 1 Greens)
	Snowy River Shire	Jindabyne, Adaminaby	Seven Councillors	
	Bombala Shire	NA	Seven Councillors	

Source: (NSW Electoral Commission 2017)

Cultural diversity

Despite the perception that the original Snowy Scheme created high levels of international migration to the area, the most common identified ancestries in the area of social influence were consistently Australian, English, Irish, and Scottish. Only people who were identified as having German ancestry was reported at higher levels that the NSW average. This finding is aligned with analysis of country of birth which shows people who were born in Germany as more common in the Snowy Monaro Regional LGA. Table 54 shows that there is minimal cultural diversity across the area of social influence when compared with NSW averages.

Notably, Table 54 also indicates higher numbers of people who identify as Aboriginal or Torres Strait Islander living in the area of social influence, particularly in Tumut. As Indigenous Australians experience widespread socio-economic disadvantage and health inequality (Australian Institute of Health and Welfare 2017), this can potentially be an indication that pockets within the area of social influence may be more vulnerable to factors such as discrimination and racism, violence, substance abuse and mental illness which negatively affect wellbeing and, in turn, social cohesion.

Table 54 Cultural diversity

	Snowy Monaro Regional LGA		Cooma		Snowy Valleys LGA		Tumut		NSW
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**%**
Aboriginal and/or Torres Strait Islander people	448	2.2	204	3.2	630	4.4	315	5.1	2.9
Country of Birth: Australia	15,637	77.3	4,822	76.1	11,710	81.4	4,926	80.5	65.5

Country of Birth: England	669	3.3	165	2.6	234	1.6	84	1.4	3
Country of Birth: New Zealand	269	1.3	93	1.5	189	1.3	78	1.3	1.6
Country of Birth: Other top responses									
Germany	194	1.0	90	1.4	61	0.4	-	-	0.4
Scotland	90	0.4	-	-	-	-	-	-	0.5
Italy	84	0.4	51	0.8	-	-	-	-	0.7
Netherlands	-	-	40	0.6	-	-	-	-	0.2
South Africa	-	-	-	-	98	0.7	72	1.2	0.6
Philippines	-	-	-	-	49	0.3	31	0.5	1.2
India	-	-	-	-	-	-	24	0.4	1.9

Source: ABS QuickStats 2016

Assessment of political, cultural and spiritual capital

There is generally a high level of political stability across the area of social influence, with the exception of some recent changes to the level of democratisation in local government that has created uncertainty and affected some confidence levels in Council's decision-making process.

There is a strong common shared pride in the relationship between the area of social influence and its Snowy Scheme history as a major nation building project.

The area of social influence is likely to be vulnerable to any changes the project may cause in relation to:

» any deterioration in respect for local aboriginal heritage

» experiences of discrimination based on cultural or language background

» assumptions about Snowy 2.0 based on lived experiences of the original Snowy Scheme.

The area of social influence is likely to exhibit a level of adaptive capacity arising from their political, cultural and spiritual capital assets, namely:

» pride in the Snowy Scheme as a local asset.

It is likely that existing political, cultural and spiritual capital capacity could best be enhanced and managed by:

» ensuring communities within the area of social influence have a direct say in decisions that will affect their way of life

» improving awareness and celebration of cultural diversity, including opportunities to learn skills in working with people from diverse cultural backgrounds

» strengthening memorialisation of the original Snowy Scheme.

D-2-7 Existing understanding of the project

To properly assess social impacts, it is important to know that affected communities are well informed so that they can accurately predict how the Project may cause change to their way of life. Snowy Hydro have been actively engaged in disseminating information and consulting with the community about the Project for some time. The Project has also been regularly reported on within mainstream media (see Annexure C-2).

As part of community engagement activities undertaken for this report, the high degree of community support for the Project was tested during focus groups to establish what baseline understandings of the project were (see

Annexure B-1). The aim of this is to understand any areas where people might require additional information to be properly informed about potential social impacts.

Overall, it was found that understandings of the project were broadly accurate (described in Table 55 below). Most commonly, people tended to overestimate the scale of the workforce and, consequently, had very high expectations of flow on economic benefits.

