
Appendix R

Social impact assessment



Billabong Creek Regulators

Social Impact Assessment

NSW Department of Climate Change, Energy, the
Environment and Water

September 2024



The 3Rivers Joint Venture (3Rivers), a joint venture between Jacobs Group (Australia) Pty Limited and GHD Pty Ltd has been engaged to provide certain Engineering and Approvals Services for the NSW Sustainable Diversion Limit Adjustment Mechanism (SDLAM) program in accordance with the Agreement between 3Rivers and the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) (the client).



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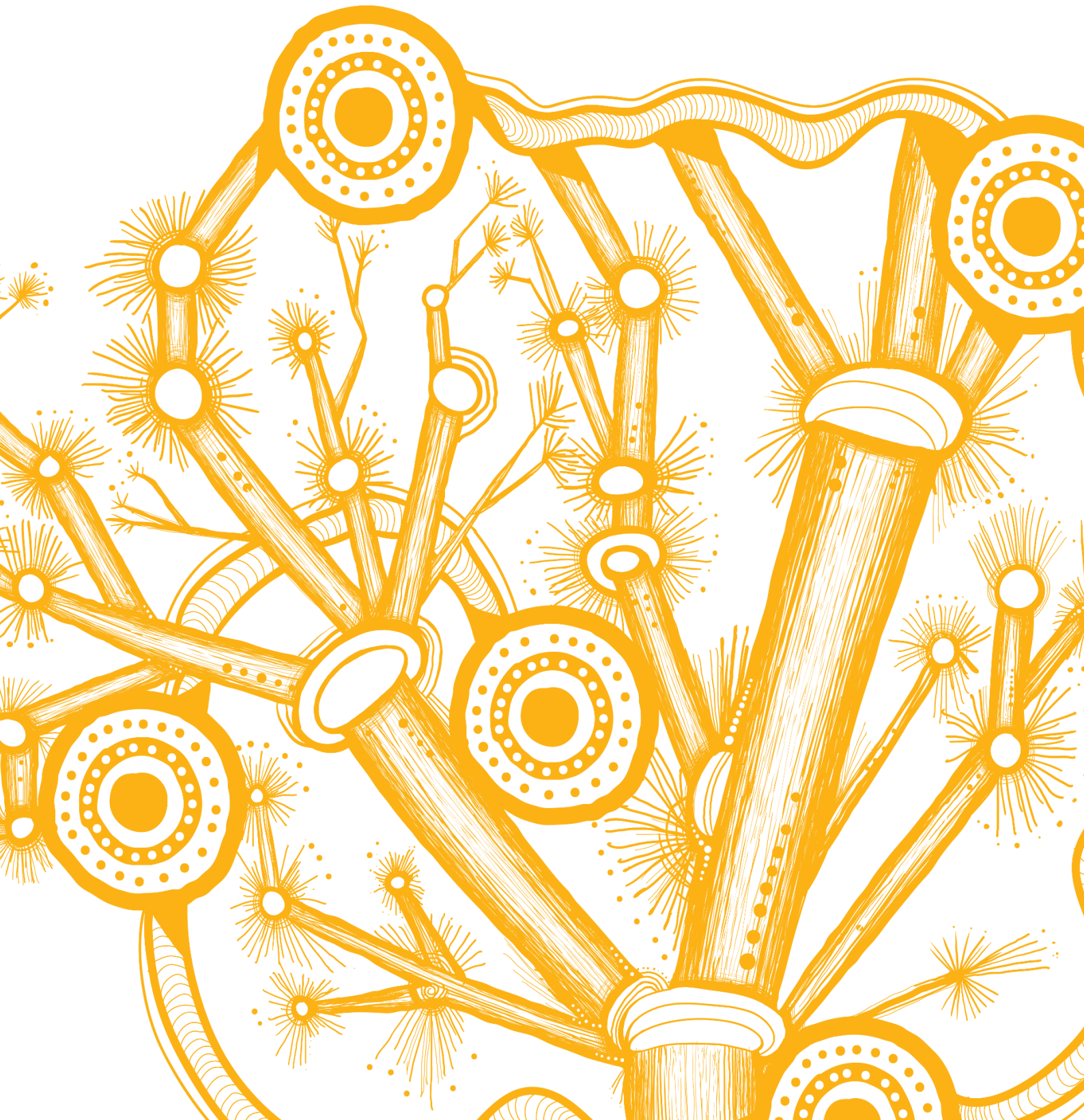
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Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.



Executive Summary

This Social Impact Assessment (SIA) has provided an assessment of the social impacts of the construction and operation of the proposal. The report has identified and addressed the key social impacts associated with the proposal and provides a set of recommended mitigation and enhancement measures. The report satisfies the social impact assessment requirements as identified in the SEARs for the proposal and has been prepared in accordance with the requirements of *Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2021).

The key positive social impacts with the potential to occur during construction and operation are primarily related to procurement opportunities for local and regional businesses, and improved water, creek and environmental conditions.

The key social impacts with the potential to occur during construction and operation are summarised as follows:

- Changes to access for some landowners due to construction vehicles accessing the site. This may be an inconvenience for some landowners and may lead to lost time if access is not appropriately coordinated.
- Temporary reduction in water delivery and availability.
- Temporary disruptions and inconveniences for some nearby residents and users of recreation areas due to changes in access and increased construction traffic.
- Reduced amenity including noise, vibration, dust and visual impacts for users of nearby recreational areas.
- Potential reduced availability of short-term accommodation for tourists due to non-resident workers.
- Loss of local heritage potentially impacting community values through the removal of heritage items (Hartwood Weir).

The key positive social impacts with the potential to occur during operation are summarised as follows:

- Improved water management, delivery and availability contributing to business and economic outcomes, particularly agricultural industries.
- Support the current and future population and communities of surrounding areas through improved water supply, management and security.
- Providing a water infrastructure alternative that reduces the vulnerability of the local community to potential adverse effects of water buybacks.
- Support community and Aboriginal values associated with environmental protection and flows.
- Support the overall health and wellbeing of communities through improved water management and quality.
- Improved access and safety to community and recreation facilities, supporting opportunities for participation in community activities, and active and passive recreation.
- Direct and indirect employment opportunities and regional economic growth, supporting livelihoods and wellbeing.

The positive and negative social impacts identified and assessed in this report would be managed and mitigated through a range of measures, including mitigation measures recommended in other EIS technical papers.

The mitigation measures identified in response to potential social impacts, and to enhance positive impacts are summarised below:

- Communication and Engagement Plan (C&EP) – this will ensure community and stakeholders are kept aware, given accurate and up to date information and provide an opportunity for inputs.
- Ongoing consultation and communication with affected community members including landholders, businesses and community facilities in close proximity to the proposal to notify them about construction activities and access changes.
- Local and First Nation participation initiatives.

Glossary

Term	Description
Anabranch	A section of a river or stream that diverts from the main channel of the watercourse and rejoins downstream.
Efficiency measure	Provide more water for the environment by making water delivery systems for irrigation more efficient. This can include replacing or upgrading on-farm irrigation, or lining channels to reduce water losses within an irrigation network.
Entitlement	The volume of water authorised to be taken and used by an irrigator or water authority; includes bulk entitlements, environmental entitlements, water rights, sales water and surface-water and groundwater licenses.
Environmental flow	Any river flow pattern provided with the intention of maintaining or improving river health.
Environmental water	Water used to achieve environmental outcomes, including benefits to ecosystem functions, biodiversity, water quality and water resource health.
Environmental water requirements	The amount of water needed to meet an ecological or environmental objective.
Fish passage	The ability of fish or other aquatic species to move through an aquatic system.
Fishway	Structures placed on or around constructed barriers (such as dams or weirs) to give fish the opportunity to move past the barrier.
Groundwater	Water occurring naturally below ground level (in an aquifer or otherwise).
The proposal	<p>NSW DCCEEW is proposing to replace two existing weirs along Billabong Creek with new regulators. The existing weirs to be demolished are Hartwood Weir, and Wanganella Weir. These are situated on Billabong Creek within the Yanco Creek system in south-west NSW. It is proposed that each of the regulators would be fully automated and remotely operated from a WaterNSW control room. The key features of the regulators are similar and would include:</p> <ul style="list-style-type: none"> – concrete piers with maintenance bulkhead slots – fixed concrete crests on either side of the central gates – automated layflat gates across the crest of the structure to assist with flow management and downstream fish passage – access from a trafficable deck for maintenance – control house – sheet pile cut-off walls beneath the structure – SCADA control system – a low turbulence ‘key hole’ type vertical slot fishway with allowances for variable headwater to provide upstream fish passage. This design is intended to allow passage for fish from 30 to 100 millimetres long.
Regulated	A water system in which water is stored or flow levels are controlled through the use of structures such as dams and weirs.
Regulator	A gated structure used to actively manage or control the amount of water that flows from one location to another.
Social cohesion	Social or community cohesion can be understood as “the bonds and relationships people have with their family, friends and the wider community. Day to day interactions between people in a community build trust and reciprocity and contribute to cohesion” (ABS, 2010).
Social locality	The study area identified for the social impact assessment based on an understanding the scale and nature of the proposal, the characteristics of affected communities and how positive and negative impacts may be reasonably perceived or experienced by different people.
Stakeholder	Person or group with interest in an issue.

Term	Description
SAL	Suburb and Locality (SAL) (previously known as State Suburbs – SSC) are an ABS approximation of the officially recognised boundaries of suburbs (in cities and larger towns) and localities (outside of cities and larger towns). There are 15,353 SALs covering the whole of Australia without gaps or overlaps.
Vulnerable group	The inability of people to withstand or adapt to change due to characteristics of the group they are a part of. This report considers the following groups: socio-economically disadvantaged persons as identified by the Index of Relative Socio-Economic Advantage and Disadvantage, the elderly and very young, culturally and linguistically diverse people, people who need assistance with core activities such as self-care, movement and communication due to a severe or profound disability.
Weir	A low barrier or dam that is built across a watercourse and is designed to store water, control or alter the flow of water in a creek.

Abbreviations

Abbreviations	Definitions
ABS	Australian Bureau of Statistics
AHD	Australian height datum
CEWH	Commonwealth Environment Water Holder
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water (the proponent), formerly part of NSW Department of Planning and Environment.
DPHI	NSW Department of Planning, Housing and Infrastructure (formerly known as NSW Department of Planning and Environment)
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
GL	Gigalitre
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
km ²	Square kilometres
LEP	Local environmental plan
LGA	Local Government Area
RAP	Registered Aboriginal Party
SAL	Suburb and Locality
SEARs	Secretary's environmental assessment requirements
SEIFA	Socio-Economic Indexes for Areas (SEIFA) includes a range of indexes developed by the Australian Bureau of Statistics to rank areas in Australia according to relative socio-economic advantage and disadvantage.
SIA	Social Impact Assessment

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1. Introduction

1.1 Overview

The NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) is proposing to replace two existing weirs along Billabong Creek with new regulators (the proposal). The two existing weirs to be demolished are Hartwood Weir and Wanganella Weir. These are situated on Billabong Creek within the Yanco Creek system in south-west New South Wales (NSW) (refer Figure 1.1).

These weirs were built in the early 20th century and have been used to regulate flows through Billabong Creek, create weir pools for irrigation and, in the case of Wanganella Weir, provide town water supply. The weirs are currently in states of declining condition and functionality, and are barriers to the movement of fish through the creek. Their condition limits their ability to regulate flows through the Yanco Creek system and leads to inefficiencies in how water is delivered to the environment and irrigators.

The new regulators would be fully automated and remotely operated meaning that operators could control the delivery of water more efficiently. The proposal is needed to improve the operator's ability to deliver the right amount of water to the right place at the right time. The new regulators would also feature fishways to support fish movement past the new structures. WaterNSW would own and operate the new regulators once constructed.

The proposal is subject to environmental and planning approvals in accordance with the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The proposal is State significant infrastructure (SSI), and the Minister for Planning is the approval authority. An environmental impact statement (EIS) is required to accompany the application for approval of the proposal.

1.2 Purpose and scope of this report

This Social Impact Assessment (SIA) has been prepared by GHD Pty Ltd (GHD) as part of the EIS for the proposal. The EIS has been prepared to accompany the application for approval of the proposal and addresses the Secretary's Environmental Assessment Requirements (the SEARs), issued on 17 October 2024.

This report documents the assessment of the potential social impacts during the construction and operation of the proposal, and where required, identifies feasible and reasonable mitigation and management measures. Specifically, this report:

- has been prepared in line with the NSW Department of Planning and Environment's (DPE) *Social Impact Assessment Guideline* (DPE, 2023a) (hereafter referred to as 'the SIA Guideline')
- addresses the SEARs as listed in Table 1.2
- describes the existing social environment
- assesses the potential impacts (both positive and negative) of constructing and operating the proposal on people and communities
- recommends measures to mitigate and manage the impacts identified.

1.3 Summary of the proposal

1.3.1 Location

The proposal is located on Billabong Creek, which is part of the Yanco Creek system in south-west NSW. The Yanco Creek system forms a part of the Murray-Darling Basin. The proposal is located within the local government area (LGA) of Edward River.

An overview of the location of the proposal is shown in Figure 1.1

1.3.2 Key features of the proposal

As discussed in section 1.1, the proposal involves replacing two existing weirs along Billabong Creek with new regulators including fishways.

The core structure of the two regulators is similar and would include:

- concrete piers with maintenance bulkhead slots
- automated layflat gates across the crest of the structure to assist with flow management and downstream fish passage
- a low turbulence ‘keyhole’ type vertical slot fishway with allowances for variable headwater to provide upstream fish passage
- automated sidewinder gates within the vertical slot fishway to allow for variable headwater conditions
- fixed concrete crests on the opposite side of the gates to the vertical slot fishway
- concrete apron downstream of the structure
- concrete wingwalls upstream and downstream of the structure
- access from a trafficable deck for maintenance (Hartwood Regulator only)
- pedestrian walkway access part way across Wanganella Regulator structure to facilitate housing of gate actuators and for maintenance
- walkway grating over gates to facilitate operations and maintenance
- crushed rock maintenance pads, access and turnaround areas adjacent to the structure
- rip rap and rock beaching upstream and downstream of structure for erosion protection
- control house
- sheet pile cut-off walls beneath the structure
- fencing of the structures to prevent public access
- SCADA control system.

An indicative layout of a regulator is shown in Figure 1.2. This example is of a five gate regulator with a fish passage and trafficable deck for maintenance vehicles.



Figure 1.2 *Indicative layout of a regulator*

The proposal would also involve the following elements:

- Power supply to the regulators would be provided by a mix of underground and overhead electricity cables connecting the structures to the grid.
- Access to the regulators would require permanent tracks for maintenance and some additional tracks to support construction only. Track upgrades include a new drainage culvert at Hartwood.
- The existing Forest Creek block bank, associated with the Hartwood Regulator, would be replaced with a similar earthen structure to the existing. This would include two concrete sills to define the upstream and downstream top of bank and armoured with rock beaching and crushed rock for erosion protection.
- A flood bypass channel would be constructed to reduce potential upstream flooding impacts from the Wanganella Regulator. The channel would enable flood waters to drain between the billabongs in the Wanganella Reserve during flood events. It would be 85 metres long, around 40 metres wide and 1.7 metres deep and located north of the Wanganella Tip. Once completed, the channel sides and base would be natural and vegetated with appropriate local native species.
- An existing borrow pit on private land at lot 56/DP756322 near Hartwood Weir, would be extended to provide material for the construction of Hartwood Regulator and Forest Creek block bank.

The location of the existing weirs, proposed infrastructure, and the indicative proposal footprints are shown on Figure 1.3 and Figure 1.4.

1.3.3 Timing

Construction of the proposal is anticipated to start in 2025 and be completed by 2026. The construction period is anticipated to be around 18 months. Construction would pause during periods of high flow.

Standard construction hours would be adopted in accordance with the *Interim Construction Noise Guideline* (ICNG) (DECC, 2009) as shown in Table 1.1. Most construction activities would be undertaken during this time.

