APPENDIX I

Workforce accommodation camp assessment

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

Technical and Approvals Consultancy Services: Illabo to Stockinbingal

Workforce Accommodation Camp

August 2022

2-0001-220-EAP-00-RP-0054

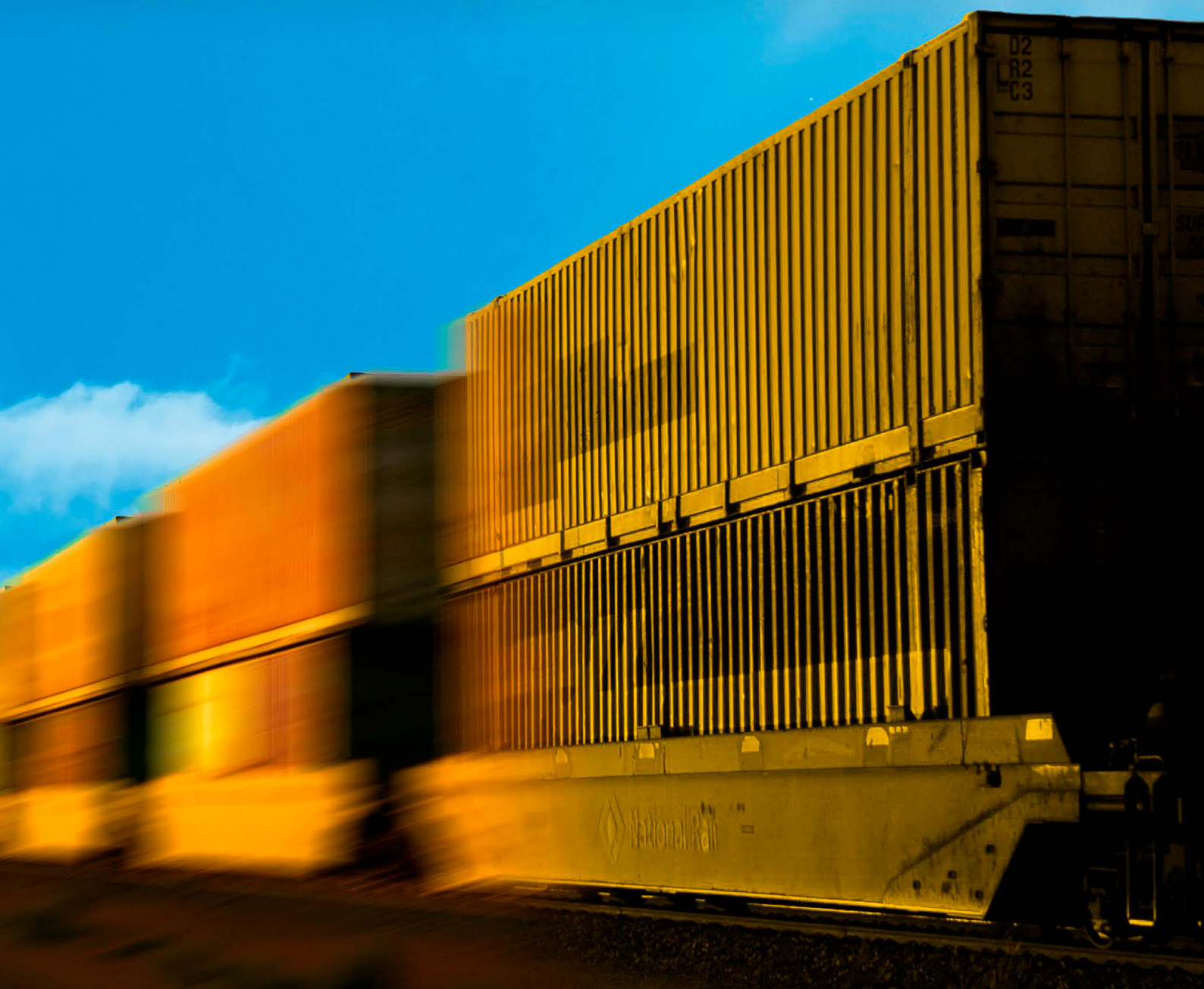


Table of contents

Table of contents (continued)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Glossary

AC	Air Conditioning
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AIMS	Aboriginal Heritage Information Management System
ARTC	Australian Rail Track Corporation
AS	Australian Standard
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity Development Assessment Report
CEMP	Construction Environment Management Plan
CNVIS	Construction Noise and Vibration Impact Statement
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ha	Hectares
HV	Heavy Vehicle
I2S	Illabo to Stockinbingal
ICNG	Interim Construction Noise Guideline
IRDJV	Inland Rail Design Joint Venture (WSP|MM JV legal entity)
km	Kilometres
km/h	Kilometres per hour
km^2	Square kilometres
KTP	Key Threatening Processes
LEP	Local Environmental Plan
LGA	Local Government Area
LOS	Level of Service