Table 55 Understandings of the project

Themes people knew a lot about	Themes people were unsure of
Relationship of the project to renewable energy/ energy storage/ energy efficiency/ security	How power outputs compare to other electricity generation types
Presence of a fly/drive in/out workforce Workforce accommodation camps will be provided (Lobs Hole)	Number of workers How many accommodation camps- two to four? Degree of self-containment of workforce onsite
Construction of a tunnel to link dams	How equipment will get to the site How much traffic, particularly trucks, will be on the road
Long term project	Estimated number of years ranged from six to 10 When the project would start, including that there are two stages (Exploratory Works/ Main Works)

It is important to note that broad based community support for the project was strongly linked to overarching views on the general need to increase renewable energy supply and lessen energy production that contributes to climate change. Terms used to describe the project such as 'future proof', 'asset', and 'big infrastructure' suggest that people understand that there is an NSW wide public interest for the Project which overarches any social impacts that may occur in the area of social influence.

Focus group participants as well as review of previous community consultation findings indicate that there are high levels of trust in SHL who are perceived as a company that 'gives back' to the communities in which they are based.

> *"For the country, it'll be a good thing, so even if there's no local benefits it's still a good thing at a national level." - Focus group participant*

> *"I think Snowy Hydro are morally bound to give back to all the communities it affects, like it already does." - Focus group participant*

> *"Snowy HL will trickle something in to the community to keep the community happy- they've got the money, whether it's $20m to build a nursing home or a bike path, they will put the money in somewhere: every single local group will get something- the knitting club, the lion club- the community won't miss out. Snowy will keep the towns happy." - Focus group participant*

Assessment of existing understandings of the project

People across the area of social influence are highly aware of the Project and are likely to have sufficient understanding of Project details to enable them to properly estimate the potential social impacts to their way of life.

The area of social influence is likely to be vulnerable to miscalculating potential social impacts, both positive and negative, from the Project in relation to:

» potential overestimating of the size of the workforce and their dependency on services and facilities within townships

» potential overestimating of overall Project economic benefits to townships

The area of social influence exhibits a level of tolerance towards estimating social impacts arising from:

» high levels of social trust in SHL as project proponent

» support for renewable energy as an inter-generational project benefit (in the public interest)

» appreciation of the relative uniqueness of the Project.

It is likely that understandings of the Project can best be enhanced and managed by:

» SHL continuing to actively implement and manage a comprehensive community engagement strategy

» NSW Government commitment to investing in community projects within the area of social influence to offset potential social impacts.

E Workforce impacts scenario analysis

Key to the assessment of social impacts is projecting the potential population change arising from an influx of Project construction workers to reside in the area of social influence for the duration of their employment contract, either by themselves or with their families.

Our population projections rely on the following variables:

1. total size of construction workforce at different time points across the project, measured as total number of employees provided by Future Generation
2. proportion of construction workers sourced from local area vs out of area, measured as percentage of project jobs filled by people who have a residential address in the area of social influence
3. size of 'on swing' and 'off swing' workforce, measured as proportion of workers living at the accommodation camps. Workforce cannot access onsite accommodation camps as their place of residence when they are 'off swing'.
4. proportion of construction workforce who choose to 'return' to their point of origin (home) while 'off swing', effectively being a DIDO or FIFO worker, measured as percentage estimate.
5. proportion of construction workforce who choose to 'remain' in the area of social influence while off shift, effectively becoming either:
    a. Additional temporary visitor population, staying as individuals for recreational or leisure reasons for intermittent periods over the duration of their work contract
    b. Additional permanent resident population, relocating either as individuals or with their family for the duration of their work contract.

Projections for the operational workforce are analysed separately.

Projections for indirect workforces have not been analysed.

To predict the population change impact, we made the following assumptions shown in Table 56 about each variable based on available evidence, including desktop review, community consultation outcomes and professional experience.

Table 56 Assumptions for variables

Variable		Evidence source	Assumptions
1.	Total size of construction workforce	Future Gen workforce histogram showing fluctuations in total workforce over project timeline	'Peak' workforce chosen to forecast maximum impact (2,000 workers in 2023).
2.	Source of workforce	Future Gen indicating substantial majority workforce will be sourced from locations outside the local area, as far as Western Australia and a small number from overseas (Construction Management Plan) It is estimated a much smaller number of local people will have the appropriate qualifications and skills for the jobs advertised e.g. roles for construction of precast yard in Cooma	We subtract projected local employees from the total construction workforce size as in terms of baseline situation they will already have established housing and social networks in the local area (i.e. no additional impacts).