Table 1.1 Standard construction hours

Day	Start time	Finish time
Monday to Friday	7.00 am	6.00 pm
Saturday	8.00 am	1.00 pm
Sundays and public holidays	No regular work	

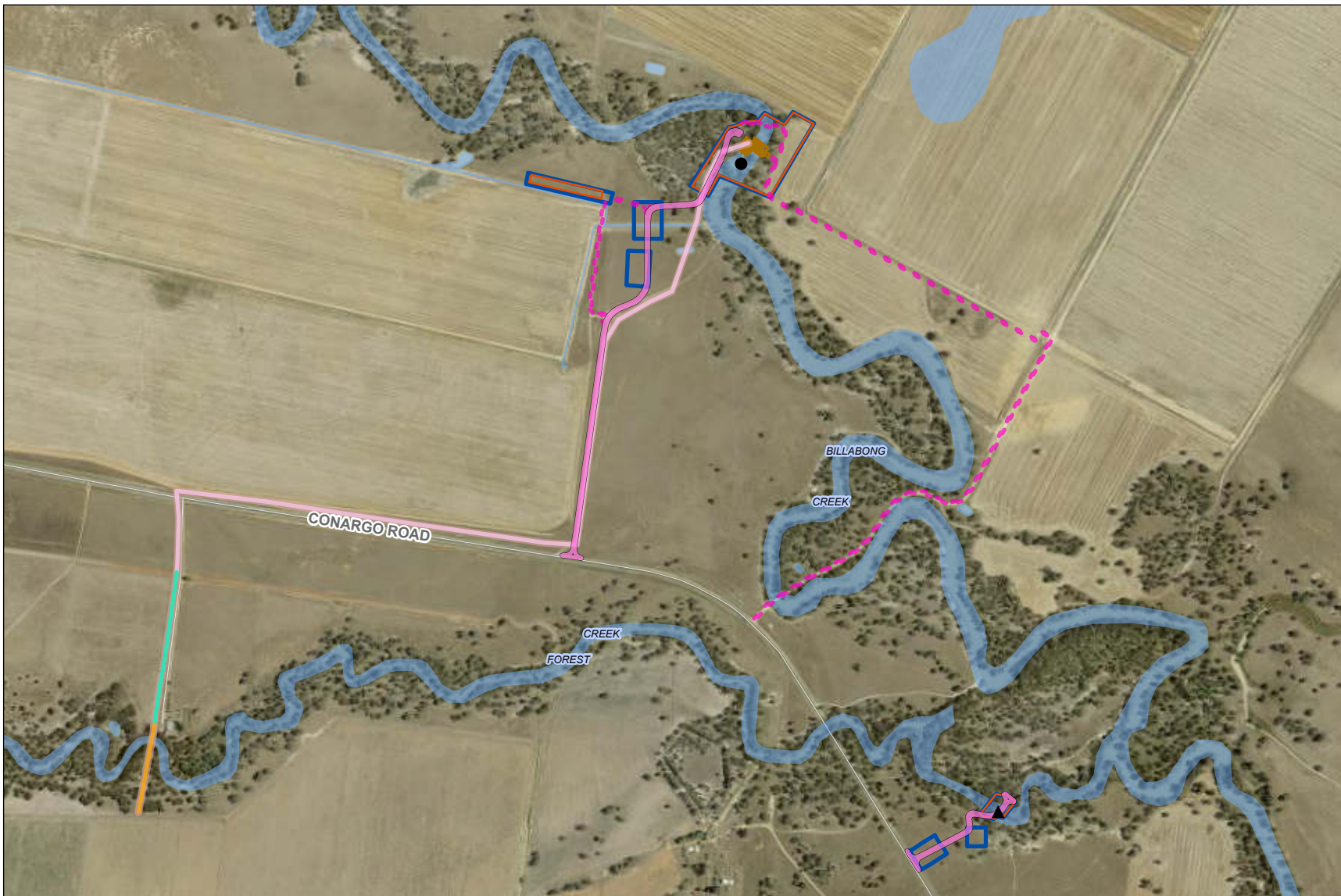
Notwithstanding this, the Interim Construction Noise Guideline (DECC, 2009) acknowledges that the following activities may need to be undertaken outside the recommended construction hours:

- emergency work
- delivery of oversized plant or structures
- works for which it can be demonstrated that there is a need to operate outside the recommended standard hours.

1.3.4 Operation

The proposal would be operated in accordance with the operating requirements established with the new asset owner and developed in consultation with key stakeholders. These operating requirements are known as the Yanco Creek System Operations Plan. The plan would take into account the regulation requirements at each regulator, as well as constraints such as limits to rates of rise and fall to accommodate fish breeding requirements. WaterNSW would own and operate the new regulators.

The proposed regulators would provide greater control of water levels which would be operated to meet environmental and water supply objectives.



- Proposal**
- Proposed Hartwood Regulator
 - Construction Activity Zone
 - Clearing Area
- Power Supply**
- Power Supply
 - Power Supply (Existing aboveground)
 - Power Supply (to run underground)
 - Power Supply Buffer
- Access tracks**
- Construction Only
 - Construction plus O&M
- Existing features**
- Existing Weir
 - ▲ Existing Block Bank
 - Main Road
 - Water Bodies

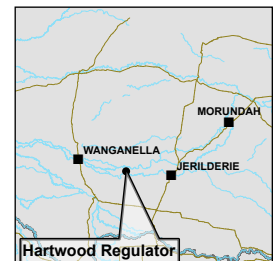
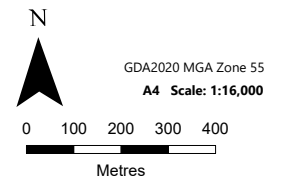


Figure 1.3 Location of Hartwood Regulator and Proposed Works



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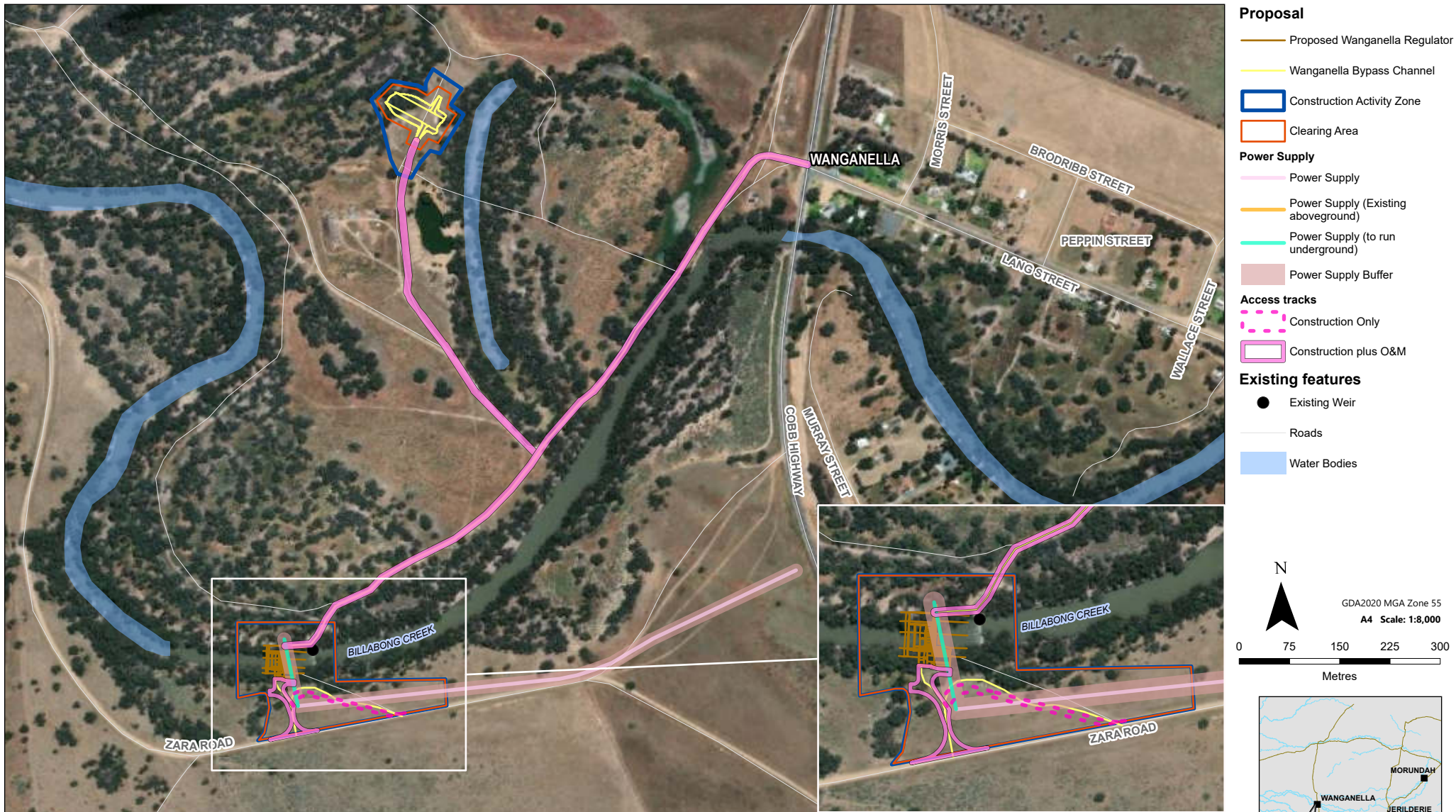


Figure 1.4 Location of Wanganella Regulator and Proposed Works

1.4 Secretary’s environmental assessment requirements

This social impact assessment has been prepared to address the Secretary’s Environmental Assessment Requirements (SEARs). Table 1.2 outlines the requirements relevant to this assessment. The assessment also considers requirements raised by the Department of Primary Industries -Fisheries.

Table 1.2 Relevant SEARs

Requirements	Where addressed in this report
Social Impact	
Provide a Social Impact Assessment prepared in accordance with the Social Impact Assessment Guideline for State Significant Projects (2021).	This report presents a Social Impact Assessment in line with the requirements of the NSW SIA Guideline (DPE, 2023a). The assessment of social impacts is presented in Section 6
The Social Impact Assessment must include assessment of: <ol style="list-style-type: none"> Potential impacts to cultural and recreational fishing values. 	Section 6
<ol style="list-style-type: none"> Potential impacts to agricultural businesses in the area during construction and operation of the project, including farmland and farm infrastructure, ancillary business activities (such as farm tourism and direct sales) and road access. 	Section 6

1.5 Authors of this report

The SIA Guideline requires a suitably qualified and experienced practitioner/s to be involved in the preparation of the SIA report (DPE, 2023a). The personnel involved in the preparation of this SIA and their respective qualifications are provided in Table 1.3.

Table 1.3 Authors and qualifications

Name	Position	Project role	Qualifications	Professional memberships	Years experience
Lauren Harding	Technical Director – Social Sustainability and Engagement	Technical reviewer	M. Social Science (Social Planning) B. Arts (Anthropology)	International Association for Impact Assessment International Association for Public Participation	15+
Courtney Granger	Social Sustainability and Engagement Consultant	Author	M. Urban and Regional Planning B. International Studies (Global Sustainable Development)	International Association for Public Participation	3

I, Lauren Harding declare that the *Billabong Creek Regulators SIA* contains all information relevant to the SIA for the proposal and that the information is not false or misleading. The assessment was completed on 6 August 2024.



Lauren Harding

1.6 Assumptions and limitations

The following list outlines assumptions and limitations applying to the preparation of this SIA and should be kept in mind when interpreting the analysis in this assessment:

- Details of the proposal are current as of December 2023.
- The assessment was undertaken based on publicly available information, consultation undertaken as part of the SIA and broader EIS process, and information and feedback provided by NSW DCCEEW.
- Direct inputs from landholders and local government were not available during preparation of the SIA due to stakeholder unavailability and complications arising from flooding events in October and November 2022. The assessment has drawn on the outcomes of consultation undertaken by NSW DCCEEW with these stakeholders to address this limitation.
- Direct consultation with Aboriginal stakeholders was not undertaken during SIA consultation. The SIA has drawn on the outcomes on engagement activities undertaken by the NSW DCCEEW project team with Aboriginal stakeholders as part of broader program and EIS engagement.

1.7 Structure of this report

The structure of this Social Impact Assessment (SAI) is outlined below:

- Section 1 – introduces the report and provides an overview
- Section 2 – describes the methodology relevant to this SIA for the proposal
- Section 3 – describes the legislative and policy context relevant to this SIA
- Section 4 – describes the stakeholder consultation undertaken for this SIA
- Section 5 – describes the existing social environment for the proposal area
- Section 6 – identifies the potential social impacts (positive and negative) arising from the construction and operation of the proposal, including potential cumulative impacts
- Section 7 – outlines recommended impact management and mitigation measures
- Section 8 – provides a conclusion for the report
- Section 9 – provides a full list of references used for this report.

2. Assessment approach and methodology

This section describes the methodology followed to prepare this SIA. Overall, the methodology has been prepared to respond to the SEARs (section 1.4), with the SIA process guided by the following guidelines:

- *Social Impact Assessment Guideline* (DPE, 2023a).
- *Technical Supplement – Social Impact Assessment Guideline for State Significant Projects* – hereafter referred to as the ‘SIA Technical Supplement’ (DPE, 2023b).
- International Association for Impact Assessment *International Principles for Social Impact Assessment* (Vanclay et al., 2003) and *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay et al., 2015).

The SIA Guideline (DPE, 2023a) has established a set of review questions to confirm that the requirements of the guideline have been met when considering the social impacts of a project. A response to the review questions is provided in Appendix A.

In the context of this SIA, social impacts are understood as the consequences that people and communities experience as a result of project-induced changes that affect the way they ‘live, work, play, relate to one another, organise to meet their needs and generally cope as members of society’ (Burdge & Vanclay, 1996).

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

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

A social impact can be direct, indirect or cumulative, and negative or positive. It can also vary according to the individual, community, or segment of a community by whom it is experienced. The term ‘community’ refers to a network of people and/or organisations who are linked together by a web of personal relationships; cultural and political connections, shared identities and traditions, similar socioeconomic conditions, or common understandings and interests (Vanclay et al., 2015). In the context of this SIA, the term ‘community’ is used to refer to people residing in a shared discrete geographic location - for example, a rural town or regional centre. However, in select cases, it may also be used to describe a ‘community of identity’ or a ‘community of interest’.

The sections below describe the steps undertaken to prepare this SIA report.

2.1 Scoping potential impacts

As per the SIA Guidelines (DPE, 2023a) a social impact scoping exercise was undertaken in 2022 in support of the EIS Scoping Report (GHD, 2022). The purpose of the SIA scoping exercise was to undertake a preliminary assessment of the potential social impacts and benefits that may occur as a result of the proposal. The scoping process was undertaken to help focus the assessment, identify the potential social values that may experience change, the areas the SIA will focus on, and the level of assessment for potential social impacts.

The potential social impacts and benefits that may result from construction and operation of the proposal were identified through a review of the information presented in the EIS Scoping Report, the understanding of the social locality (refer to section 2.2), and based on previous professional experience undertaking social impact assessments for state significant projects in NSW. The potential social impacts were evaluated according to the characteristics of magnitude as defined in DPE’s Social Impact Assessment Guideline (DPE, 2023a).

The initial evaluation found there may be minor social impacts and benefits that have the potential to occur during the construction and operation of the proposal. These include:

- Potential impacts to Aboriginal cultural values.
- Potential for access impacts on the local and regional road network.
- Potential increase in demand on social infrastructure services and facilities, including accommodation for construction workers.
- Changes in the local amenity during construction including traffic, dust, noise and vibration which may disturb residents located in close proximity to the proposal site. These changes, however, are likely to be minor.
- Potential power disturbances for nearby residents associated with upgrades to transmission lines. These disturbances, however, are likely to be temporary in nature and therefore be minor.
- Improved water management in the local study area.
- Potential positive impacts to the local and regional economy as well as opportunities for employment and business outcomes.
- Reduced impacts from water buy-backs.

The scoping exercise was documented in the EIS Scoping Report (GHD, 2022) and has informed the issues that have been investigated in this SIA.

2.2 Determining the social locality

The social study area, referred to also by the SIA Guideline (DPE, 2023a) as the ‘social locality’, includes the communities that are most likely to experience social impacts and benefits resulting from the proposal. The social study area adopted for this assessment comprises a local and regional study area. These areas are described in Table 2.1 (including the equivalent Australian Bureau of Statistics (ABS) Census statistical areas used for baseline data reporting) and shown in Figure 2.1.

Table 2.1 Social study area descriptions

Study area	Definition and interaction with the proposal	Relevant ABS Statistical Area
Local study area	<p>The local study area includes the proposal footprint of the proposed two regulator sites, as well as the immediate surrounds of each regulator site, including nearby landholders, businesses, and residents.</p> <p>In the context of this SIA, the proposal footprint includes the construction footprint (i.e., the area directly impacted by proposed work, including the removal of structures, temporary compound areas, access tracks, and installation of structures) and the operation footprint (the area directly used by the proposal once operational). The identified locations of the compound and laydown areas are shown on Figure 1.3 and Figure 1.4.</p> <p>The local study area also includes the following communities in close proximity to each proposal regulator site, and which use water from Billabong Creek to supply town water:</p> <ul style="list-style-type: none"> – Wanganella: the proposed Wanganella regulator and flood bypass channel is located adjacent to Wanganella village, situated within the Wanganella Recreation Reserve. This community exclusively uses Billabong Creek to supply their town water. – Conargo: located downstream of the proposed Hartwood regulator. This community uses Billabong Creek to supply some of their town water. 	Wanganella Suburb and Locality (SAL) Conargo SAL
Regional study area	The two proposed regulators are located within the Edward River Local Government Area (LGA). Communities across the Edward River LGA may experience some social impacts and benefits resulting from construction and operation of the proposal.	Edward River LGA



Figure 2.1 - SIA - Social Locality



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2.3 Establishing the social baseline

The social baseline establishes the current social characteristics within the social locality for the SIA. The social baseline is used to inform the prediction of the potential social benefits and impacts of the proposal. A social baseline has been prepared for the local study area and regional study area.

The local study area baseline describes:

- key features, local amenity and character of the proposal area and surrounds
- select demographic and economic indicators for the suburbs of Conargo and Wanganella.

The regional study area baseline describes:

- demographic indicators
- indigenous values and interests
- economy and industry
- community values and wellbeing.

Data to inform the social baseline has been gathered from the following sources:

- Australian Bureau of Statistics (ABS) Census, 2021 and 2016
- NSW Department of Planning and Environment Population Projections
- economic data (e.g. economy.id)
- local, regional and state government websites and publications
- Google maps
- academic literature on water projects and their potential social impacts.

A full list of sources used to this SIA is provided in section 9.

2.4 Community and stakeholder consultation

The SIA has been informed by the outcomes of various stakeholder and community consultation activities, including:

- Stakeholder interviews by the SIA team
- Stakeholder and community engagement activities by NSW DCCEEW - detailed in *Consultation report: Yanco Creek Modernisation Project* (DCCEEW, 2024)

SIA specific stakeholder consultation was undertaken in accordance with the requirements of the SIA Guideline (DPE, 2023a). The purpose of SIA consultation was to validate and gather information to inform the development of the social baseline, the identification and assessment of potential social benefits and impacts, and development of mitigation and management measures. The stakeholders targeted for SIA consultation were identified on the basis they would experience positive or negative social impacts as a result of the proposal, and / or they represent communities and stakeholders who would experience impacts.

SIA consultation was undertaken between September and October 2022 by the SIA team via attendance at a NSW DCCEEW run community information sessions and a Registered Aboriginal Party (RAP) session, face-to-face interviews, and videoconference interviews.