LV	Light Vehicle
m	Metres
mAHD	Metres Australian Height Datum
mm	Millimetres
MCA	Multi-Criteria Analysis
NMLs	Noise Management Levels
NSW	New South Wales
PCT	Plant Community Type
PCUs	Passenger Car Units
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
POEO Act	*Protection of the Environment Operations Act 1997*
RAPs	Representative Aboriginal Parties
SEARs	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SIA	Social Impact Assessment
SSC	State Suburb Code
TEC	Threatened Ecological Communities
UXO	Unexploded Ordnance
WSP | MM	WSP Australia | Mott MacDonald Joint Venture trading as IRDJV

Executive summary

ARTC is proposing to construct and operate a new section of the Inland Rail route, that would consist of approximately 39kms of new, single track, standard gauge railway and associated infrastructure and facilities between Illabo and Stockinbingal (the proposal).

During construction, the workforce required to complete the proposal is expected to peak at about 450 personnel, with the majority of the work being carried out in proximity to Stockinbingal. Chapter 17 (Social and economic) of the Environmental Impact Statement (EIS for the proposal outlines the need for temporary accommodation for construction workers in the vicinity of the proposal, due to a shortfall of available rental accommodation in the area (refer to Section 17.5 of the EIS).

During the adequacy review period of the EIS development, DPE identified the requirement for the inclusion and assessment of a workforce accommodation camp (accommodation camp). DPE agreed that the details of the construction of the accommodation camp and its impacts could be addressed through an addendum report. This report has been prepared to address that requirement and consists of a desktop environmental impact assessment of the construction and operation of the accommodation camp which is in accordance with the proposal's Secretary's Environmental Assessment Requirements that are relevant to the impacts of the accommodation camp.

ARTC is proposing to establish an accommodation camp within a private property (Lot 1 DP1093937) located north of the township of Stockinbingal in the Cootamundra-Gundagai Regional Council local government area. The accommodation camp site covers an area of 7.7ha and is situated on land zoned as RU1 Primary Production under the Cootamundra Local Environmental Plan 2013 and is currently used for cropping and grazing. The accommodation camp site is bounded by the Stockinbingal to Parkes railway along its western boundary and Grogan Road along its eastern boundary.

The construction and operation of the accommodation camp has the potential to result in a number of temporary impacts during the construction of the proposal, including:

- erosion and sedimentation during top soil removal and minor excavations for utility works
- impacts to amenity due to increased noise, dust generation during construction and visual impacts of construction activities, plant and equipment and traffic and the accommodation camp buildings
- traffic congestion and an increase in road safety risks on the surrounding road network
- increased demand for local and regional social and health services
- an increase in social cohesion and safety concerns, due to the influx of a non-resident workforce
- a minor increase in impervious surfaces, with associated impacts on surface water flows and drainage patterns
- the generation of waste, such as excess spoil, domestic waste and packaging, and wastewater
- exposure of the surrounding soil and water environments to contamination from spills and leaks from equipment, vehicles or onsite waste/sewage storage.

These impacts are not considered to be significant and would be further minimised with the implementation of the mitigation measures as described in Chapter 5 of this report.

Overall, the accommodation camp would reduce pressure on short-term and long-term accommodation in the local and regional area and result in improved road network performance when compared to the scenarios assessed in the EIS. There is also the potential for local businesses and suppliers to benefit economically through workforce patronage, which could lead to flow on benefits for local industries such as hospitality and tourism, and provide additional opportunities for employees.

1 Introduction

1.1 Background

ARTC is proposing to construct and operate a new section of the Inland Rail route, that would consist of approximately 39kms of new, single track, standard gauge railway and associated infrastructure and facilities between Illabo and Stockinbingal (the proposal).

During construction, the workforce required to complete the proposal is expected to peak at about 450 personnel, with the majority of the work being carried out in proximity to Stockinbingal. Chapter 17 (Social and economic) of the Environmental Impact Statement (EIS for the proposal outlines the need for temporary accommodation for construction workers in the vicinity of the proposal, due to a shortfall of available rental accommodation in the area (refer to Section 17.5 of the EIS).

The need for the workforce accommodation camp (accommodation camp) is discussed further in Chapter 17 (Social and economic) of the EIS.