Variable		Evidence source	Assumptions
3.	Size of 'off swing' workforce	Future Gen information about 'swing' shifts estimating two thirds of the workforce will be rostered on at any one time.	That only 'on swing' workers will be able to reside in onsite accommodation camps, 'off swing' workers will need to either return home or remain in the local area and source local housing to reside (see above)
4.	Workforce that returns home when off swing	Professional assessment and community focus groups in Cooma and Tumut	The further away the employee's 'home' is, the more potential disincentive there is for them to return home (noting travel costs for DIDO and FIFO are covered by their employer).
5.	Workforce that remains in area when off swing	The community focus group participants expect that very high proportions (min. 30% of workforce) will choose to remain in local area while 'off swing, both to take advantage of recreational opportunities or to enjoy a rural lifestyle with their families. These people had experienced impact of temporary workforce in their community before.	The communities in the area of social influence already experience and adapt to significant fluctuations in population during holiday seasons. Cooma and Tumut focus groups felt an additional residential population of at least 1,000 people or more would be needed as a tipping point for them to experience noticeable change (16% population growth rate)
5a.	Workforce that remains as visitor	Professional assessment and community focus groups in Cooma and Tumut. Access to local service availability and recreational opportunities act as potential incentive for workforce to remain in the area when 'off swing'	Fuel and flight costs for workers to return home every three weeks are covered by employer, so travel time is main potential disincentive to return home. Great availability of recreational activities in the area including camping, skiing, fishing Scenic quality of area as attractive place to stay, if not interested in recreation High existing availability of temporary motel and short stay accommodation options Good availability of retail options including proximity to major towns of Wagga Wagga and Canberra

Variable		Evidence source	Assumptions
5b.	Workforce that relocates to local area	Professional assessment and community focus groups in Cooma and Tumut	Reasonable availability of comparatively affordable properties for both rental and purchase Good availability of local infrastructure for children including schools, sporting activities Some availability of job opportunities for partners in local area as well as in larger townships of Wagga Wagga and Canberra

To predict the workforce impacts, we applied these variables to three scenarios shown in Table 57. For assessment purposes, the most likely scenario for the projected population change is highlighted in green.

Table 57 Workforce impact scenarios

Variable		Low scenario	Medium scenario	High scenario
1	Total size of construction workforce	1,000	n/a	2,000 Peak predicted in 2023
2	Source of workforce: local employment	10% local employment	5% local employment	Incidental local employment
Sub total	*Total local area workforce*	**100**	**100**	**0**
2	Source of workforce: out of area employment	90% out of area	95% out of area	100% tout of area
Sub total	*Total out of area workforce*	**900**	**1900**	**2000**
5a	Out of area workforce that relocates to area as permanent residents	10% relocate	15% relocate	30% relocate
Total	*Applies to 100% of out of area workforce*	**90**	**285**	**600**
2	Remaining out of area FIFO/DIDO workforce	810	1615	1400
3	Size of out of area 'off swing' workforce	34%	34%	34%
Sub total	*Applies to remaining out of area FIFO/DIDO workforce*	**275**	**549**	**476**
3	Size of out of area 'on swing' workforce that reside at accommodation camps	66%	66%	66%
Sub total	*Applies to remaining out of area FIFO/DIDO workforce*	**535**	**1,066**	**924**

Variable		Low scenario	Medium scenario	High scenario
4	Out of area workforce that returns home 'off swing'	90% return	85% return	75% return
Subtotal	*Applies to 34% 'off swing' out of area workers only*	**248**	**466**	**357**
5b	Out of area workforce that remain in area as visitor when 'off swing'	10% visit	15% visit	25% visit
Total	*Applies to 34% 'off swing' out of area workers only*	**27**	**82**	**119**

For the projected likely scenario of up to **285 workforce generated permanent residents**, an average family size is then applied to forecast the total additional residential population. Table 58 shows the assumptions behind the development of a household size multiplier

Table 58 Workforce household characteristics

Population characteristic	Australian average	Assumption	Workforce projection
Total families with children	41%	Families with older children (secondary age) are less likely to relocate.	30%
One parent families	*10.4%*	*Workers are significantly less likely to be one parent families with dependent children (as primary carer)*	*5%*
Couples with children	*30.3%*	*Workers are moderately less likely to be part of couples with children*	*25%*
Average number of children per household	1.8	No difference	1.8
Couples without children	25%	Workers are more likely to be a couple who have not yet formed a family or whose children have left home	35%
Lone person	23%	Workers are more likely to be lone person households	30%
Group households and Other	10%	Workers are significantly less likely to be part of other family types (i.e. to relocate with share house mates)	5%
Average household size	**2.55**	**Workforce will have a lower than average household size**	**2 to 2.3**

Table 58 finds that for every 100 workers who relocate, a lower than average household size of between 2 to 2.3 persons per dwelling will result in the generation of a total new residential population of 570 to 656 people.