Section 4 of this SIA presents a summary of the consultation activities and outcomes relevant to this assessment.

2.5 Description and assessment of social impacts and benefits

The process of impact assessment involved considering how the changes brought about by the construction and operation of the proposal may affect the baseline social conditions of the social study area as well as identified communities and stakeholders. The approach to impact assessment applied in this SIA draws on the conceptualisation of social impacts described by Vanclay (2003), which emphasises the importance of distinguishing between ‘social changes’ and ‘social impacts’ (i.e., a social impact it is not an ‘impact’ until it is experienced by people).

Drawing on the initial social issues scoped in Phase 1 (section 2.1), social impacts were identified and confirmed using a data triangulation method, whereby multiple sources of information are used to ascertain an impact. These sources include:

- the proposal description for the EIS
- the findings of the social baseline against which the social changes / impacts were measured
- the outcomes of the stakeholder consultation undertaken for the SIA and the proposal as a whole
- relevant literature including other SIAs undertaken for similar projects or for other projects in NSW and more broadly, community and regional plans applicable to the study area, and relevant information and documents shared by stakeholders
- relevant technical studies prepared for the EIS to gather technically sound evidence to identify and assess the social changes resulting from the proposal. These are summarised below:
 - *Billabong Creek Regulators: Traffic impact assessment (TIA)* (GHD, 2024)
 - *Billabong Creek Regulators: Noise and vibration impact assessment (NVIA)* (GHD, 2024)
 - *Yanco Creek Modernisation Project: Part 2 Billabong Creek Regulators New South Wales - Aboriginal Cultural Heritage Assessment (ACHA)* (Austral Archeology, 2024)
 - *Billabong Creek Regulators: Land use impact assessment* (GHD, 2024)
 - *Billabong Creek Regulators: Non-Aboriginal heritage assessment* (Jacobs, 2024)
 - *Consultation report: Yanco Creek Modernisation Project* (DCCEEW, 2024).

An assessment of the identified social impacts was undertaken to determine their likely level of significance using the criteria outlined in the SIA Guideline (DPE, 2023a) and Technical Supplement (DPE, 2023b). Significance was determined by considering the likelihood of an impact occurring (Table 2.2) and magnitude of an impact (Table 2.4), with the overall level of significance determined by combining these factors (Table 2.5).

Table 2.2 Defining likelihood levels of social impacts

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

Table 2.3 Dimensions of social impact magnitude

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

Table 2.4 Defining magnitude levels for social impact

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20% of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minimal	Little noticeable change experienced by people in the locality.

Table 2.5 Social impact significance matrix

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

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

2.6 Recommended social impact mitigation measures

The recommended social impact mitigation and management strategies provided in this report seek to both enhance the benefits for stakeholders and communities and manage or mitigate negative impacts from the proposal. The SIA also references various EIS specialist studies for mitigation/management of specific impacts.

The recommended mitigation and management strategies were developed using adaptive management principles, recognising that impacts may change over time, and that ongoing monitoring of impacts would provide the flexibility to accommodate such changes. Section 7 presents the recommended mitigation measures for each

social impact and benefit identified in section 6. The assessment presented in section 6 also re-assesses the likelihood and magnitude of the impact assuming implementation of the mitigation measures.

It should be noted that the degree to which an identified potentially impacted person or community would experience an identified social impact varies based on factors such as (but not limited to) individual values and interests, connection to a place, sensitivity to change, and resilience and ability to adapt. The assessment of initial (and residual) impacts has taken this into consideration and identifies where the significance of an impact may be experienced differently amongst stakeholders. However, the SIA acknowledges the perception of significance may be higher or lower for some stakeholders given the subjective nature of social impacts.

3. Legislative and policy context

This section summarises the relevant State, regional and/or local government legislation, policies, plans and strategies underpinning this SIA. Combined, these documents define the social objectives and principles that guide the proposal to achieve sound social performance. The SEARs relevant to this assessment, and where these have been addressed in this report, are discussed previously in section 1.4.

Table 3.1 State, regional and local government policies, plans, and strategies

Title	Description and relevance to this SIA	Implications / relevance
State government		
<p><i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i></p>	<p>The proposal is declared State significant infrastructure by operation of Part 5, Division 5.2 of the EP&A Act, State Environmental Planning Policy (Planning Systems) 2021 (the Planning Systems SEPP), and State Environment Planning Policy (Transport and Infrastructure) 2021 (the Transport and Infrastructure SEPP).. The objectives of the EP&A Act relevant to this SIA are (clause 1.3):</p> <ul style="list-style-type: none"> (a) <i>to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State’s natural and other resources,</i> (b) <i>to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,</i> (c) <i>to promote the orderly and economic use and development of land,</i> (g) <i>to promote good design and amenity of the built environment,</i> (h) <i>to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,</i> (i) <i>to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,</i> (j) <i>to provide the opportunity for community participation in environmental planning and assessment.</i> 	<p>The outcomes of this SIA will contribute to these objectives.</p>
<p><i>Riverina Murray Regional Plan 2041 (DPE, 2023)</i></p>	<p>The <i>Riverina Murray Regional Plan 2041</i> provides a vision for strategic planning towards 2041 for the Riverina Murry region. The interconnectedness of the natural environment and social, economic and cultural values is recognised in this plan and woven throughout the strategic directions. The plan recognises the Riverina Murray region as a significant food bowl and the dependence of the agricultural sector on water availability from the regions river systems.</p> <p>Water availability in the region is recognised a challenge for the Riverina Murry region, where all water is fully allocated. Population growth, urban development and drought are considered key drivers to this challenge. The region is described to be at the forefront of equitable and sustainable water management for industrial, community and environmental uses. The plan highlights also the importance of water to maintain health ecosystems along river systems, and the role of its presence and timing, such as flood events.</p> <p>Protecting the natural environment is also recognised to provide amenity, especially along river systems, improving human experiences and supporting nature-based tourism in the region.</p>	<p>A key benefit of the proposal is the improved efficiency in managing water and reliability of water for license holders, which may contribute to managing these challenges. This SIA considers the potential social benefits that may result from improved water management for local and regional communities.</p>

Title	Description and relevance to this SIA	Implications / relevance
Local government		
<p><i>Community Strategic Plan 2022-2050</i> (Edward River Council, 2022)</p>	<p>The <i>Community Strategy Plan</i> (CSP) presents the vision set out by the community for Edward River, and identifies how desired outcomes can be achieved. Targets set out in the Plan that are relevant to this SIA include:</p> <ul style="list-style-type: none"> – support and advocate for healthy lagoons and rivers – connect stakeholders, data, technology and community interests to innovatively solve local challenges. <p>The proposal contributes to these targets through efficient water delivery for environmental purposes, including for watering riparian corridors and wetlands. This would be achieved through a SCADA control system, which would connect remote river operators to automated layflat gates that can manage river flows in response to real time data. The efficiency in managing flows is considered beneficial to water management in Billabong Creek.</p>	<p>This SIA considers how the proposal contributes to regional community values.</p>
<p><i>Edward River Council Advocacy Strategy</i> (Edward River Council, 2019a)</p>	<p>This strategy was developed to coordinate a whole of government response to key challenges recognised in the CSP. Through this strategy, Edward River Council identifies water goals for Council advocacy, including:</p> <ul style="list-style-type: none"> – no further productive water acquisition through buy-backs from the Southern Basin, as the impacts on our communities are far too great – greater detail on the benefits, uses, and regulation of environmental water – all regions across the Murray Darling Basin to have the same standard of compliance, metering, and measurement as the systems currently implemented in the Murray system – water is the key economic driver of our region and we have already made a significant contribution to water recovery, we believe no further water should be removed. <p>The goals of the strategy align with the expected outcomes of the proposal and the coinciding operational plan. In particular, the proposal aims to reduce the requirement for water buy-backs, and to better regulate environmental waters.</p>	<p>This SIA considers how the proposal contributes to regional community values.</p>

4. Outcomes of consultation

This section presents a summary of issues relevant to this SIA raised by stakeholders and community members during EIS engagement activities and SIA consultation activities.

4.1 EIS consultation

NSW DCCEEW has been undertaking a comprehensive engagement program with stakeholders, landholders, and communities regarding the Yanco Creek modernisation options, including for the Billabong Creek new regulators.

As part of the stakeholder and community engagement program, NSW DCCEEW meets every three months, or as needed with a Stakeholder Advisory Group, Technical Advisory Group, Yanco Creek and Tributaries Advisory Council, and Aboriginal Traditional Owners and communities. The purpose of these meetings is to be a key communication tool for the proposal.

Chapter 5 of the EIS and *Consultation report: Yanco Creek Modernisation Project* (DCCEEW, 2024) describe the relevant activities and stakeholders who have been consulted and provides a summary of the issues raised.

A summary of key issues and themes raised during EIS engagement activities that are relevant to this SIA is provided in Table 4.1.

Table 4.1 EIS consultation outcomes relevant to this SIA

Key Issue or theme	Consultation outcomes	Where addressed in SIA
Water management and quality	<ul style="list-style-type: none"> – Concern about perceived risk of less water and/or low flow rates in the Yanco Creek system because of changes to infrastructure and the related Yanco Creek Operations Plan. – Some stakeholders raised concerns about potential water buybacks and impact on the Yanco Creek system. In particular, ‘paper water savings’ versus ‘real water savings’ (e.g. reduced flows in the top part of the Yanco Creek System). – Some stakeholders raised concerns about potential impacts to water quality. 	Section 6.4 Section 6.6
Aboriginal cultural values and heritage	<ul style="list-style-type: none"> – Some stakeholders identified concerns that the cultural scoring has not been undertaken properly and they would like to see a closer alignment between cultural and environmental scores. 	Section 6.5
Landholders	<ul style="list-style-type: none"> – Desire for landholders to be engaged and kept informed regarding projects that directly impact them. 	Section 6.1

4.2 SIA consultation

This section presents a summary of the key social issues and opportunities identified by stakeholders consulted by the SIA team in September and October 2022. An overview of consultation activities is provided in Table 4.2.

Table 4.2 Summary of SIA consultation activities

Stakeholder type	Stakeholders consulted	Overview of consultation activities
First Nations	<ul style="list-style-type: none"> Registered Aboriginal Parties (RAPs) Individuals from Aboriginal communities within the region 	SIA team members attended a NSW DCCEEW run update session held for RAPs and individuals from the region. Discussions included early findings from the heritage surveys at the site and First Nations engagement methods.
Local community	<ul style="list-style-type: none"> Landowners Local businesses Local farmers 	Attendance at three NSW DCCEEW community information sessions on 6 and 7 September 2022. SIA team members also held informal one-on-one conversations with meeting attendees.
	Local businesses	Informal interviews with local business owners and representatives on 7 September 2022
Yanco Creek and Tributaries Advisory Council members	Three Yanco Creek and Tributaries Advisory Council members, including one representative of fishing community	Informal one-on-one conversations with Yanco Creek and Tributaries Advisory Council members on 6 and 7 September 2022.
State government	Murray Local Land Services representatives	Online interview with representatives of Murray Local Land Services on 28 October 2022.
Recreational groups	A representative of local fishing group	Online interview via MS Teams with representatives of a local fishing group on 28 October 2022.
Tourism	Deniliquin Visitors Information Centre	Informal interview with two representatives on 7 September 2022.
Special interest groups	Creek Country Alliance	Phone interview with representative from the Creek Country Alliance on 19 October 2022.

4.2.1 Key themes and issues

The key issues and themes raised by stakeholders consulted for the SIA are shown in Table 4.3. It is important to note that most stakeholders consulted for the SIA raised social issues and opportunities related to the wider options for the Yanco Creek modernisation. This is outside the scope of the EIS and this SIA, as the SSI seeks consent for the Billabong Creek regulators only. However, these are considered in this SIA, as water management issues are inextricably linked to the proposal and from a social perspective cannot be considered in isolation.

Table 4.3 SIA consultation: themes and key issues raised

Key issue or theme	Consultation outcomes	Where considered in this SIA
Community challenges, values, and character	<ul style="list-style-type: none"> The area is predominantly made up of irrigation farming communities, who are very engaged and strong advocates for maintaining healthy water and land resources. The population in Wanganella is dwindling, which was felt to be due to a “knock-on” effect of reduced water supply and automated farm practices, which has reduced the need for workers. Across the region there has been a demographic shift with less young people (under 18 years) and an ageing population. Local communities value protection and enhancement of the natural environment. Despite this, some community members expressed frustration that projects to modernise the Yanco Creek system were focused on “plants, and not people”, where they felt environmental benefits were being prioritised over community benefits. 	Section 5.1 Section 5.2.5 Section 6.4

Key issue or theme	Consultation outcomes	Where considered in this SIA
	<ul style="list-style-type: none"> – Access to health services is difficult in the region, some community members reported a two week wait for GP appointments. – Deniliquin and surrounds are known to have an “attractive” lifestyle, due to factors such as recreational opportunities provided by the Edward River. 	
Property and land use	<ul style="list-style-type: none"> – Health of waterways can be impacted by how adjacent private lands is managed. – There are existing programs (e.g. Refreshing Rivers Program by Local Land Services) which support private landowners in land management practices which support waterway health. – Some private properties would need to be accessed to enable operational maintenance of the weirs, which would require access agreements. This was preferred over property acquisition and easements. 	Section 5.1.1 Section 6.1
Biodiversity and the natural environment	<ul style="list-style-type: none"> – The community value the natural environment and assets, biodiversity, and waterways of the Murray Region. – There are local community groups which have been established to protect the creek environment. There is recognition of the interdependency between a healthy natural environment and a productive farm, and this is one reason why the community “take care of the creek”. – There are high value conservation areas on private and public land, including important wetland systems such as Wanganella Swamp. – Concerns raised about height of water levels and potential for damage to riparian vegetation, and potential for erosion of creek banks. – Recognition that while the proposed fish passage/fish ladder would be beneficial to native fish populations compared to the existing weir design, there is a need for more studies to improve understanding of fish populations. – Some community members noted the importance of higher flows at particular times are important to support fish population numbers, i.e. higher flows at springtime will help fish stay in nests and hence reproduce. 	Section 5.2.2 Section 5.2.5 Section 6.2
Water management	<p>Issues and concerns raised about water management included:</p> <ul style="list-style-type: none"> – existing concerns about time spent by irrigators re-negotiating and advocating for water allocations and rights, and the frequency of changes to operational rules – concerns about historic cease to flow events along Billabong Creek – some concern the proposal and operational rules may allow the creek to run too low in a low flow circumstances – existing concerns about governance of water management and operating rules – reducing the need for water buy-backs – potential for increased water rates – improved level of service, due to increased ability to measure flows and improve predictability. 	Section 5.2.5 Section 6.2 Section 6.6
Aboriginal communities, values and consultation	<p>The following issues and values were shared by community members:</p> <ul style="list-style-type: none"> – Aboriginal heritage is valued, and there is interest in potential impacts to Aboriginal heritage. – There is interest in employment opportunities for Aboriginal people, and procurement opportunities for Aboriginal businesses that may result from the proposal. – Cultural flows were highlighted as a key aspect of the proposal, as cultural flows are valued by many in the communities along the regional creek and river systems. – The following issues were raised regarding Aboriginal cultural heritage consultations: 	Section 5.1 Section 5.2.2 Section 6.5

Key issue or theme	Consultation outcomes	Where considered in this SIA
	<ul style="list-style-type: none"> • cultural surveys should involve walking the site, and should have a balance of male and female representation • provide adequate notification periods for cultural surveys, and share results early to enable meaningful feedback to be gathered from the broader community • information about the proposal needs to be shared during cultural surveys • suggestion for one-on-one consultation carried out with representatives from the Aboriginal community. 	
Economy, employment, and business	<ul style="list-style-type: none"> – Acknowledgement that most regional sectors rely on a healthy agricultural sector, with agriculture described as the “lifeblood” of the area. – There are a number of multi-generational family operations who use water from Billabong Creek. – There are a number of farmers that also run commercial red gum apiaries along Billabong Creek. – The regional economy is still recovering from the millennium drought, which has resulted in impacts to or closure of some businesses, and population decline. – Many people in the region have looked to diversify their businesses or to develop a second skill set to reduce financial vulnerability during times of drought. – Water was noted to be “expensive”, requiring careful use by irrigators, and exploring water recycling for farming operations. – Reliable access to water was viewed as critical to the stability of farming operations and property values. – Issues raised about processes for ordering water, including water not being provided, particularly in times of drought. It was felt there needed to be more accurate lead times communicated for water orders. – Interest from local businesses in procurement opportunities during the construction of the proposal. – Existing issues related to sudden reduction in water height along the Billabong Creek, which can lead to stock becoming bogged in mud and loss of livestock, impacting farming businesses. – Existing issues with increase in pests in Wanganella Swamp due to water mismanagement, leading to increased costs for farmers. 	Section 5.2.5 Section 6.6
Local amenity	<ul style="list-style-type: none"> – Some concerns raised about vehicles accessing the proposal sites during construction and operation affecting local amenity (e.g. noise and visual impacts). 	Section 5.1.1 Section 6.2
Access and traffic	<ul style="list-style-type: none"> – Some concerns raised about potential for trespassers on private properties due to new/improved access tracks. – Some concerns about biosecurity issues due to spread of pests and weeds from vehicles accessing the proposal site during construction and operation. 	Section 5.1.1 Section 6.3
Accommodation and housing	<p>Existing accommodation issues in the region include:</p> <ul style="list-style-type: none"> – During harvest season there is often an influx of labourers who usually stay at the property they are working, camp, stay in caravans, or use short-term accommodation in Deniliquin. – Deniliquin has low vacancy rates, and houses often sell quickly once advertised. – Holiday or short-term accommodation in Deniliquin is often at capacity, especially during events such as the Deni Ute Muster. 	Section 5.2.6 Section 5.2.5.3 Section 6.7
Recreation and tourism	<ul style="list-style-type: none"> – Billabong Creek has a good reputation for fishing and fishing is seen to be an important social activity for the community. The region also supports several fishing competitions and events including in Jerilderie and Deniliquin. 	Section 5.2.5 Section 6.4

Key issue or theme	Consultation outcomes	Where considered in this SIA
	<ul style="list-style-type: none"> – Billabong Creek supports tourism in the area, for example the caravan park and camping grounds are popular because of the amenity the creek provides. – Some questions about whether the proposal would impact access for fishing and recreational use at the new Wanganella regulator site. – New/improved access tracks would improve access to Wanganella Recreational Area. – Some sentiment the proposal would benefit farmers but not recreational users of the creek such as kayakers and boaters. 	
Mitigation and management measures	<p>The following suggestions were made regarding potential mitigation or enhancement measures:</p> <ul style="list-style-type: none"> – Operational rules should have section targets to improve system management, this would avoid mudflats and stock bogging as well as enhance transparency. – There should be safeguards in place to ensure operational rules would not be changed or rules would not be broken. The regulator design should protect water users' allocations. – The proposed regulators should be designed to reduce maintenance costs, e.g. use standard designs and parts. – There should be more accurate modelling on water flows, including additional data points. – Important to reflect on lessons learned on the design and operation of the automated irrigation system in the Murray River. – Work with Fisheries NSW to pilot new flow regimes to identify changes to fish passage and numbers. 	Section 7
Community consultation	<p>Issues raised related to consultation included:</p> <ul style="list-style-type: none"> – Feelings of consultation fatigue due to Yanco Creek modernisation engagement activities, and advocating for fair river operating rules. – Queries about how community feedback informed the proposal design. – Lack of continuity in project staff, affecting ability to build relationships with communities. – Desire for government staff to be involved in community engagement activities. – Importance of providing specific consultation activities for specific stakeholder groups, e.g. providing Aboriginal stakeholder sessions to enable a culturally safe environment for sharing feedback. – Concern about legacy of previous Billabong Creek plans, and potential changes to operational rules, which may lead to water security issues for irrigators. – Important to provide project information on platforms that are not online – many in the community are either elderly and do not use the internet much, or they are in locations where the internet is not reliable or available. 	Section 5.2.5 Section 6.4

4.3 Design refinements

The design development process included opportunities to respond to stakeholder feedback and avoid or minimise social impacts. As design refinements have occurred concurrently to the preparation of this SIA, design refinements have been considered as part of this assessment rather than the proposed mitigation strategies. A summary of the design refinements for this proposal are shown in Table 4.4.