The DPE requirements for the inclusion and assessment of an accommodation camp were identified during the adequacy review period of the EIS development. The DPE agreed that the details of the accommodation camp and its impacts could be addressed through an addendum report, and hence, the camp details and assessment are not included in the main EIS. This addendum report comprises a desktop assessment of the potential impacts of the construction and operation of the accommodation camp on the local environment, including potential cumulative impacts in relation to the overall proposal.

1.2 Approach to the assessment

This report consists of a desktop environmental impact assessment of the construction and operation of the accommodation camp which is in accordance with the proposal's Secretary's Environmental Assessment Requirements (SEARs) (refer to Appendix A (Secretary's Environmental Assessment Requirements and summary of agency requirements) of the EIS) to the extent that they are relevant to the impacts of the accommodation camp. The SEARs, agency requirements and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) assessment requirements relevant to the workforce accommodation camp assessment, and where they are addressed in this report are provided in Appendix A. Statutory considerations relevant to this assessment are discussed in Appendix B (Statutory compliance) of the EIS.

2 Selection of a preferred site for the accommodation camp

Potential locations for the accommodation camp were identified as detailed below, and a Multi-Criteria Analysis (MCA) was undertaken by ARTC considering the specific criteria outlined in Table 2.1.

The site selection was undertaken in two stages:

- **Stage 1**: assessment of suitable locations along the proposal route for a potential accommodation camp, based on proximity to the proposal's key work areas. This initial assessment determined the broader Stockinbingal area, where the bulk of the proposal's works are located, as the most suitable location for the accommodation camp site
- **Stage 2:** further investigations in 2022 identified potential sites within the Stockinbingal area which were then subject to the MCA assessment criteria outlined in Table 2.1.

Table 2.1 Criteria for the accommodation camp selection

Selection criteria	Requirements
Land use/zoning	Minimal land use restrictions, Native title and Aboriginal land claims
Land size	Total estimated area at least 7ha including an area of at least 4.5ha with the capacity to accommodate a camp of up to 450 construction workers
Proximity to proposal core work areas	Travel time to construction sites less than 30 minutes where possible
Hydrology constraints	More than 50m away from waterways and 1%, 2%, 5% and 10% Annual Exceedance Probability (AEP) flood depths
Ecological constraints	Minimal presence of Endangered Ecological Communities, threatened species, native and riparian vegetation
Heritage constraints	Minimal presence of listed Aboriginal and non-Aboriginal heritage items or sites
Accessibility	Connectivity to existing road network
Availability of services/ utilities	Available water, energy and sewer services and mobile reception
Soil	Free of NSW Environment Protection Authority (EPA) contaminated sites and acid sulfate soil
Topography	Minimal slope
Social constraints	Minimal number of direct neighbours due to potential noise and visual impacts
Traffic	Minimal traffic impacts within the local community
Legacy/economic opportunities	Leaving legacy infrastructure and/or financial benefits to local community
Location in relation to project area	Land previously subject to environmental investigations as part of the proposal

Taking into consideration an equal weighing of all selection criteria outlined in Table 2.1 in the MCA, a site located on Grogan Road, Stockinbingal (Lot 1 DP1093937) presented the highest MCA score. The score included the highest count of criteria scoring as 'green' (performs well against the criteria (preferred)) and the least count of 'amber' (performs moderately against the criteria (potential)) and 'red' (performs poorly against the criteria (undesirable)), as detailed below, resulting in the highest overall ranking (refer to Table 2.2). The site was therefore selected as the preferred site option for the accommodation camp.

Table 2.2 Results of the assessment of the preferred site against the site selection criteria

Selection criteria	Site results	Score
Land use/zoning	Private property with no land claims	
Land size	Approximately 49ha with sufficient space for wastewater disposal area	
Proximity to proposal core work areas	Located approximately 2kms from Stockinbingal where the majority of the proposal construction works will be based	
Hydrology constraints	No waterways nearby and no flooding during the 1%, 2%, 5% or 10% AEP. A few very small low-lying areas that may result in small puddles of water, but no risk to camp location	
Ecological constraints	No native vegetation mapped within the site; largely cleared or agricultural land; no threatened species recorded within the site	
Heritage constraints	No recorded/listed Aboriginal or non-Aboriginal heritage sites	
Accessibility	Good connectivity to the wider road network	
Availability of services/utilities	Existing connections to electricity and water networks	
Soil	No registered EPA contaminated sites or acid sulfate soils within or near the site	
Topography	Surface relatively level with the least gradient level	
Social constraints	Located outside the Stockinbingal town centre, with nearest neighbours located within 500m along Racecourse Lane	
Traffic	Travel through Stockinbingal main (Hibernia Street) and back roads (Geraldra/Grogan Roads)	
Legacy/economic opportunities	Limited opportunities to leave legacy infrastructure for the community on private property	
Location in relation to project area	Land situated within Focused Area of Investigation	

3 Project description

3.1 Overview

The accommodation camp would be established north of the township of Stockinbingal which is located within the Cootamundra-Gundagai Regional Council local government area (LGA). The camp site covers an area of 7.7ha and is bounded by the Stockinbingal to Parkes railway along its western boundary and Grogan Road along its eastern boundary, as shown in Figure 3.2.