The demographic profile shown in Table 58 suggests for every 100 workers who relocate, the likely characteristics of this population yield will be:

» 108 people as part of couples or single people with children

» 70 people as part of couples without children

» 30 lone person households

» 5 to 15 people as part of 'other' household types.

Table 59 below applies this household size multiplier to the findings of projected numbers of workers who will relocate themselves or with their families to the area of social influence.

Table 59 Workforce generated population change

Variable	Low scenario		Medium scenario		High scenario	
Total workforce residential impact	90		285		600	
Household multiplier	2	2.3	2	2.3	2	2.3
TOTAL 'new' residents	**180**	**207**	**570**	**656**	**1200**	**1380**

Table 59 shows that a likely workforce relocation range of anywhere between 90 to 600 employees who move themselves or with their families to the area of social influence will yield a total potential new residential population of between 180 and 1,380 people.

To examine the possible distribution of this population impacts (i.e. where in the area of social influence the workers will choose to live/stay), we considered the available access to transport, housing and work opportunities (for partners).

It is assumed that under a medium scenario of the 570 to 656 projected new residents:

» The majority (70%) will move to the eastern side of the area of influence (Cooma, Canberra, Jindabyne)

» A minority (30%) will move to the western side of the area of influence (Tumut, Wagga Wagga)

It is assumed that of the 54 to 231 projected new 'visitor' population under the selected likely medium scenario:

» The substantial majority (90%) will stay within the eastern side of the area of influence (Cooma, Canberra, Jindabyne)

» A minority (10%) will stay within the western side of the area of influence (Tumut, Wagga Wagga)

Table 60 Potential population distribution of relocated workforce resident and visitors

No.	Description	Low	Mid	High
1	**Workforce total 'new residents' population (includes partners and children)**	**570**	**613**	**656**
1.1	70% Eastern side	399	429	459
1.1.1	*70% Cooma and surrounds*	*279*	*300*	*321*
1.1.2	*30% other e.g. Canberra*	*120*	*129*	*138*
1.2	30% Western side	171	184	197
1.2.1	*80% Tumut and surrounds*	*137*	*147*	*157*
1.2.2	*20% other e.g. Wagga Wagga*	*34*	*37*	*40*
2	**Workforce 'off swing' Visitor population (no family multiplier)**	**54**	**160**	**231**
2.1	90% Eastern side e.g. Jindabyne	49	144	208
2.2	10% Western side e.g. Tumut	5	16	23
3	**Total population change impact (whole area of influence)**	**624**	**773**	**887**

To understand if the figures produced in Table 60 constitute a population impact, we considered Burdge's (2004) categorisation of negligible, moderate and major population impacts as per Table 61 below. This method is also used in the Exploratory Works SA.

Table 61 Population impact levels for area of social influence

Key township	Resident population	Negligible <1% (<1% Population)	Moderate <5% (<5% Population)	Major>5% (Population>5%)
Cooma	6,379	<64	<318	>319
Tumut	6,154	<62	<306	>307
Batlow	1,021	<13	<64	>65
Tumbarumba	1,484	<15	<73	>74
Talbingo	226	<2	<10	>11
Adaminaby	210	<2	<9	>10
Jindabyne	2,629	<26	<131	>132
Adelong	943	<10	<49	>50
Gundagai	1,926	<19	<95	>96
Total area of social influence (excludes Wagga Wagga and Canberra)	**20,972**	**Less than 213 people**	**Up to 1,064 people**	**More than 1,064 people**

Given the combined population of Snowy Monaro Regional (20,218) and Snowy Valleys LGAs (14,395) is 34,613 people, a total of 744 new visitors and residents across the area of social influence represents a very low population change of around 2.2%, which is considered between a negligible (less than 1%) to moderate (less than 5%) population change impact.