Table 4.4 Summary of design refinements in response to potential social impacts

Proposed infrastructure	Design refinement
Reduction of proposal scope to two regulators.	The original scope of the proposal was to replace four weirs. Further hydrological modelling established the majority of water delivery efficiency could be obtained through replacement of just two weirs. This avoided impacts to landowners and communities close to the locations of Caroonboon and Piccaninny Weirs.
Alignment of access tracks	The alignment of the access track for the Forest Creek block bank was changed to avoid impacting upon a heritage feature. The was altered following consultation with the First Nations groups.
Underground power line	Following consultation with land owners, a corridor identified for an above ground electrical power line was changed to an underground asset to accommodate the land owners' needs.
Construction staging of new regulators	Downstream, in-stream construction was chosen for the new regulators, with the new regulators being completed before removal of the existing weirs. This was due to the option's reduced need for earthworks, higher community support and reduced environmental impacts. This methodology would mean the weir pools would be retained behind the existing weirs while the regulators are constructed, avoiding significant changes to the availability of weir pool supply.

5. Social baseline

This section describes the socio-economic environment of the social locality (section 2.2), as relevant to the scope of potential social impacts and benefits identified in section 2.1. This section draws upon outcomes from consultation and a site visit, findings from a desktop review of literature, including 2021 ABS Census data, with a detailed list of data for selected social and indicators provided in Appendix B.

5.1 Local study area

5.1.1 Proposal footprint and immediate surrounds

The proposed new regulators are located along the mid and lower Billabong Creek, which is Australia's longest creek and considered the longest creek system in the world (Greater Hume Council, 2022). The majority of land uses adjacent to the water course are dryland grazing and cropping. The landscape around the Billabong Creek is characterised by riverine forests that form a narrow corridor along the water course (Cooling & Gippel, 2018). Billabong Creek is known as a scenic spot for visitors in the Riverina Murray region, and for recreational activities such as walking, biking, kayaking, camping, bird watching and fishing (Destination NSW, 2018).

The proposed regulators are located on Billabong Creek within the Yanco Creek system. The Yanco Creek system traverses the ancestral lands of the Wiradjuri, Bangerang, Yorta Yorta, Barapa Barapa, and Wamba Wamba peoples. According to Horton (1994) as cited in (Austral Archeology, 2024), the study area is in the boundary of the following language groups including the Baraba Baraba (Barababaraba), Yorta Yorta, and Wiradjuri.

The Billabong Yanco System is the principal supply of water for the rural villages of Conargo and Wanganella. Sections 5.1.1.1 and 5.1.1.2 provide a description of the proposal footprint, and their immediate surrounds, specific to each proposed new regulator site.

5.1.1.1 Hartwood site

The new regulator at Hartwood would be located about 40 kilometres northeast of Deniliquin. The closest village is Conargo, which is 10 kilometres west of the proposal site (section 5.1.2.1). The proposal footprint and immediate surrounds are zoned RU1 – Primary Production under the Conargo Local Environmental Plan (LEP) 2013 (Edward River Council, 2013). The existing Hartwood Weir is owned and operated by WaterNSW and located on land owned by WaterNSW. The proposed new regulator would be located on a number of Crown Land parcels and Travelling stock reserves. Acquisition of Crown Land would be undertaken in consultation with NSW DCCEE and in accordance with NSW legislation (GHD, 2024).

The land surrounding the new regulator site is Crown Land Reserve on the west bank and private land on the east bank. This land is primarily agricultural land used for livestock and cropping.

The proposed new regulator would be accessed from Conargo Road to the south through the Crown Land parcel. Existing access is intersected by a travelling stock route, which is understood to be held by NSW Local Land Services (LLS). The main access to the west bank is via an existing track. Access to the east bank is via a private bridge.

The Hartwood site is relatively isolated, with no residential dwellings, accommodation facilities, parks, or other social infrastructure within two kilometres of the proposal site.

5.1.1.2 Wanganella site and village

The new regulator and flood bypass channel at Wanganella would be located about 35 kilometres northwest of Deniliquin and about 500 metres southwest of Wanganella village. The proposal footprint and immediate surrounds are zoned RU1 – Primary Production under the LEP (Edward River Council, 2013).

The existing Wanganella Weir was constructed for the Wanganella town water supply and is an Edward River Council owned structure. The existing weir pool is currently used for recreational water-based activities, such as kayaking and fishing. The proposed new regulator would be located on a number of Crown Land parcels and Travelling stock reserves. Acquisition of Crown Land would be undertaken in consultation with the NSW DCCEE and in accordance with NSW legislation (GHD, 2024).

Wanganella is located on the traditional land of the Baraba Baraba (Barababaraba). Baraba Baraba (Barababaraba) were recorded to range from the Murrumbidgee River (north), southward past Kerang and share a portion of its south-eastern boundary with the Yorta Yorta (Tindale, 1974) as cited in (Austral Archeology, 2024). Baraba Baraba (Barababaraba) is culturally linked to nearby Wemba Wemba (Wembawemba), where dialects are considered almost identical. Wemba Wemba (Wembawemba) have historically occupied areas downstream (i.e. to the west) of Baraba Baraba (Barababaraba) (AITSYS Collection, 2022). Water is central to the culture of Traditional Owners in this region (Cooling & Gippel, 2018).

The area surrounding Wanganella Weir is part of Wanganella Recreation Reserve, which includes a recreation area (to the north of the proposed new regulator site and along the creek), informal camping areas (along the north side of the creek), Wanganella village landfill (about 600 metres north) and the Wanganella Cemetery (about 1.5 kilometres north-west). Wanganella Recreation Reserve also contains two off-creek lagoons and numerous vehicle tracks. The area to the south of the proposed new regulator site is used primarily for agriculture.

The proposed new regulator site would be accessed via tracks connecting to Zara Road and Cobb Highway. Zara Road is about 200 metres south of the proposal site and access from the Cobb Highway would be about one kilometre northeast of the site. These tracks would provide access to either side of the proposed new regulator site, traversing Crown Land.

Wanganella village is located on the Cobb Highway, about 35 kilometres north of Deniliquin and about 80 kilometres south of Hay, in the Edward River LGA. In 2021, Wanganella had a population of 61 people¹ (ABS, 2022). During SIA consultation, local community members described the population in Wanganella as “dwindling” due to a decreased demand for labourers for regional farms. This decrease was attributed to the combination of a decreasing water supply, which reduces crop yield, as well as mechanised farm labour (see section 4.2.1).

The village is centred around Billabong Creek, and features a small number of houses, Wanganella Community Hall, a playground, basketball court, church and Wanganella Store. The village is located on the northern side of the creek, east of the Cobb Highway, and about one kilometre north-east of the proposal site. The store is co-located with a post office and petrol station.

Wanganella Creek Camp Park is a campground and cabin accommodation site located south of the creek and east of Cobb Highway, about one kilometre east of the proposed new regulator site and 500 metres south of Wanganella village. The park hosts basic amenities such as showers and drinking water. The camping grounds within the park are located in close proximity to Billabong Creek, upstream of the proposed new regulator site.

During SIA consultation, community members noted that the peaceful amenity and bush landscape of Billabong Creek is a key attraction for visitors to this area. Community members from Wanganella also indicated that Billabong Creek at Wanganella is often used by locals and visitors for recreational activities, such as fishing and kayaking (see section 4.2.1).

One of the earliest European settlers in Wanganella was the Peppin family, who arrived in Wanganella in 1858. The Peppin family developed the Peppin Merino sheep strain for wool, which is now a dominant product of the Australian wool industry (Monument Australia, 2008).

The land uses surrounding Wanganella are predominantly agricultural, including the Avenel Merino Stud, a sheep stud located about two kilometres north of the proposal site.

5.1.2 Communities in proximity

This section provides an overview of communities in proximity to the proposed regulators, which use Billabong Creek as a primary source of town water, for both domestic and agricultural purposes.

5.1.2.1 Conargo village

Located on the junction of Conargo Road and Carrathool Road, Conargo is a small village within the Edward River LGA, about 30 kilometres north east of Deniliquin. In 2021, Conargo had a total population of 117 people. The proposed new regulator at Hartwood would be located 10 kilometres east of Conargo.

¹ Due to the small population for this area, limited information has been provided by the ABS. Small random adjustments have been made to all cell values provided by the ABS to protect the confidentiality of data.

Conargo is located where the traditional lands of the Yorta Yorta, Wiradjuri and Baraba Baraba (Barababaraba) groups converge (Tindale, 1974).

The Conargo area is predominantly made up of agricultural lands, which are mostly sheep stations, with rural residential lands clustered along Conargo Road. Key features of the village include a general store and petrol station, Conargo Recreation Reserve which includes a sports field and tennis courts, Conargo Public School, Conargo Rural Fire Brigade, a church, post office and a park that acts as a rest stop for motorists. The historic Conargo Pub, established 1859, was severely damaged by fire in 2014. In 2022 it was rebuilt and now operates as the Conargo Hotel. Informal camping along Billabong Creek is available in Conargo, near the village centre.

5.1.2.2 Jerilderie township

Located on the Newell Highway in Murrumbidgee LGA, Jerilderie is a small rural town about 70 kilometres northeast of Deniliquin. Jerilderie is located about 40 kilometres upstream of the proposed regulator at Hartwood. Jerilderie is a key service and administration centre for the surrounding farming communities, and in 2021 had a population of 922 people. Of that 5.3 per cent (49 people) identified as Aboriginal and/or Torres Strait Islander in Jerilderie (ABS, 2022).

Jerilderie is located on the traditional land of the Wiradjuri and the Jeithi (Yeidthee) people. The Jeithi were identified to inhabit the land between the Murray River and Lack Urana, Jerilderie and Lockhart (Tindale, 1974) It is understood that the Jethi (Yeidthee) tribal area has been incorporated into the Wiradjuri Aboriginal tribal lands (Henery, 2008). As described above for Wanganella village, water is central to the culture of Traditional Owners in this region (Cooling & Gippel, 2018).

Currently, Jerilderie’s primary supply of stock and domestic water is from Billabong Creek. Billabong Creek also supplies water to Lake Jerilderie, which is located in the centre of town and is used for water skiing and other recreational activities for locals and visitors (Cooling & Gippel, 2018). According to SIA consultation, irrigation off the Yanco Creek system was “born” in Jerilderie (see section 4.2.1), when in 1926, the Yanco, Colombo and Billabong Creek systems were “augmented” from the Murrumbidgee River to expand agricultural operations in the area (Murrumbidgee Council, 2022).

During SIA consultation, local residents reported that population numbers reduced after the Millennium Drought, when some residents left town, and others delayed having children and as a result there are a low number of teenagers in Jerilderie (see section 4.2.1). This is reflected in the 2021 Census data shown in Figure 5.1, which shows a lower proportion of younger age cohorts under 49 years, and higher proportion of people over 50 years.

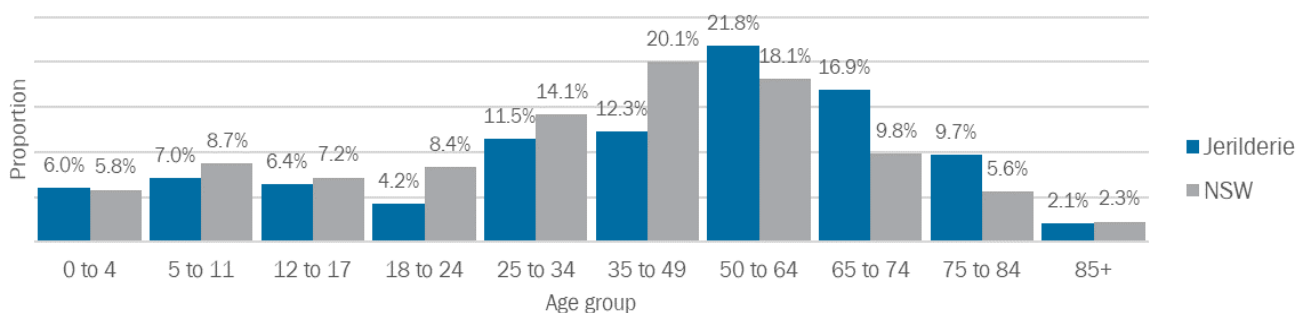


Figure 5.1 Age distributions: Jerilderie and NSW. Source: ABS Census Data 2021 [ABS, 2022]

In 2021, the ABS Census showed that compared to NSW, Jerilderie had a higher unemployment rate (3.6 per cent compared to 4.9 per cent) but lower labour force participation rate (51.4 per cent compared to 58.7 per cent). This is consistent with town’s older age profile.

Irrigated agriculture is the greatest contributor to economic activity in this area, however Jerilderie also provides employment through the retail and service industries (Cooling & Gippel, 2018). According to the 2021 Census, the largest industry of employment in Jerilderie was Agriculture, Forestry, and Fishing (31.1 per cent) (ABS, 2022).

5.2 Regional study area

5.2.1 Overview

Located in Southern Riverina, NSW, the Edward River LGA consists of several regional villages and towns, such as Deniliquin, Conargo and Wanganella, amongst predominantly agricultural lands. European settlement occurred in the area in the mid-1800s, where the Peppin Brothers established the Peppin breed of merino sheep. The area has since had a legacy of rice, wool, and timber industries (Edward River Council, 2019b).

The Yanco Creek system, including Billabong Creek, meanders throughout the landscape flowing towards the Edward River in the south west, providing town water for surrounding communities. The broader landscape is also characterised by agribusiness operations, floodplains, wetlands, and creek forests. The majority of irrigation water licences in the Yanco Creek system are general security, stock and domestic, and supplementary licences used for seasonal crops (DPE, 2022).

5.2.2 Indigenous values and interests

(Austral Archeology, 2024).

The regional area (including broader Riverina region) has a unique mix of flora and fauna species including river red gum, black box, wetland grasses and sedges as well as birds, reptiles, mammals and fish. Many of the plants were utilised by Aboriginal people for food, medicine, and material resources. Fish was a staple of the Aboriginal diet due to the reliability of the Murray River, which provided a permanent habitat for a variety of fish species including two-spined blackfish, Australian rainbowfish, sliver perch, Murry jollytail, and Murray cod. Other aquatic species such as freshwater molluscs and crustaceans are also often found in midden sites along the river and tributaries (Austral Archeology, 2024).

Cultural flows can be described as the care for surface and ground water resources as an aspect of caring for Country. Maintaining cultural flows include various outcomes for Indigenous people, including identity, capacity building, spiritual, cultural, social, environmental, and economic outcomes. They may include practical activities like fishing, hunting, ceremonies, and the harvesting of plants, and also have a role in protecting burial mounds, scarred trees, and campsites (Murray-Darling Basin Authority, 2022). Community engagement carried out by NSW DCCEEW also identified the importance of maintaining river flows for various cultural, environmental, community, and economic purposes, in particular for local Aboriginal communities (WINSW, 2021).

As for the broader Yanco Creek system, Cooling and Gippel describe the that:

“...for the Indigenous custodians of the region, the natural landscape features highly productive watercourses, wetlands and floodplains. These environments are culturally important and are traditional sources of food, shelter and other resources. The significance of the traditional values of the region is indicated by over 826 cultural heritage sites recorded along watercourses in the Yanco Billabong...” (Cooling & Gippel, 2018).

5.2.3 Community values

5.2.3.1 Community identity and values

The *Edward River Community Strategic Plan 2022-2050* (Edward River Council, 2022) describes the following values of relevance to the proposal as being important to the Edward River community:

- healthy, socially connected, and resilient
- economic diversity
- vibrant and creative
- sustainable, quality infrastructure
- a healthy and attractive natural environment
- a good place to visit for nature, food and fun.

During consultation, local stakeholders reflected these values by describing Deniliquin and communities in the region more broadly as a ‘friendly’, ‘resilient’ and ‘self-reliant’ (SIA consultation, 2022).

Agriculture is a primary source of identity in the region (Edward River Council, 2022) with many stakeholders during SIA consultation speaking about the interdependency between water availability and the overall health and wellbeing of local communities. This is supported by the findings of Edward River Council's 'Our Region, Your Say': *Community Consultation Report* (Edward River Council, 2021), with outcomes from this consultation showing that there is a strong pride of place amongst residents which is linked to the region's history and the strength of the agribusiness sector and local entrepreneurialism.

Council's consultation report also identifies that the Edward River community value the rural lifestyle of the region, which was reflected during SIA consultation where lifestyle in Deniliquin and surround was described as "attractive" such as the recreation Edward River provides.

5.2.3.2 Use of natural resources

The Yanco Creek system and Edward River LGA is situated within the Murry-Darling Basin which spans more than one million square kilometres. It is home to key ecosystems and important fish (including Murray cod, silver perch, golden perch, rainbow fish and southern pygmy perch), birds and other wildlife (Murray-Darling Basin Authority, 2023). The natural environment, in particular creeks and rivers, is also an important source of amenity and recreation, and attracts investment and tourism (section 5.2.5.3) (Edward River Council, 2021).

The health of the region's natural resources, in particular land and water, is of high interest and importance to many people in the Edward River region (SIA consultation, 2022). With agriculture being the mainstay of the regional economy (refer to section 5.2.5), many interviewees during SIA consultation described a healthy natural environment, in particular the health of the region's waterways and water resources, as being interlinked with a prosperous local economy and hence the wellbeing of the community. It was also noted during consultation that farming practices are reliant on reliable and consistent flows in the system (see section 4.2.1).

Access to stable, reliable, and affordable water is an ongoing regional challenge. SIA consultation reflected this concern, where several community members questioned whether the proposal would increase water rates (section 4.2.1). Council's consultation report found that there were some concerns within the community relating to unpredictable water heights where sudden rises and falls can have negative impacts to the environment. This was also reported during SIA consultation where community members noted that water heights can impact the quality of riparian vegetation and fish and bird populations, where nests can be disturbed (section 4.2.1).

Ongoing protection of the natural environment is a key priority for the region (section 5.2.4.1). This value is reflected in Edward River's strong volunteer base, where Council's consultation report found that volunteerism is common in the region, particularly within natural resource management groups (Edward River Council, 2021). High rates of volunteerism are shown in the 2021 Census where rates were notably higher in Edward River LGA (20.7 per cent) compared to NSW (13 per cent) (ABS, 2022).

Natural resource management, especially water, is a source of contention for many Edward River residents (Edward River Council, 2021). During SIA consultation, some stakeholders mentioned that many in the community feel fatigued from the ongoing need to advocate for allocations and water rights, with some community members starting to "switch off" to water issues (Edward River Council, 2021). This has also been a common experience across the ongoing water policy changes across the basin. The management of water resources is also a priority for Edward River Council. The *Edward River Council Advocacy Strategy* recognises the need for water advocacy at the local government level to improve water management for those in Edward River LGA (Edward River Council, 2019a). This strategy demonstrated that Council is advocating for:

- no further productive water acquisition through buy-backs from the Southern Basin
- greater detail on the benefits, uses, and regulation of environmental water
- all basin regions to have the same standard of compliance, metering and measurement as the Murray system
- no further water removed, because water is the key economic driver of the region and a significant contribution to water recovery has already been made (Edward River Council, 2019a).

Council further identifies biosecurity as a key natural resource management issue, with invasive weed management being a key priority to protect agricultural lands in the area, as well as native species, waterways, and parks (Edward River Council, 2021). This issue also emerged during SIA consultation, with some stakeholders flagging the potential for construction activities to introduce pests and weeds via vehicle movements.

5.2.4 Demographic profile

In 2021, Edward River LGA had a population of 8,456 persons. The proportion of people who identify as Aboriginal and/or Torres Strait Islander in Edward River LGA was 4.8 per cent (410 people) which was a higher proportion than for NSW (3.4 per cent).

Overall, the residents of Edward River LGA are characterised by a higher proportion of people aged over 65 years (24.8 per cent) compared to NSW (17.6 per cent). This is also reflected in a higher median age (46 years) compared to NSW (39 years).

In 2021, there is a higher proportion of couple families without children in Edward River LGA (48.8 per cent) compared to NSW (37.9 per cent) which is reflective of an older age profile.

5.2.4.1 Population projections

According to the NSW DPE Population Projections the population in Edward River LGA is expected to decrease slightly by 0.7 per cent (62 people) by 2041 (DPE, 2022). Overall, the population in Edward River LGA has remained stable over the past 10 years, however, nearby Local Government Areas such as Berrigan, Murrumbidgee and Murray River, have all seen higher rates of growth (ABS, 2012) (Edward River Council, 2021) (ABS, 2022). Outlined in the *Edward River 'Our Region, Your Say' Community Consultation Report*, attracting and retaining younger residents is a key challenge for the region (Edward River Council, 2021).

5.2.4.2 Socio-economic disadvantage

The ABS produces four socio-economic indices for areas (SEIFA) based on Census data, which identify areas of relative advantage and disadvantage. The Index of Relative Socio-Economic Advantage/Disadvantage (IRSAD) was examined for suburbs in the local and regional study area.

Socio-economic advantage and disadvantage are defined broadly by the IRSAD in terms of people's access to material and social resources and their ability to contribute to society. To capture this broad definition, the IRSAD captures a range of data points, including income, education, employment, occupation, and housing.

The IRSAD divides a population into ten equal groups, called a decile. The lowest scoring 10 per cent of these groups are given a decile number of 1, which indicates the highest level of disadvantage, and the highest scoring 10 per cent of areas are given a decile of 10, which indicates the highest level of advantage.

Table 5.1 shows decile scores for the local and regional study area in NSW. In 2021, Conargo and Wanganella both scored decile 7, which indicates a moderate to high level of advantage. Edward River LGA scored 4 indicating a moderate level of disadvantage.

Table 5.1 Index of Socio-Economic Advantage and Disadvantage, 2021

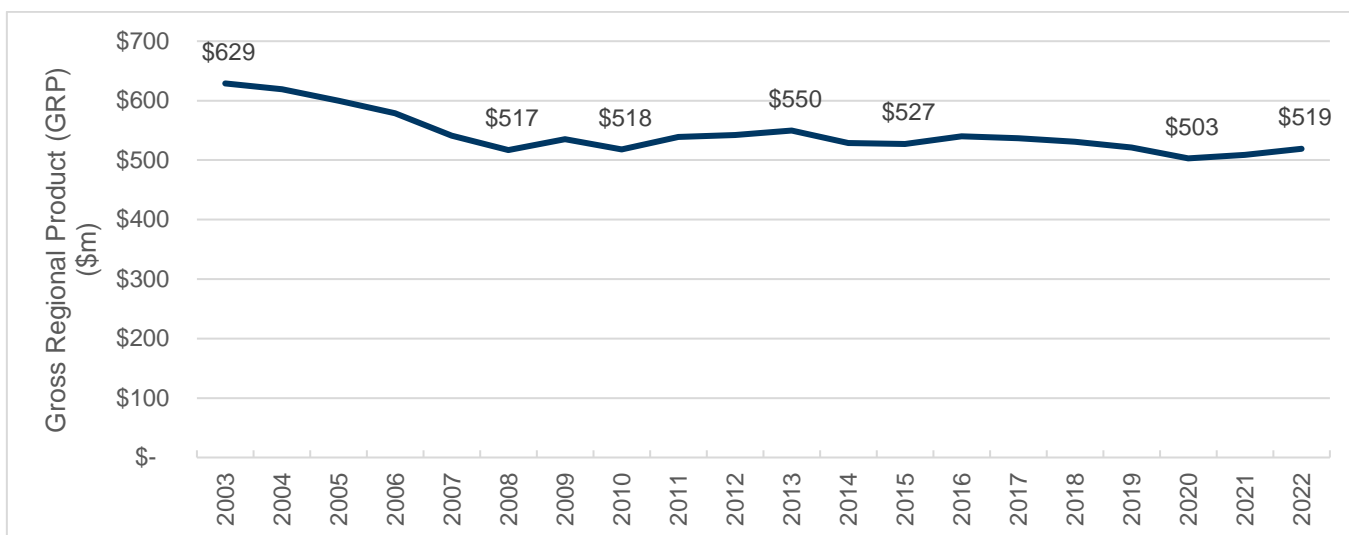
	Conargo	Wanganella	Edward River LGA
Decile within NSW	7	7	4

5.2.5 Economic profile

5.2.5.1 Gross Regional Product (GRP)

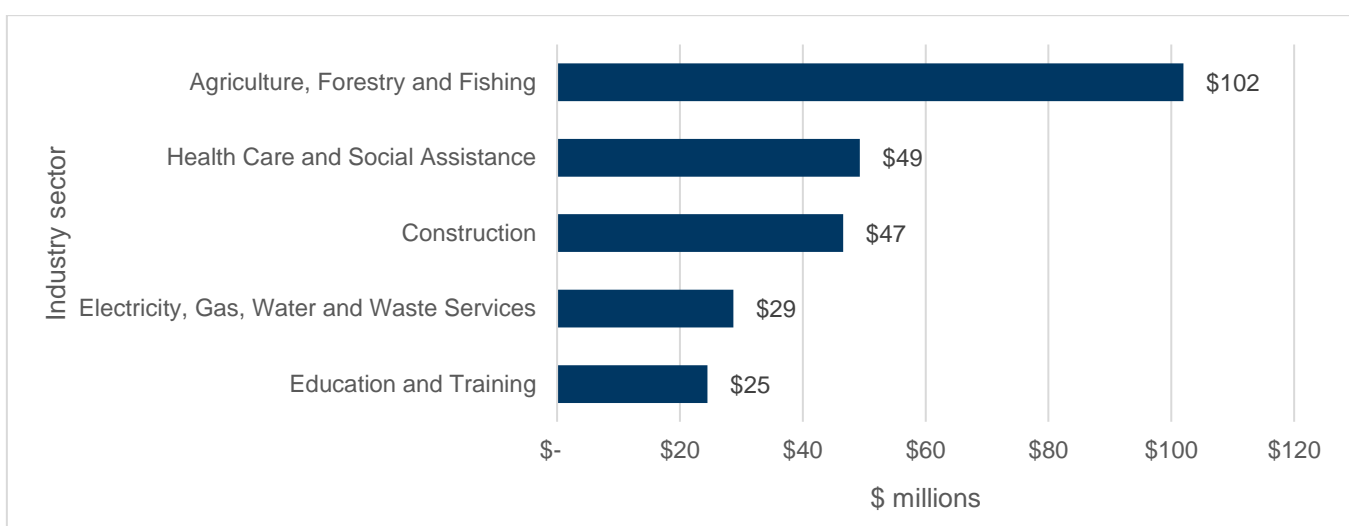
The Riverina Murray region is known as Australia's food bowl and is the largest value adding agricultural region in NSW (Edward River Council, 2019b). As shown in Figure 5.2, Edward River LGA's Gross Regional Product (GRP) has slowly declined since 2002, reaching a low point in 2020, at \$503 million. Since then, GRP in Edward River LGA has steadily and slowly trended upwards, with the most recent figure of \$519 million in 2022 (.id, 2022).

In the 2021/22 financial year (FY), Agriculture, Forestry and Fishing was the largest value adding industry sector at \$102 million, indicating high productivity within the sector (see Figure 5.3). This was followed by Health Care and Social Assistance at \$50.9 million, and then Construction at \$43.7 million.



Source: (.id, 2022)

Figure 5.2 Gross Regional Product (GRP), Edward River Council, 2003-2022



Source: (.id, 2022)

Figure 5.3 Value added by industry sector, Edward River Council 2021/2022 FY

5.2.5.2 Industry and business profile

There is a diversity of agribusinesses in the Edward River LGA. A total of 43 agricultural commodities are produced across the Edward River LGA with the top agricultural commodities by gross value for the 2020/21 FY including wheat, livestock (sheep, lambs, cattle and pigs), barely, milk, rice, wool, and vegetables (carrots, tomatoes and onions) (NSW Department of Primary Industries, 2022). During SIA consultation, it was noted that because many of these are higher yielding crops and require higher volumes of water, many commercial operations are reliant on the Billabong Creek for a stable and affordable water supply (see section 4.2.1).

A healthy agricultural industry in Edward River LGA supports the performance of secondary industries, such as manufacturing, processing, canning and transport, as well as interrelated industries and sectors such as the hospitality and tourism (Edward River Council, 2021). In 2021, Edward River LGA employed a total of 44 people in agricultural supporting industries (NSW Department of Primary Industries, 2022). Being the leading sector within the region, the health of agribusinesses was noted to have many discernible knock-on effects to other sectors, impacting way of life across local communities. For example, during SIA consultation stakeholders described the region as still recovering from of the socio-economic effects of the Millennium Drought, including population loss, businesses running at a loss, and job losses with the SunRice Mill closing (see section 4.2.1). Water reliability has also been compounded by water prices and global market conditions, which has in turn imposed larger scale shifts and necessitated agribusiness adaptability within Edward River (Edward River Council, 2019b).

It was also noted within SIA consultation that there are a number of farmers that also run commercial red gum apiaries along Billabong Creek.

5.2.5.3 Tourism

The Edward River LGA is also supported by a visitor economy, where the Deni Ute Muster attracts 20,000 people to Deniliquin and surrounds yearly. The Deni Ute Muster has been running for 23 years and is currently the largest event in the Murray Region. It is estimated that over the event weekend, \$6 million is spent within the region, and of that spent at the event, \$100,000 is donated to local community groups (Deni Ute Muster, 2022).

Another key aspect of tourism and the visitor economy in the region relates to water-based activities along the rivers and creek, which includes water skiing, kayaking, and recreational fishing (SIA consultation, 2022). Water is a key aspect of other recreational activities that attract visitors, such as camping and birdwatching, riverboats, and riverside tourist parks (Murray Regional Tourism, 2018). There are several fishing events held in the region including the Edward Kolety Fishing Challenge in Deniliquin and Kids go fishing day in Jerilderie which are key tourist attractors to the region. However, anecdotal evidence suggests that unpredictable river heights are impacting on tourism due to limiting the use of river boats in waterways (Edward River Council, 2021).

5.2.5.4 Industry of employment

As shown in Figure 5.4, the primary industry by employment in the Edward River LGA is Agriculture, Forestry and Fishing (17.6 per cent) (ABS, 2022). In 2022, there were a total of 1,011 businesses in Edward River LGA, of these 358 were related to agriculture, forestry and fishing. Of these agriculture, forestry and fishing businesses in Edward River 242 were non-employing businesses (.id, 2022). During SIA consultation, it was reported that for smaller agricultural operations, employee numbers fluctuate during harvest seasons, where the main period is between late October and December, and at Easter time (SIA consultation, 2022).

Industry	Edward River LGA	NSW
Agriculture, Forestry and Fishing	17.6%	2.0%
Health Care and Social Assistance	15.5%	14.4%
Retail Trade	8.9%	9.0%
Education and Training	8.2%	8.7%
Construction	6.9%	8.6%
Professional, Scientific and Technical Services	3.2%	8.9%

Figure 5.4 Top industry of employment

As described by community members during SIA consultation, since the Millennium Drought, many employees and employers in the agricultural sector began to diversify and/or develop new skills, to remain economically resilient and flexible during times of low water supply (SIA consultation, 2022). It was also described that the combination of automated farming practices, and reduced yields as a result of reduction in water use, has resulted in fewer direct agricultural employment opportunities in the area.

The need to diversify businesses and reduction in employment opportunities is evident in the apparent restructuring of the regional workforce. For example, from 2001 to 2016 in Deniliquin, there was a reduction in direct agricultural employment (-73.1 per cent, -791 FTE), an increase in indirect agricultural employment (+74.7 per cent, +70 FTE) and government services (+18.5 per cent, +94 FTE) (Murray-Darling Basin Authority, 2018).

5.2.5.5 Labour force and unemployment

The total labour force in Edward River LGA was 3,918 people in 2021. Of this 96.3 per cent were employed, leaving 3.6 per cent unemployed. The majority of people were employed full-time (61.2 per cent) with 32.8 per cent being employed part-time. The overall labour force participation rate was 56.2 per cent, which was similar to NSW (58.7 per cent).

As shown in Figure 5.5, the unemployment rate in Edward River LGA have seen significant fluctuations over the last decade and have been consistently higher than the average rate for NSW. The unemployment rate in Edward River LGA peaked at 11.1 per cent in March 2015, and has seen another two peaks in 2018 and 2021. Since September 2021 unemployment has trended downwards in Edward River LGA to 4.3 per cent in June 2022.