Applying the population change estimates from Table 59 to the primary townships within the area of social influence as per Table 61 suggests that:

» Up to 773 people as total population change distributed over the whole area of influence will likely be absorbed as a negligible to moderate impact

» Up to 300 new residents moving to Cooma and surrounds will be likely to have a (borderline) moderate population impact

» Up to 147 new residents moving to Tumut and surrounds is likely to have a negligible population impact

Townships that are considered most at risk of moderate population impact of new residential workforce influx are the smaller villages of Adaminaby and Talbingo, and to a lesser extent Adelong and Batlow.

Townships that are considered most at risk of experiencing population impact from visiting 'off swing' workforce is Jindabyne, noting that this township is considered to have a high tolerance ability to absorb the projected additional visiting population estimate of up to 144 people.

Conclusion

Based on the selected medium scenario of up to 613 total new residents being distributed across the total area of social influence, there is likely to be a negligible social impact from residential population change.

Assuming 70% of workforce families who relocate as new residents move to the eastern side of the area of influence, with the majority of these moving to the primary township of Cooma (i.e. 49% of the total new residents),

it is estimated there may be moderate social impacts resulting from residential population change at that location (300 new residents /6,379 existing population x100= 4.7% population change).

Although it is considered unlikely that other townships will experience an influx of new residential populations, it is possible that if larger than expected numbers of workforce relocate to the area, then villages vulnerable to impacts associated with residential population change are:

» potential major impacts on the smaller towns of Talbingo and Adaminaby.

» potential moderate impacts on Adelong, Batlow and Tumbarumba.

Based on the selected medium scenario of up to 160 total new workforce visitors being distributed across the total area of social influence, there is likely to be a negligible social impact from visitor related population change.

Assuming 90% of visiting 'off swing' workforce recreate within the eastern side of the area of influence, with the majority of these staying in the primary township of Jindabyne, it is estimated there may be negligible to minor social impacts resulting from visiting population change at that location.

Areas of social impacts examined incorporating the results of this workforce impacts scenario are:

» housing supply for rent and purchase, or for short stay (both resident and visitor projections)

» transport related impacts (both resident and visitor projection)

» access to hospital services (both resident and visitor projection)

» access to schools and childcare (resident projection only)

» demand for recreation (primarily visitor projection).

F Distributional impact assessment

As per the social baseline context (Annexure D) both positive and negative social impacts for the Project will be experienced differently throughout the geographic area. This section provides a summary of social impacts identified in Chapter 5 that considers the potential geographical distribution of impacts between townships in the area of social influence.

The place-based areas have been presented in order of most to least anticipated impacts.

F-1 Cooma

Cooma is considered the most impacted community across the social area of influence. It will be the headquarters for project operations, the key transport access route and its local economy will be most heavily relied upon to service the project workforce.

Overall, Cooma will both benefit the most, and be burdened the most, as a result of the project. The SIA suggests that while the township has a strong baseline resilience, the length of the project means that this resilience will be tried, particularly as it ramps up to a 'peak' workforce scenario.

While core areas such as housing and employment have been rated as having an extreme social risk, this encompasses benefits as well as adverse consequences.

The assessment finds that Cooma will likely require the most monitoring and mitigations in order to support its ability to cope with change over the life of the project.

Social risk rating			
Low	Moderate	High	Extreme
Culture	Access to recreation	Community cohesion	Residential population change
Health and wellbeing	Aesthetic value and amenity	Demand on access and use of infrastructure, services and facilities	Housing availability and affordability
Surroundings	Decision making systems	Cumulative impacts	Local Employment
Public safety and security	Fears and aspirations		Traffic conditions
Personal and property rights			

F-2 Tumut

Tumut is considered the second most impacted community across the social area of influence. Its location on key transport routes and its access to services and facilities mean it will experience similar impacts to Cooma, but to a lesser degree.

Overall, the SIA suggests that while the township has a strong baseline resilience, it also experiences a higher level of vulnerability in many areas.

The main impacts likely to be experienced in Tumut relate to population change, and local economy changes.

There are many people in Tumut (and surrounding villages) who have been highly impacted by previous social impacts arising from loss of employment or job insecurity, for example as a consequence of closure of the Carter Holt Mill (Tumut and Adelong Times 2019). This contributes to the expectation of job opportunities for local on the project (see section on local employment and fears and aspirations).