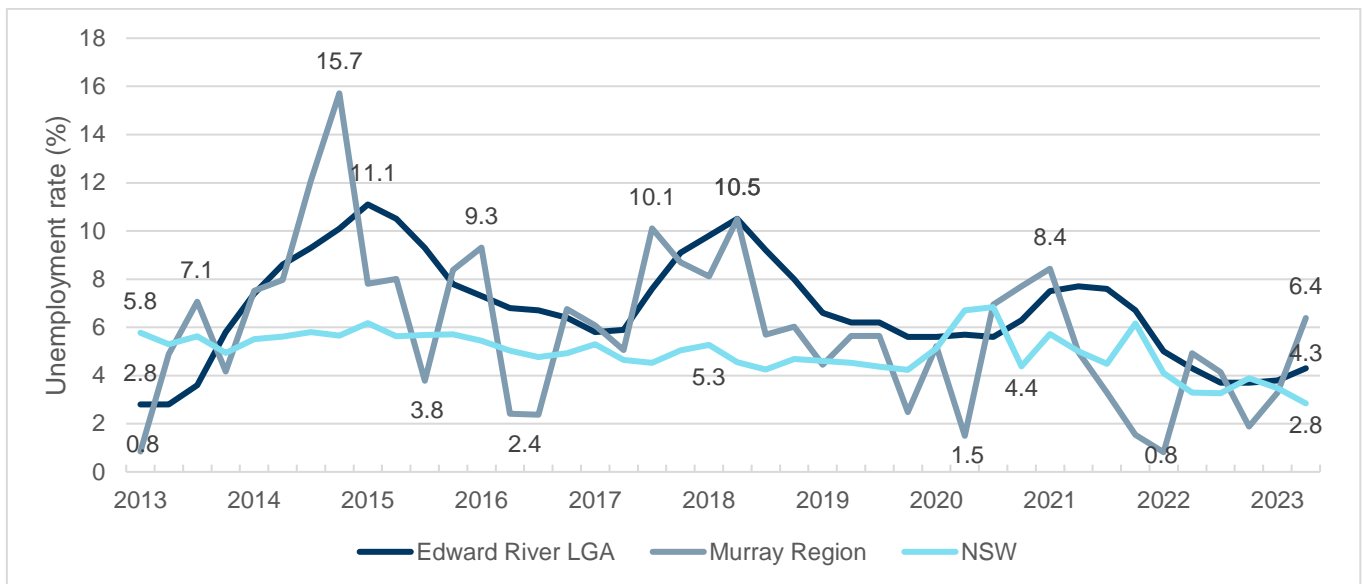


Figure 5.5 Unemployment rate 2013-2023

5.2.6 Housing and accommodation

The majority of people in Edward River LGA owned their own home (either fully or with a mortgage) (70.0 per cent) which was higher than NSW (64.0 per cent). Most dwellings in Edward River are also separate detached style housing (90.0 per cent).

In 2021, the median weekly rent in Edward River LGA was \$220 per week, which was less than NSW (\$420). Edward River LGA had a higher proportion of unoccupied dwellings (13.6 per cent) compared to NSW (9.4 per cent). As of December 2023, the residential vacancy rate for the Murray Region was 1.1 per cent (SQM Research, 2023). As of June 2023, the median sales price for a property in Edward River LGA was \$371,000 (Communities and Justice, 2023).

As of January 2024, there was approximately 26 accommodation providers including motels, caravan parks and bed and breakfasts located in the regional study area with the majority located in Deniliquin. Furthermore, a search of short-term accommodation providers (including Airbnb and Stayz) indicated nine properties available for short term stays in Deniliquin and two properties available in Jerilderie.

During SIA consultation it was noted that accommodation vacancy in Deniliquin is low. Events such as the Deni Ute Muster which is held during September often means accommodation providers are at full capacity during that time. Furthermore, across the region seasonal workers on farms often require accommodation during harvest season with some staying at the property, in caravan sites or in motel accommodation in Deniliquin and other surrounding towns.

5.3 Key findings

Key findings from the local and regional baseline most relevant to the SIA include:

- Billabong Creek is a culturally important body of water for traditional owners, where Aboriginal stakeholders have expressed a high interest in the appropriate management of Billabong Creek for cultural flows of water.
- Billabong Creek provides an important supply of domestic and commercial water for towns, villages, and irrigators in area.
- Water is the “life blood” of the region and supports the economy and thus lifestyle and wellbeing for surrounding communities.
- Most irrigation water licences in the Yanco Creek system are general security, stock and domestic, and supplementary licences used for seasonal crops.
- The regional community is highly engaged in water matters, however, some are experiencing fatigue from the ongoing need to advocate for their interests.
- Wanganella is the only site which has nearby housing, recreational use, accommodation, and other social infrastructure. The weir is also located within a recreation reserve.

- The regulator sites are located within or nearby to land used for agricultural operations.
- The local and regional study areas are characterised by agricultural lands, waterways, and riverine forests.
- Water recreation is common in the local and regional study areas, including fishing, kayaking, and boating.

6. Social impact assessment

This section presents an assessment of the potential social impacts that may result due to construction and operation of the proposal. Impact identification and description has been informed by various sources of information and have been assessed in accordance with the impact assessment methodology outlined in section 2.

6.1 Property and landholders

Construction of the proposed Hartwood and Wanganella regulators as well as the flood bypass channel at Wanganella would involve temporary land requirements which may result in the temporary disruption of access to land for some private landowners. NSW DCCEEW has been consulting with affected landowners about property impacts to minimise and avoid impacts to landholders as much as possible. This includes designing an underground transmission line through one property to avoid impacts from an overhead transmission line.

Construction vehicles may also be required to move between paddocks, requiring gates to be opened/closed, or use of temporary cattle grids. Existing access tracks for site access during construction and the maintenance of new infrastructure during operation may also result in temporary disruptions and an inconvenience for some private landowners. It is expected that all properties impacted by temporary land requirements would be restored/rehabilitated following construction, to enable current land use and activities to resume. NSW DCCEEW will continue to consult with affected landholders during the pre-construction and construction phase, which is Consultation for the EIS noted a desire for landholders to be engaged and kept actively informed regarding the projects that are likely to directly impact them or their property. As outlined in the *Consultation report* (DCCEEW, 2024) NSW DCCEEW will continue to consult with affected landholders during the pre-construction and construction phases and will be included in the decision-making process regarding new infrastructure on their property. This is expected to assist managing disruptions to affected landholders.

As outlined in the *Land Use Assessment* (GHD, 2024) soil disturbance (construction) and vehicle movements (construction and operation) have the potential to introduce and spread weeds, pests and diseases. As described in section 5.1, the private properties impacted by land requirements are predominantly used for agricultural production (livestock grazing). The introduction of pests due to the potential mismanagement of water in Wanganella Swap was also raised as a concern during SIA consultation (section 4.2.1). If not managed properly, this biosecurity risk has the potential to impact agricultural productivity or viability, which may in turn impact revenue for these businesses, increase property management requirements.

There is also potential for power disturbances for nearby residents and businesses as a result of upgrades to transmission lines during construction. These disturbances, however, are likely to be temporary in nature and therefore minor. It is expected that that affected residents and businesses would be notified prior to work being completed.

6.2 Changes to local amenity

Changes to local amenity may result from construction activities including vehicle movements, earthworks, and establishment of a construction activity zones. Given the somewhat isolated location of the proposal sites, changes to local amenity are not expected to affect most community members. However, there may be some impacts to recreational users of Wanganella Recreation Reserve and the creek at times, due to increased noise, vibration and dust, and visual impacts.

Although most changes to local amenity would be temporary, some recreational users of Wanganella Recreation Reserve may be disturbed at times by intermittent construction noise. Noise may be particularly noticeable given the existing environment is relatively quiet, and users likely choose to visit the reserve to enjoy the peaceful environment. There is potential for some recreational users of the reserve and creek to be deterred from using the area during construction.

Given the Hartwood site is relatively isolated from sensitive receivers, amenity changes are not expected to affect most community members. Recreational users of the creek who access the site and surrounds may be disturbed by amenity changes during construction. However, creek users are expected to find other places along the river for recreational activities during construction.

During construction, there would be removal of some vegetation in areas surrounding the sites. During operation, new regulator infrastructure, coupled with vegetation removal, may lead reduce visual amenity of the area for, users of Wanganella Recreation Reserve, and users of the creek in close proximity to the sites.

The natural environment and ambience was cited during SIA consultation as an important aspect of the recreational experience in the area (section 4.2.1). There is potential for changed views to decrease some recreational user's enjoyment of the areas. However, most people are expected to adapt to visual changes over time, particularly as replanted vegetation grows.

6.3 Access and connectivity

During construction, equipment and personnel would require daily access to the work sites via existing access tracks. The *Land Use Assessment* (GHD, 2024) found that construction activities including the movement of heavy vehicles and equipment could potentially result in damage to internal roads and crossings if not managed appropriately. However, upgrades to the existing access tracks would be undertaken prior to construction work commencing to reduce any potential damage.

The Hartwood site would be accessed via two existing access tracks. The west bank track is located on Crown Land while access to the east bank would be via a small private creek crossing. This has the potential to temporarily impact access for surrounding private landowners who use the crossing. The Wanganella site would be accessed via two existing tracks. Both access tracks are located on Crown Land. Access to the site via the northern track may potentially reduce access to Wanganella Weir for recreational users of the creek and adjacent Wanganella Recreational Reserve.

During SIA consultation some community members were interested in how the proposal would impact access for fishing and recreation. Some noted that better access to recreational areas via new or improved access tracks would be considered a benefit for recreational users at Wanganella Recreation Reserve. However, some community members also noted concern about potential trespassers of private properties due to new or improved access tracks.

Overall, construction activities may temporarily affect access for some property owners, users of Wanganella Recreation Reserve, and users of the creek during construction. However, upgrades to access tracks are expected to benefit affected property owners, as well as users of Wanganella Recreation Reserve, due to increased accessibility and safety over the longer term.

6.4 Community wellbeing and cohesion

A key objective of the proposal is to provide more reliable and efficient delivery of water in Billabong Creek.

SIA consultation found that water security is inextricably linked to community wellbeing for local communities (section 4). Overall, improved water management would contribute to reliable water delivery for drinking water and domestic supply and reduce the need for water buybacks. This is expected to enhance community wellbeing and contribute to community values.

Some stakeholders have raised concerns about potential interruptions to water supply during construction, and changed access to water for both domestic and stock use during operation (section 4.2.1). While the management of water will be guided by an operations plan, during consultation some stakeholders felt there should be more tangible parameters in place to ensure sufficient flows in Billabong Creek (section 4.2.1).

During operation, improved environmental flows in Billabong Creek would improve the creek and environmental conditions. This may lead to improved recreational experiences for:

- Recreational fishers, through improved fish stock due to improved fish passage
- Bushwalkers, birdwatchers, and kayakers, through improved quality of vegetation health.

Local and regional communities highly value the river and water-based recreation, particularly at Wanganella (sections 4.2.1 and 5.1.1.2). Improved environmental flows are therefore, expected to contribute to community and recreational values, as well as community wellbeing.

6.5 Indigenous communities and values

The *Aboriginal Cultural Heritage Assessment (ACHA)* (Austral Archeology, 2024) identified the following Aboriginal sites in close proximity to the weir sites:

- Hartwood - five cultural scar trees, four earth mounds, and one potential archaeological deposit (PAD) which is associated with one of the scar trees
- Wanganella - two cultural scar trees.

The ACHA recommends a range of mitigation measures which are based on consultation with the local Aboriginal community and findings of the archaeological survey. These are summarised below:

- avoid all ground-disturbing works to all identified sites
- avoid damage to identified scar trees and involve Traditional Owners in monitoring works to ensure the protection of these sites
- prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to manage potential impacts to identified sites due to the proposed works
- implement an unexpected finds process
- continue to inform Aboriginal stakeholders about the management of Aboriginal cultural heritage within the study area throughout the completion of the project.

Implementation of these mitigation measures is expected to support avoiding impacts to tangible Aboriginal cultural heritage values for local Aboriginal stakeholders.

NSW DCCEEW implemented a comprehensive Aboriginal Community Engagement Strategy to identify and engage appropriate Aboriginal stakeholders about the project (DCCEEW, 2024). NSW DCCEEW also prepared an Aboriginal Cultural Strategy to guide active participation of First Nations people in project matters affecting their cultural heritage. This strategy has been pivotal in safeguarding cultural practices, language, knowledge, and identity throughout the project's assessment phase (DCCEEW, 2024).

During NSW DCCEEW consultations, Aboriginal stakeholders expressed interest in cultural flows and how the proposal would contribute to them (section 4.2.1). Some stakeholders also expressed concern about the scoring process for the shortlisted options, and cultural scores were not consistent with the broader environmental scores. The proposal has the potential to contribute to cultural values for local and regional Aboriginal communities through improving environmental and cultural flows in Billabong Creek. The relationship between the health and wellbeing of Aboriginal people and the health of Country is well documented in literature (for example in (Salmon, et al., 2018)). The proposal, therefore, has the potential to contribute to enhanced spiritual, cultural, and wellbeing outcomes for Aboriginal people.

6.6 Economy, business and employment

As a key objective of the proposal, improved water management in Billabong Creek is expected to improve water delivery, reliability and timing, as well as reduce the need for water buy backs. Improved environmental outcomes and water availability in the study area is expected to benefit a range of industries and businesses in the region. In particular, agricultural operations which are dependent on the reliable supply of water to operate their businesses, and have experienced periods of lost revenue during times of extended drought (section 4.2.1 and section 5.2.5). During NSW DCCEEW consultation, concerns were raised about potential impacts to water quality of the creek. It was also identified in SIA consultation that the health of the creek systems has a direct impact on the quality of output from agricultural operations (sections 4.2.1 and 5.2.5). For example, when water levels in the creek systems are too low, stock can get “bogged” (i.e. stuck in mud), and often do not survive (section 4.2.1). Minimum flow rates established for the operation of the new regulators would mean stock bogging would be less likely.

Improved environmental conditions and recreational experience for river users may also attract more visitors to the area. As discussed in section 5.2.5, the local visitor economy predominantly relates to water-based activities. This may benefit nearby accommodation providers and potentially increase visitation to small businesses in the local and regional area, as well as businesses which rely on Billabong Creek.

During construction, the proposal will require a wide range of consumables, goods and services. Procurement opportunities from local and regional businesses in the construction industry could generate flow on employment opportunities. As discussed in sections 4.2.1 and 5.2.5, there is interest in local and regional businesses in contracting opportunities.

The construction workforce is expected to fluctuate depending on the phase of construction and associated activities. It is anticipated that up to 26 personnel per day would be on site over the 18-month construction period. This may provide increased employment opportunities for residents in the local and regional study area, particularly those in the construction industry. While a local workforce would be prioritised for employment opportunities during construction, some roles would likely require specialised skills and may need to be sourced from outside the local and regional study areas.

6.7 Housing and accommodation

As outlined in section 6.6, some construction roles may need to be sourced from outside the local and regional study area. Non-resident workers would be required to stay in accommodation facilities within a safe driving distance of one hour. Deniliquin would be the preferred option as the largest town within driving distance of the proposal sites. Other nearby towns such as Jerilderie, Finley and Echuca may also be considered if accommodation in Deniliquin is unavailable.

As discussed in section 5.2.6, there are approximately 11 accommodation facilities and an additional nine short-term accommodation providers (Airbnb) available in Deniliquin. Consultation for the SIA (section 4.2.1) indicated that short-term accommodation vacancy in Deniliquin is generally low, and usually at full capacity during times of local and regional events. To manage workforce accommodation impacts and avoid reduced availability for tourists, consultation with local accommodation providers will be required in the lead up to and during construction regarding workforce accommodation requirements.

6.8 Heritage values

Construction of the proposed new regulators would require demolition of the existing weir structures within the creek at Hartwood Weir. As outlined in the *Non-Aboriginal Heritage Assessment* (Jacobs, 2024) the existing Hartwood Weir is of heritage significance and is a locally listed heritage item. The existing weir is one of the oldest weirs in the area and situated within the original extent of the socially significant Hartwood Property. Changes to the existing weir may impact local community values associated with the weir's heritage, and history of the area. The Non-Aboriginal Heritage Assessment recommends a range of mitigation measures to avoid or manage heritage impacts. This includes exploring interpretation opportunities at each weir site, such as signage, embedded interpretation, artwork and interpretive display to provide information about the heritage significance of the site, fabric, value and history of the site. This is also expected to support community values associated with local heritage and history.

6.9 Summary of impacts

This section assesses the social impacts identified in sections 6.1 to 6.8. The magnitude and likelihood have been determined in accordance with the methodology outlined in section 2.5. The significance rating shown in section 2.5 has been applied to each social impact based on the outcome of this assessment.