Social risk rating			
Low	Moderate	High	Extreme
Culture Health and wellbeing Surroundings Public safety and security Personal and property rights	Access to recreation Aesthetic value and amenity Decision making systems Fears and aspirations Community cohesion Demand on access and use of infrastructure, services and facilities Cumulative impacts	Residential population change Housing availability and affordability Local Employment Traffic conditions	Nil

F-3 Jindabyne

Jindabyne is considered the third most impacted community across the social area of influence. Its location on the main transport routes and its role as a visitor destination mean that it will be indirectly experiencing 'overflow' impacts from Cooma.

The SIA suggests that because Jindabyne is already experiencing a high degree of change arising from population growth, it will be vulnerable to any additional project related impacts on recreation and tourism.

Social risk rating			
Low	Moderate	High	Extreme
Culture Health and wellbeing Surroundings Public safety and security Personal and property rights	Access to recreation Aesthetic value and amenity Decision making systems Fears and aspirations Community cohesion Demand on access and use of infrastructure, services and facilities Cumulative impacts	Residential population change (visitor) Housing availability and affordability Local Employment Traffic conditions	Nil

F-4 Adaminaby

Adaminaby is considered the fourth most impacted community across the social area of influence. For similar reasons to Cooma it is most proximate to project activities and transport routes.

The SIA suggests that while the township has a strong baseline resilience, its small size means that even small changes in housing and the local economy will be felt as a larger degree of impact.

Social risk rating			
Low	Moderate	High	Extreme
Demand on access and use of infrastructure, services and facilities Culture Health and wellbeing	Access to recreation Aesthetic value and amenity Decision making systems Fears and aspirations	Residential population change Housing availability and affordability Local Employment	Traffic conditions

Surroundings	Community cohesion
Public safety and security	Cumulative impacts
Personal and property rights	

F-5 Talbingo

Talbingo is considered the fifth most impacted community across the social area of influence. For similar reasons to Tumut it is most proximate to transport routes.

The SIA suggests that while the township has a strong baseline resilience, its small size means that even small changes in housing and the local economy will be felt as a larger degree of impact.

In addition, Talbingo has one of the strongest cultural identities as a 'snowy town' (see Section D-1-8) creating unusually high community expectations and levels of project interest in this community. Talbingo also is strongly impacted by existing visitor populations, and may be sensitive to the effects of any cumulative impacts on this industry.

Social risk rating			
Low	Moderate	High	Extreme
Health and wellbeing	Culture	Traffic conditions	Nil
Surroundings	Residential population change		
Public safety and security	Housing availability and affordability		
Personal and property rights	Local Employment		
Demand on access and use of infrastructure, services and facilities	Access to recreation		
	Aesthetic value and amenity		
	Decision making systems		
	Fears and aspirations		
	Community cohesion		
	Cumulative impacts		

F-6 Batlow and Tumbarumba

Batlow and Tumbarumba are most likely to be sensitive to social impacts that effect changes to local agribusiness (such as fruit picking).

Social risk rating			
Low	Moderate	High	Extreme
Health and wellbeing	Culture	Traffic conditions	Nil
Surroundings	Residential population change		
Public safety and security	Housing availability and affordability		
Personal and property rights	Local Employment		
Demand on access and use of infrastructure, services and facilities	Access to recreation		
	Cumulative impacts		
Aesthetic value and amenity			
Decision making systems			

Fears and aspirations			
Community cohesion			

F-7 Adelong and Gundagai

Adelong and Gundagai are likely to be indirectly impacted by flow-on effects of social impacts, including those arising from traffic conditions.

Social risk rating			
Low	Moderate	High	Extreme
Health and wellbeing	Culture	Traffic conditions	Nil
Surroundings	Residential population change		
Public safety and security	Housing availability and affordability		
Personal and property rights	Local Employment		
Demand on access and use of infrastructure, services and facilities	Access to recreation		
	Cumulative impacts		
Aesthetic value and amenity			
Decision making systems			
Fears and aspirations			
Community cohesion			

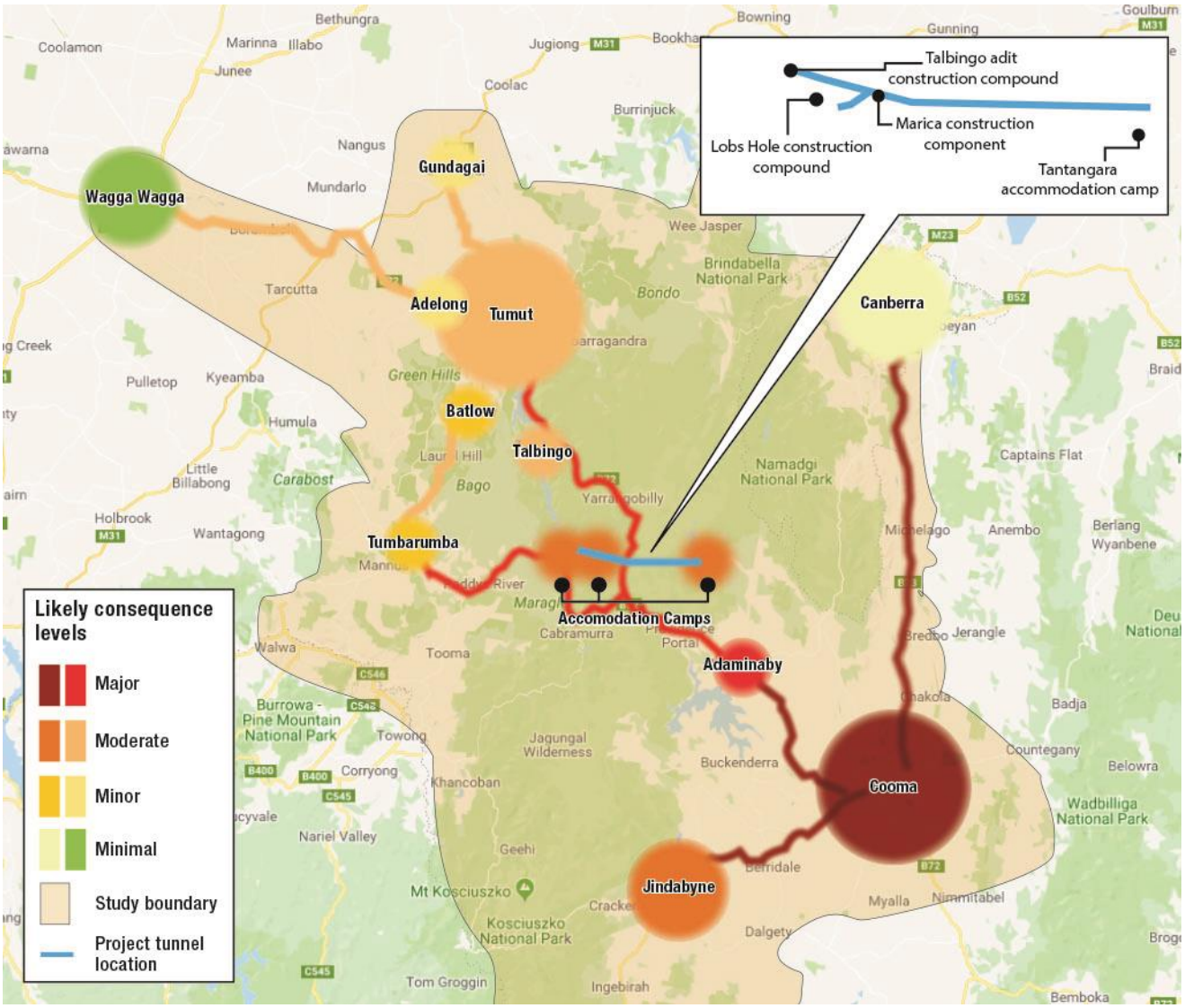
F-8 Canberra and Wagga Wagga

Canberra and Wagga Wagga are considered the least impacted communities across the social area of influence. The higher populations and better access to core infrastructure means their capacity to adapt to change is much higher than the other townships.

The main social impacts likely to be experienced in Canberra relate to traffic. The main social impacts likely to be experienced in Wagga Wagga relate to access to health and medical services.

Social risk rating			
Low	Moderate	High	Extreme
Residential population change	Traffic conditions	Traffic conditions	Nil
Housing availability and affordability	Local Employment		
Health and wellbeing, Surroundings	Demand on access and use of infrastructure, services and facilities		
Public safety and security, Personal and property rights	Cumulative impacts		
Access to recreation, Aesthetic value and amenity			
Decision making systems, Fears and aspirations			
Community cohesion, Culture			

Figure 75 Distribution of social impacts



G Recreational User Impact Assessment

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