Table 6.1 Social impact assessment – construction and operation

Potential impact description	Stakeholders affected	Proposal phase	SIA Guideline social impact category	Magnitude	Likelihood	Pre mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Property and landholders										
Temporary land use changes due to the requirement for new transmission lines and upgrading and use of access tracks may lead to disruptions in usual activities and be an inconvenience for some landowners.	Private landowners providing access to Hartwood and Wanganella proposal sites	Construction	Livelihoods Decision-making systems	Minor	Likely	Negative Medium	<ul style="list-style-type: none"> – Consultation with affected land owners – Communication and Engagement Plan 	Minimal	Unlikely	Negative Low
Construction activities and the associated movement of vehicles and machinery between properties could potentially lead to the introduction and spread of pests, weeds and diseases. The introduction of pests, weeds and diseases poses a potential biosecurity risk for adjacent and other nearby agricultural properties if not managed properly.	Landowners at all proposal sites Adjacent landowners to all proposal sites	Construction Operation	Livelihoods	Moderate	Unlikely	Negative Medium	<ul style="list-style-type: none"> – Weeds and pathogen management outlined in the CEMP – Communication and Engagement Plan 	Minor	Unlikely	Negative Low
Potential power disturbances for nearby residents and businesses due to upgrades of transmission lines may lead to temporary power disturbances and outages.	Nearby residents and businesses	Construction	Livelihoods	Minor	Unlikely	Negative Low	<ul style="list-style-type: none"> – Communication and Engagement Plan 	Minor	Unlikely	Negative Low
Changes to local amenity										
Local amenity in close proximity to construction works may be reduced including for recreational users of Wanganella Recreation Reserve and the creek temporarily. While this may deter some users from visiting these areas at times during construction, most users are expected to find other places along the creek to use during construction. Removal of vegetation may reduce visual amenity for a longer period, however most people are expected to adapt to this as replanted vegetation grows.	Users of Wanganella Recreation Reserve and users of the creek around the sites	Construction	Way of life Surroundings	Minor	Possible	Negative Medium	<ul style="list-style-type: none"> – Communication and Engagement Plan – Revegetation of disturbed sites 	Minor	Unlikely	Negative Low
Access and connectivity										
Construction activities may temporarily affect access for some property owners, users of Wanganella Recreation Reserve, and users of the creek during construction.	Property owners adjacent to sites and access tracks Users of Wanganella Recreation Reserve and the creek surrounding the sites	Construction	Accessibility Way of life Surroundings	Minor	Possible	Negative Medium	<ul style="list-style-type: none"> – Traffic Management Plan (TMP) – Communication and Engagement Plan 	Minor	Unlikely	Negative Low
Upgrades to access tracks is expected to benefit affected property owners, as well as users of Wanganella Recreation Reserve, due to increased accessibility and safety over the longer term.	Property owners adjacent to sites and access tracks Users of Wanganella Recreation Reserve and the creek surrounding the sites	Operation	Accessibility Health and wellbeing	Minor	Possible	Positive Medium	<ul style="list-style-type: none"> – Traffic Management Plan (TMP) – Communication and Engagement Plan 	Minor	Possible	Positive Medium
Community wellbeing and cohesion										
Improved water management contributing to community wellbeing and increased water delivery for drinking water and domestic supply.	Towns / villages dependent on Billabong Creek for stock and domestic water Irrigators on Billabong Creek	Construction Operation	Health and wellbeing Community Livelihoods	Moderate	Likely	Positive High	<ul style="list-style-type: none"> – Water management measures – Communication and Engagement Plan 	Major	Likely	Positive High
Improved environmental flows contributing to enhanced recreational values and community wellbeing for local and regional communities who highly value the creek and water-based recreation.	Local and regional communities Wanganella Recreation Reserve users and creek users	Operation	Health and wellbeing Community Surroundings	Moderate	Likely	Positive High	<ul style="list-style-type: none"> – Water management measures – Communication and Engagement Plan 	Major	Likely	Positive High

Potential impact description	Stakeholders affected	Proposal phase	SIA Guideline social impact category	Magnitude	Likelihood	Pre mitigation significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Aboriginal communities and values										
If inadequately managed there is potential for the proposal to disturb or damage both registered and non-registered Aboriginal heritage sites. This has the potential to impact both tangible or intangible cultural values associated with these areas, which has the potential to impact wellbeing for Aboriginal communities.	Local and regional Aboriginal stakeholders	Construction Operation	Culture	Moderate	Possible	Negative Medium	<ul style="list-style-type: none"> Aboriginal Cultural Heritage Management Plan (ACHMP) Continued engagement with local Aboriginal stakeholders 	Moderate	Unlikely	Negative Low
The proposal has the potential to contribute to cultural values for local and regional Aboriginal communities through improving environmental and cultural flows of Billabong creek. This may contribute to enhanced spiritual, cultural and wellbeing outcomes for Aboriginal people.	Local and regional Aboriginal stakeholders	Construction Operation	Culture	Major	Likely	Positive High	<ul style="list-style-type: none"> Water management measures Continued engagement with local Aboriginal stakeholders 	Major	Likely	Positive High
Economy, business and employment										
Improved environmental outcomes and water availability in the study area is expected to benefit a range of industries and businesses in the region, particularly agricultural operations.	Regional businesses including agricultural operations and irrigators on Billabong Creek	Operation	Livelihoods	Major	Possible	Positive High	<ul style="list-style-type: none"> Water management measures Communication and Engagement Plan 	Major	Likely	Positive High
Improved environmental conditions and recreational experience for river users may attract more visitors to the local and regional area. This may benefit nearby accommodation providers and potentially increase visitation to small businesses.	Local recreational and tourism based businesses	Operation	Livelihoods	Minor	Possible	Positive Medium	<ul style="list-style-type: none"> Water management measures Communication and Engagement Plan 	Moderate	Possible	Positive Medium
Procurement opportunities for local and regional businesses may contribute to the local and regional economy, and provide employment opportunities for local residents.	Businesses and workforce in the local regional study area	Construction	Livelihoods	Minor	Unlikely	Positive Low	<ul style="list-style-type: none"> Maximise opportunities for local and First Nation employment and business participation 	Minor	Possible	Positive Medium
Housing and accommodation										
Potential for reduced availability of short term accommodation for non-resident workers in nearby towns.	Accommodation facilities and tourism industry in the regional study area	Construction	Livelihoods	Minor	Possible	Negative Medium	<ul style="list-style-type: none"> Consult with local accommodation providers 	Minor	Unlikely	Negative Low
Heritage – Non-Aboriginal										
Removal of the existing Hartwood weir would impact the locally listed heritage item. This change may impact local community values associated with the weir's heritage, and history of the area.	Local and regional communities	Construction Operation	Culture	Moderate	Possible	Negative Medium	<ul style="list-style-type: none"> Non-Aboriginal heritage management measures including interpretation 	Minor	Unlikely	Negative Low

6.10 Cumulative impacts

This section presents a summary of the potential cumulative social impacts and benefits that may result from the proposal and other key projects in the social locality. There is potential for the proposal to overlap or occur concurrently with other projects in the social locality.

Given the isolated location of each proposal site, there would not be cumulative amenity or access impacts on local or regional communities during construction. However, from a social perspective, there is some potential for competition for skilled labour if there are other projects being constructed in the region at the same time. This could result in more roles being filled by non-residents, leading to increased demand for housing and accommodation in the region. As an existing issue (see section 4.2.1), competition for skilled labour can be challenging to manage for individual proponents. However, it is expected that demand for accommodation can be managed through early consultation with local accommodation providers (refer to section 7).

During operation, the proposal is expected to support an overall healthier environment and waterways in the region, and increased availability of water resources. Together, this is expected to support community health and wellbeing, and support the region's economy.

7. Mitigation and management of impacts

The social impacts and benefits identified and assessed in this report will be managed and mitigated through a range of measures and strategies recommended in Table 7.1, and by those recommended in other EIS specialist studies.

The management strategies primarily focus on the social impacts and benefits with a higher significance rating, or those with potential to have higher significance if appropriate management strategies are not in place. As described in section 2.6, the management strategies have been developed based on industry standards, practices and guidelines, reference to the measures implemented on other comparable projects, and feedback from stakeholders during consultations.

Table 7.1 below outlines the social impact mitigation and management measures.

Table 7.1 Recommended mitigation and enhancement measures

Issue / impact	Mitigation measure	Responsibility	Timing
Impacts and benefits for local and regional communities	<p>NSW DCCEEW will continue to manage and deliver the Communication and Engagement Plan (C&EP) in the lead up to and during construction of the proposal. This will help to ensure that:</p> <ul style="list-style-type: none"> – the community and stakeholders have a high level of awareness of all processes and activities – accurate and accessible information is made available – a timely response is given to issues and concerns raised by the community – feedback from the community is encouraged – opportunities for input are provided. 	DCCEEW	Pre-construction / construction
Amenity and access impacts for local communities and landholders	<p>A communication management plan will be developed by the primary contractor in accordance with the C&EP and implemented to define the specific requirements for engagement during delivery of the proposal.</p> <p>A communication management plan will be developed to ensure that:</p> <ul style="list-style-type: none"> – landowners/landholders, community members and businesses affected by construction activities (eg property impacts, cultural heritage impacts, access changes, noise, vibration, dust) are notified in a timely manner about impacts – accurate and accessible information is made available through multiple channels (eg printed fact sheets and notification letters, email, phone calls, online) – feedback from the community is encouraged – opportunities for input are provided where appropriate. <p>The communication management plan will define the requirements for the complaints management system to be implemented throughout the duration of the proposal, including 24-hour, seven days a week phone line, postal and email address for written enquiries, and publication of contact details.</p>	DCCEEW Works contractor	Pre-construction / construction
Impacts to and benefits for Aboriginal communities	<p>NSW DCCEEW will continue to engage with local Aboriginal stakeholders about the proposal.</p> <p>NSW DCCEEW will continue to manage and deliver tailored and targeted engagement with Traditional Owners and Aboriginal communities and stakeholders in accordance with the C&EP. This will:</p> <ul style="list-style-type: none"> – provide mechanisms for Aboriginal people and communities to provide input to the proposal 	DCCEEW	Pre-construction / construction

Issue / impact	Mitigation measure	Responsibility	Timing
	<ul style="list-style-type: none"> – draw upon perspectives, knowledge, relationships, cultural practices, and wisdoms of Aboriginal stakeholders to minimise potential disruptions from the proposal – demonstrate how input provided is incorporated into decision making and planning for the proposal – identify employment, training, and procurement opportunities associated with the proposal – protect and mitigate harm of Aboriginal cultural heritage and spiritual values within the influence of the proposal scope. 		
Local and First Nation employment and business opportunities	<p>NSW DCCEEW will maximise the participation of local, regional and First Nation businesses in the proposal, such as:</p> <ul style="list-style-type: none"> – preferential local and First Nation participation inclusions in tender documents which outline the sub-contracting and local employment goals that construction contractors would need to deliver – promotion of supply and employment opportunities through local industry channels, employment organisations and local Aboriginal organisations. 	DCCEEW	Pre-construction / construction
Non-resident workforce accommodation requirements	The construction contractor will share information with local accommodation providers about any non-resident workforce accommodation requirements in a timely manner.	Works contractor	Pre-construction / construction

8. Conclusion

This SIA has provided an assessment of the social impacts of the construction and operation of the proposal. The report has identified and addressed the key social impacts associated with the proposal and provides a set of recommended mitigation and enhancement measures. The report satisfies the social impact assessment requirements as identified in the SEARs for the proposal and has been prepared in accordance with the requirements of *Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2021).

The key positive social impacts with the potential to occur during construction and operation are primarily related to procurement opportunities for local and regional businesses, and improved water, creek and environmental conditions.

The key social impacts with the potential to occur during construction and operation are summarised as follows:

- Changes to access for some landowners due to construction vehicle accessing the site. This may be an inconvenience for some landowners and may lead to lost time if access is not appropriately coordinated.
- Potential temporary reduced water delivery and availability.
- Temporary disruptions and inconveniences for some nearby residents and users of recreation areas due to changes in access and increased construction traffic.
- Reduced amenity including noise, vibration, dust and visual impacts for users of nearby recreational areas.
- Potential reduced availability of short-term accommodation for tourists due to non-resident workers.
- Loss of local heritage potentially impacting community values through the removal of heritage items (Hartwood Weir).

The key positive social impacts with the potential to occur during operation are summarised as follows:

- Improved water management, delivery and availability contributing to business and economic outcomes, particularly agricultural industries.
- Improved water security of town water supply at Wanganella.
- Providing a water infrastructure alternative that reduces the vulnerability of the local community to potential adverse effects of water buybacks.
- Support community and Aboriginal values associated with environmental protection and flows.
- Support the overall health and wellbeing of communities through improved water management and quality.
- Support the current and future population and communities of surrounding areas through improved water management.
- Improved access and safety to community and recreation facilities, supporting opportunities for participation in community activities, and active and passive recreation.
- Direct and indirect employment opportunities and regional economic growth, supporting livelihoods and wellbeing.

The positive and negative social impacts identified and assessed in this report would be managed and mitigated through a range of measures, including mitigation measures recommended in other EIS technical papers.

The mitigation measures identified in response to potential social impacts, and to enhance positive impacts are summarised below:

- Communication and Engagement Plan (C&EP) – this will ensure community and stakeholders are kept aware, given accurate and up to date information and provide an opportunity for inputs.
- Ongoing consultation and communication with affected community members including landholders, businesses and community facilities in close proximity to the proposal to notify them about construction activities and access changes.
- Local and First Nation participation initiatives.

9. References

- .id, 2022. *Edward River Council Profile*. [Online]
Available at: <https://economy.id.com.au/edward-river/>
- ABS, 2012. *Community profiles*. [Online]
Available at: <https://www.abs.gov.au/census/find-census-data/search-by-area>
- ABS, 2017. *Community Profiles*. [Online]
Available at:
<https://www.abs.gov.au/websitedbs/censushome.nsf/home/communityprofiles?opendocument&navpos=230>
- ABS, 2022. *Community Profiles*. [Online]
Available at: <https://www.abs.gov.au/census/find-census-data/>
- AFA, 2022. *Australian Food and Agriculture*. [Online]
Available at: <https://austfood.com.au/the-business/deniliquin/>
- AGL, 2021. *Our Reconciliation Action Plan*. [Online]
Available at: <https://www.agl.com.au/content/dam/digital/agl/documents/about-agl/who-we-are/our-commitments/agl-reconciliation-action-plan.pdf>
- AITSIS Collection, 2022. *Austlang: Barababaraba*. [Online]
Available at: <https://collection.aiatsis.gov.au/austlang/language/d5>
- Austral Archeology, 2024. *Yanco Creek Modernisation Project: Part 2 - Billabong Creek Regulators New South Wales Aboriginal Cultural Heritage Assessment*, s.l.: s.n.
- Burdge, R. & Vanclay, F., 1996. Social Impact Assessment: A Contribution to the State of the Art. *Impact Assessment*, 14(1), pp. 59-86.
- Communities and Justice, 2023. *Rent and Sales Report - interactive dashboard*. [Online]
Available at: <https://www.facs.nsw.gov.au/resources/statistics/rent-and-sales/dashboard>
[Accessed 2024].
- Cooling, M. & Gippel, C., 2018. *Integrated Hydrological Operations Plan for the Billabong, Yanco and Colombo Creeks - Literature Review and Stakeholder Consultation. Ecological Associates report FL001-1-F*, Albany: Prepared for Murray Local Land Services.
- DCCEEW, 2024. *Consultation report: Yanco Creek Modernisation Project*, s.l.: NSW Government Department of Climate Change, Energy, the Environment and Water.
- Deni Ute Muster, 2022. *Deni Ute Muster - history*. [Online]
Available at: <https://www.deniutemuster.com.au/the-muster/>
- Destination NSW, 2018. *Riverina Murray Destination Management Plan 2018*. [Online]
Available at: https://riverinamurray.com.au/wp-content/uploads/2022/05/Riverina_Murray_DMP_April_2018_DigitalLQ.2.pdf
- DPE, 2022. *Population projections*. [Online]
Available at: <https://pp.planningportal.nsw.gov.au/populations>
- DPE, 2022. *Yanco Creek System operations plan [working draft]*, s.l.: Department of Planning and Environment.
- DPE, 2022. *Yanco Creek System Operations Plan, Yanco Creek Modernisation Project*, s.l.: s.n.
- DPE, 2023a. *Social Impact Assessment Guideline*. [Online]
Available at: <https://www.planning.nsw.gov.au/policy-and-legislation/under-review-and-new-policy-and-legislation/social-impact-assessment>
- DPE, 2023b. *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects*. [Online]
Available at: https://www.planningportal.nsw.gov.au/sites/default/files/documents/2023/GD1944%20SIAG%20-%20Technical%20Supplement_NEW%20VI_14_02_23.pdf
- DPE, 2023. *Riverina Murray Regional Plan 2041*. [Online]
Available at: <https://www.planning.nsw.gov.au/sites/default/files/2023-03/riverina-murray-regional-plan-2041.pdf>
- DPHI, 2021. *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects*, s.l.: s.n.

DPIE, 2022. *Cumulative Impact Assessment Guidelines for State Significant Projects*, s.l.: State of New South Wales through Department of Planning and Environment.

Edward River Council, 2013. *Conargo Local Environmental Plan 2013*. s.l.:NSW Government.

Edward River Council, 2019a. *Edward River Council Advocacy Strategy*, s.l.: s.n.

Edward River Council, 2019b. *Edward River Council Agribusiness Masterplan 2019 - 2024*, s.l.: s.n.

Edward River Council, 2021. *'Our Region, Your Say': Community Consultation Report*, Edward River Council: s.n.

Edward River Council, 2022. *Community Strategic Plan 2022 - 2050*. [Online]
Available at: <https://www.edwardriver.nsw.gov.au/Council/Integrated-Planning-and-Reporting/Community-Strategic-Plan>

GHD, 2022. *Billabong Creek Environmental Water Regulators: State Significant Infrastructure Scoping Report*, s.l.: NSW Department of Planning and Environment.

GHD, 2024. *Billabong Creek Regulators: Land Use Assessment*, s.l.: s.n.

GHD, 2024. *Billabong Creek Regulators: Noise and Vibration Impact Assessment*, s.l.: s.n.

GHD, 2024. *Billabong Creek Regulators: Traffic Impact Assessment*, s.l.: s.n.

Greater Hume Council, 2022. *Billabong Creek*. [Online]
Available at: <https://www.visitgreaterhume.com.au/Featured-Content/Natural-Wonders/Billabong-Creek#:~:text=The%20Billabong%20Creek%2C%20a%20partly,longest%20creek%20in%20the%20world.>

Henery, L. J., 2008. *Settlement of the Jerilderie District, and Establishment of the town of Jerilderie*. [Online]
Available at: https://www.murrumbidgee.nsw.gov.au/files/Settlement_Jerilderie.pdf

Jacobs, 2024. *Billabong Creek Regulators: Non-Aboriginal Heritage Assessment*, s.l.: s.n.

Monument Australia, 2008. *Pepin Merino Memorial*. [Online]
Available at: <https://monumentaaustralia.org.au/themes/technology/agriculture/display/23667-peppin-merino-memorial>
[Accessed 2023].

Murray Regional Tourism, 2018. *Murray Region Destination Management Plan*, s.l.: s.n.

Murray-Darling Basin Authority, 2018. *Deniliquin Township: community profile*. [Online]
Available at: https://www.mdba.gov.au/sites/default/files/pubs/community-profile-deniliquin_0.pdf

Murray-Darling Basin Authority, 2022. *Cultural flows*. [Online]
Available at: <https://www.mdba.gov.au/sites/default/files/pubs/Cultural%20flows%20fact%20sheet.pdf>

Murray-Darling Basin Authority, 2023. *Central Murray catchment*. [Online]
Available at: <https://www.mdba.gov.au/basin/catchments/southern-basin-catchments/central-murray-catchment>
[Accessed 2024].

Murrumbidgee Council, 2022. *Visiting Jerilderie*. [Online]
Available at: https://www.murrumbidgee.nsw.gov.au/cp_themes/default/page.asp?p=DOC-UYZ-56-41-22#:~:text=Jerilderie%20was%20home%20to%20the,Kennedy%2C%20passed%20away%20in%201930.

Murray River Tourism, 2021. *Murray Regional Tourism Strategic Plan 2021-2024*, Echuca, Victoria: Murray River Tourism Board.

NSW Department of Primary Industries, 2022. *AgTrack - Agricultural and Land Use Dashboard*. [Online]
Available at: <https://www.dpi.nsw.gov.au/agriculture/lup/agriculture-data-for-planning/dashboard>
[Accessed January 2024].

NSW Treasury, 2021. *NSW and Local Government Area Business Profiles 2021*. [Online]
Available at: <https://www.nsw.gov.au/sites/default/files/2021-11/NSW%20and%20Local%20Government%20Area%20Business%20Profiles%202021.pdf>

PHIDU, 2021. *Social Health Atlases of Australia*. [Online]
Available at: <http://phidu.torrens.edu.au/social-health-atlases/data>

REMPPLAN, 2022. *REMPPLAN*. [Online]
Available at:
<https://app.rempplan.com.au/muswellbrook/community/summary?state=pxoBFAk2RTL1je2ta6qnN4ipt8t4kn>

Salmon, M. et al., 2018. *Defining the indefinable: Descriptors of Aboriginal and Torres Strait Islander peoples' cultures and their links to health and wellbeing*, s.l.: s.n.

SQM Research, 2023. *Residential Vacancy Rates*. [Online]

Available at: https://sqmresearch.com.au/graph_vacancy.php?sfx=®ion=tas%3A%3AWest+Coast&t=1

Tindale, N., 1974. *Aboriginal Tribes of Australia: their terrain, environmental controls, distribution, limits, and proper names*. s.l.: ANU Press.

Vanclay et al., 2003. *International Principles for Social Impact Assessment*. [Online]

Available at: <https://www.iaia.org/uploads/pdf/IAIA-SIA-International-Principles.pdf>

Vanclay et al., 2015. *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects*. [Online]

Available at:

https://www.researchgate.net/publication/274254726_Social_Impact_Assessment_Guidance_for_Assessing_and_Managing_the_Social_Impacts_of_Projects

WINSW, 2021. *WINSW First Nations Engagement Framework*, s.l.: Department of Planning and Environment.

Appendix A

SIA Guidelines Review Questions

Table A.1 SIA Guidelines Review Questions

General	
1. Does the lead author meet the qualification and experience requirements?	Yes – refer to section 1.5
2. Has the lead author provided a signed declaration?	Yes – refer to section 1.5
3. Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	The SIA has been prepared by social scientists with proven experience in SIA. The SIA has been prepared using proven social science research methods relevant to the nature of the project.
Projects social locality and social baseline	
4. Does the SIA report identify and describe all the different social groups that may be affected by the project?	Yes – section 2.2 and section 5 provides a description of the social locality, including the different social groups who may be affected by the project.
5. Does the SIA report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features?	Yes – section 5 provides a description of built or natural features that have value for people in the social locality, as relevant to the scope of the assessment.
6. Does the SIA report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects?	Yes – section 5 describes historical, current and expected social trends or social changes for people in the social locality, as relevant to the scope of the assessment. Section 4 reports findings from consultation which includes local stakeholders' concerns about this project and other major development projects in the region.
7. Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the diversity of views and likely experiences?	Yes – the elements and indicators discussed in section 5 (the social baseline) are justified in the SIA scoping exercise (section 2.1). Section 3 has been informed by relevant literature and data as referenced in the section. The SIA consultation activities reported in section 4 and throughout sections 5 to 7 sought to understand the views of a diverse range of local stakeholders, and how they expect to be affected by the project.
8. Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Yes – section 2 describes the SIA methodology including the social science research methods implemented, and the data limitations.
Identification and description of social impacts	
9. Does the SIA report adequately describe likely social impacts from the perspectives of how people may experience them, and explain the research used to identify them? When undertaken as a part of SIA scoping and initial assessment, has the plan for the SIA report been detailed?	Yes – sections 6 describe the potential social impacts of the project, including the concerns of local communities based on outcomes of consultation activities described in section 3. Section 2.1 presents the SIA scoping exercise, which justifies the focus areas for the social baseline (section 5) and assessment of impacts (sections 6).
10. Does the SIA report apply the precautionary principle to identifying social impacts, and consider how they may be experienced differently by different people and groups?	Yes – section 6 describe the potential social impacts of the project on local communities and stakeholders, and considers how different groups in the community, particularly vulnerable community members, may experience the impacts differently.
11. Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	Outcomes from the SIA consultation activities informed the approach to EIS consultation.
Community engagement	
12. Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Yes – the SIA consultation activities were planned to target stakeholders relevant to the scope of the assessment. The outcomes from SIA consultation activities informed the approach to EIS consultation.

13. How have the views, concerns and insights of affected and interested people influenced both the project design and each element of the SIA report?	Consultation findings have informed the social baseline (section 4), impact identification and assessment (section 6) and identification of mitigation measures (section 7).
Predicting and analysing social impacts	
14. Does the SIA report impartially focus on the most important social impacts to people at all stages of the project, without any omissions or misrepresentations?	In line with the principles for SIA of being 'impartial' and 'inclusive' the SIA focuses on the concerns expressed by stakeholders and communities during SIA consultation and reported by NSW DCCEEW from its consultation activities (reported in section 3).
15. Does the SIA report analyse the distribution of both positive and negative social impacts, and identify who will benefit and who will lose from the project?	Yes – Summary of impacts This section assesses the social impacts identified in sections 6.1 to 6.8. The magnitude and likelihood have been determined in accordance with the methodology outlined in section 2.5. The significance rating shown in section 2.5 has been applied to each social impact based on the outcome of this assessment. Table 6.1 identifies positive and negative impacts and who is affected.
16. Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Yes – sensitivity analysis is presented as relevant throughout section 6
Evaluating significance	
17. Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects?	Yes – section 6 recognise that different groups in the community may experience impacts differently. Cumulative impacts are discussed throughout section 6.
18. Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Yes – the evaluations of significance in sections 6 consider the different experiences of different groups, including vulnerable groups.
Responses, monitoring and management	
19. Does the SIA report propose responses that are tangible, deliverable, likely to be durably effective, directly related to the respective impact(s) and adequately delegated and resourced?	Yes – section 7 demonstrates how the recommended social impact mitigation and enhancement measures directly respond to the impacts and benefits identified in the SIA, along with the residual impact rating based on their effective implementation.
20. Does the SIA report demonstrate how people can be confident that social impacts will be monitored and reported in ways that are reliable, effective and trustworthy?	Yes – section 7 describes the approach to monitoring and reporting of social impact management.
21. Does the SIA report demonstrate how the proponent will adaptively manage social impacts and respond to unanticipated events, breaches, grievances and non-compliance?	Yes – section 7 describes the approach to adaptive management in response to complaints.

Appendix B

Demographic indicators

Table B.2 Demographic indicators (ABS, 2022)

Demographic	Conargo SAL		Wanganella SAL		Edward River LGA		NSW	
	No.	%	No.	%	No.	%	No.	%
Total Persons	117	100.0%	61	100.0%	8,456	100.0%	8,072,163	100.0%
Service age groups (persons)								
Babies and pre-schoolers (0-4)	5	4.3%	7	11.5%	444	5.3%	468,056	5.8%
Primary schoolers (5 to 11)	18	15.4%	6	9.8%	714	8.4%	702,688	8.7%
Secondary schoolers (12 to 17)	7	6.0%	5	8.2%	630	7.5%	578,476	7.2%
Tertiary education and young workforce (18 to 24)	4	3.4%	6	9.8%	571	6.8%	674,867	8.4%
Young workforce (25 to 34)	7	6.0%	6	9.8%	865	10.2%	1,142,024	14.1%
Career and home building (35 to 49)	20	17.1%	8	13.1%	1,342	15.9%	1,620,084	20.1%
Senior workforce (50 to 64)	34	29.1%	15	24.6%	1,793	21.2%	1,461,810	18.1%
Retirees (65 to 74)	13	11.1%	10	16.4%	1,137	13.4%	788,727	9.8%
Seniors (75 to 84)	5	4.3%	10	16.4%	676	8.0%	451,519	5.6%
Elderly (85+)	0	0.0%	0	0.0%	289	3.4%	183,900	2.3%
Age-related summary								
Under 18 years	30	25.6%	18	29.5%	1,788	21.1%	1,749,220	21.7%
15 years and over	91	77.8%	44	72.1%	6,974	82.5%	6,602,150	81.8%
Under 15 years	26	22.2%	12	19.7%	1,481	17.5%	1,470,006	18.2%
Over 65 years	20	17.1%	11	18.0%	2,098	24.8%	1,424,141	17.6%
Dependency ratio	65	NA	61	NA	73	NA	56	NA
Median Age (years)	48	NA	41	NA	46	NA	39	NA
Cultural diversity								
Indigenous persons	4	3.4%	7	11.5%	410	4.8%	278,043	3.4%
Persons born in Non-Main English Speaking countries	0	0.0%	0	0.0%	255	3.0%	1,855,032	23.0%
Language spoken at home other than English	0	0.0%	0	0.0%	250	3.0%	2,146,080	26.6%
Speaks English Only	105	89.7%	53	86.9%	7,430	87.9%	5,457,982	67.6%
Family characteristics								
Total families	32	NA	14	NA	2,160	NA	2,135,964	NA
Couple family with children	10	31.3%	10	71.4%	769	35.6%	954,588	44.7%
Couple family without children	18	56.3%	4	28.6%	1,055	48.8%	809,586	37.9%
One parent family	4	12.5%	0	0.0%	297	13.8%	337,729	15.8%

Demographic	Conargo SAL		Wanganella SAL		Edward River LGA		NSW	
	No.	%	No.	%	No.	%	No.	%
Other family	0	0.0%	0	0.0%	35	1.6%	34,061	1.6%
Need for assistance								
Need for assistance	4	3.4%	0	0.0%	308	3.6%	216,590	2.7%
Need for assistance not stated	8	6.8%	10	16.4%	413	4.9%	248,092	3.1%
Dwelling characteristics								
Family households	33	76.7%	11	55.0%	2,138	64.2%	2,065,107	71.2%
Lone person household	11	25.6%	7	35.0%	1,112	33.4%	723,716	25.0%
Group household	0	0.0%	0	0.0%	81	2.4%	111,646	3.8%
Average household size	2.3	NA	2.4	NA	2.2	NA	2.6	NA
Average number of persons per bedroom	0.8	NA	0.7	NA	0.7	NA	0.9	NA
Total occupied dwellings	43	81.1%	20	71.4%	3,331	86.4%	2,900,468	90.6%
Unoccupied private dwellings	8	15.1%	8	28.6%	523	13.6%	299,524	9.4%
Dwelling structure								
Separate House	43	100.0%	20	100.0%	2,998	90.0%	1,902,734	65.6%
Semi-detached, terrace house, townhouse	0	0.0%	0	0.0%	281	8.4%	340,582	11.7%
Flat, unit or apartment	0	0.0%	0	0.0%	16	0.5%	630,030	21.7%
Other dwellings	0	0.0%	0	0.0%	10	0.3%	19,374	0.7%
Tenure type								
Owned with a mortgage	8	18.6%	3	15.0%	979	29.4%	942,804	32.5%
Owned (fully or with a mortgage)	25	58.1%	12	60.0%	2,331	70.0%	1,857,341	64.0%
Rented (Total):	4	9.3%	5	25.0%	827	24.8%	944,585	32.6%
Other Tenure Type	7	16.3%	4	20.0%	97	2.9%	55,931	1.9%
Income								
Median Individual Income (\$/weekly)	767	NA	819	NA	701	NA	813	NA
Median Household income (\$/weekly)	1,325	NA	1,333	NA	1,240	NA	1,829	NA
Labour force								
Persons 15 years and over	91	NA	44	NA	6,974	NA	6,602,150	NA
Total labour force	60	NA	27	NA	3,918	NA	3,874,012	NA
Total employed	63	105.0%	27	100.0%	3,773	96.3%	3,684,158	95.1%
Employed full-time	37	58.7%	21	77.8%	2,310	61.2%	2,136,610	58.0%

Demographic	Conargo SAL		Wanganella SAL		Edward River LGA		NSW	
	No.	%	No.	%	No.	%	No.	%
Employed part-time	19	30.2%	8	29.6%	1,236	32.8%	1,151,660	31.3%
Unemployed persons	0	0.0%	0	0.0%	140	3.6%	189,852	4.9%
Labour force participation	NA	65.9%	NA	61.4%	NA	56.2%	NA	58.7%
Not in the labour force	20	33.3%	17	63.0%	2,382	60.8%	2,341,417	60.4%
Occupation								
Managers	31	50.0%	16	61.5%	728	19.3%	536,820	14.6%
Professionals	0	0.0%	0	0.0%	553	14.6%	952,131	25.8%
Technicians and trades	4	6.5%	0	0.0%	477	12.6%	436,589	11.9%
Community and personal service	5	8.1%	0	0.0%	495	13.1%	390,779	10.6%
Clerical and administrative	3	4.8%	0	0.0%	426	11.3%	480,612	13.0%
Sales	4	6.5%	0	0.0%	299	7.9%	294,889	8.0%
Machinery operators and drivers	5	8.1%	0	0.0%	251	6.6%	222,186	6.0%
Labourers	10	16.1%	10	38.5%	453	12.0%	300,966	8.2%
Not stated	0	0.0%	0	0.0%	98	2.6%	69,202	1.9%
Industry of employment								
Agriculture, Forestry and Fishing	35	57.4%	14	50.0%	662	17.6%	74,728	2.0%
Mining	0	0.0%	0	0.0%	7	0.2%	35,406	1.0%
Manufacturing	0	0.0%	0	0.0%	174	4.6%	201,654	5.5%
Electricity, Gas, Water and Waste Services	0	0.0%	0	0.0%	102	2.7%	35,584	1.0%
Construction	3	4.9%	0	0.0%	262	6.9%	315,520	8.6%
Wholesale Trade	0	0.0%	0	0.0%	87	2.3%	103,466	2.8%
Retail Trade	4	6.6%	0	0.0%	334	8.9%	331,486	9.0%
Accommodation and Food Services	0	0.0%	4	14.3%	229	6.1%	227,466	6.2%
Transport, Postal and Warehousing	0	0.0%	0	0.0%	135	3.6%	169,608	4.6%
Information Media and Telecommunications	0	0.0%	0	0.0%	27	0.7%	68,068	1.8%
Financial and Insurance Services	0	0.0%	0	0.0%	57	1.5%	193,679	5.3%
Rental, Hiring and Real Estate Services	0	0.0%	0	0.0%	24	0.6%	62,633	1.7%
Professional, Scientific and Technical Services	0	0.0%	0	0.0%	121	3.2%	326,595	8.9%

Demographic	Conargo SAL		Wanganella SAL		Edward River LGA		NSW	
	No.	%	No.	%	No.	%	No.	%
Administrative and Support Services	0	0.0%	0	0.0%	83	2.2%	117,988	3.2%
Public Administration and Safety	13	21.3%	4	14.3%	243	6.4%	222,909	6.1%
Education and Training	6	9.8%	0	0.0%	311	8.2%	322,236	8.7%
Health Care and Social Assistance	0	0.0%	0	0.0%	586	15.5%	529,176	14.4%
Arts and Recreation Services	0	0.0%	0	0.0%	36	1.0%	51,789	1.4%
Inadequately described/Not stated	0	0.0%	6	21.4%	157	4.2%	168,787	4.6%
Mobility								
Lived at same address 1 year ago	99	84.6%	51	85.0%	6,557	78.4%	6,335,812	79.4%
Lived at same address 5 years ago	73	66.4%	33	55.9%	4,659	58.2%	4,095,964	53.9%
Unpaid work								
Volunteered	17	19.1%	10	20.8%	1,443	20.7%	857,891	13.0%
Voluntary work not stated	8	9.0%	6	12.5%	706	10.1%	424,084	6.4%
Highest level of secondary schooling completed								
Completion of Year 12 (or equivalent)	33	39.3%	25	52.1%	2,424	36.1%	3,732,846	58.9%
Year 11 or equivalent	5	6.0%	6	12.5%	711	10.6%	310,274	4.9%
Year 10 or equivalent	23	27.4%	7	14.6%	1,779	26.5%	1,248,274	19.7%
Year 9 or equivalent	6	7.1%	0	0.0%	613	9.1%	300,066	4.7%
Year 8 or below	6	7.1%	0	0.0%	425	6.3%	232,770	3.7%
Not stated	9	10.7%	5	10.4%	734	10.9%	437,933	6.9%
Non-school qualifications								
Postgraduate degree	0	0.0%	3	18.8%	117	3.9%	485,845	13.1%
Graduate diploma and Graduate Certificate	6	14.0%	0	0.0%	115	3.8%	135,609	3.7%
Bachelor's degree	13	30.2%	7	43.8%	634	21.2%	1,217,048	32.9%
Advance diploma and diploma level	6	14.0%	0	0.0%	531	17.8%	616,322	16.7%
Certificate level	18	41.9%	6	37.5%	1,568	52.5%	1,197,119	32.3%

Note: Data collected from the ABS has been done so with the understanding that slight adjustments have been made throughout the dataset to ensure confidentiality is maintained so small discrepancies are expected particularly with small communities.



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