The land on which the accommodation camp is located is zoned as RU1 Primary Production under the Cootamundra Local Environmental Plan 2013 and is cleared rural land used for grazing.

The construction workforce peak is assumed to be around 425 people with a conservative allowance of up to 450 people for surge capacity. Surge capacity relates to the ability to obtain adequate workers to meet any unforeseen requirements of the construction phase. The construction workforce over the duration of the proposal construction is shown in Figure 3.1. This workforce profile is indicative and would be refined during further design development. The occupation rate of the camp is likely to vary throughout the different stages of construction, depending on the type of activities being undertaken at each stage.

For further details on the construction workforce, refer to Chapter 8 (Construction) of the EIS.

The camp buildings would be typical demountable construction. Areas of hardstand would be needed for the accommodation camp car park, access road to the car park and footpaths to and between buildings.

It is likely that the land would be leased from the landowner for the duration of construction and operation of the camp.

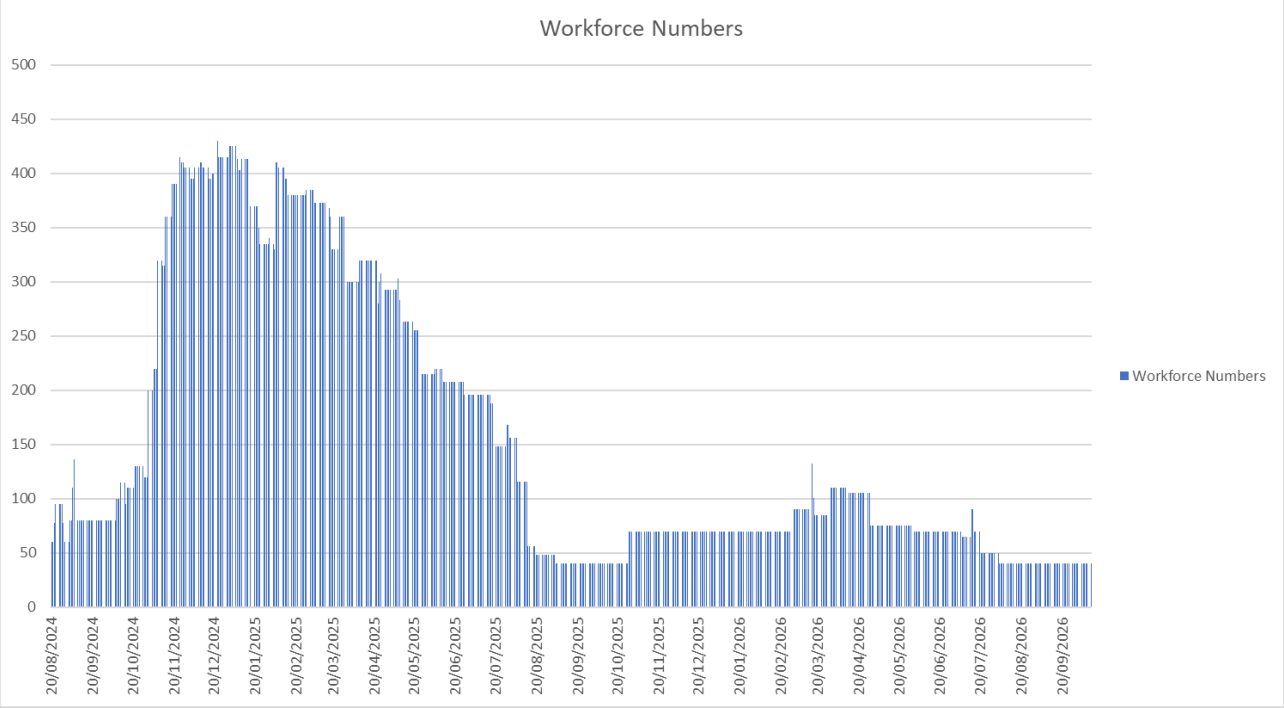


Figure 3.1 Construction workforce numbers

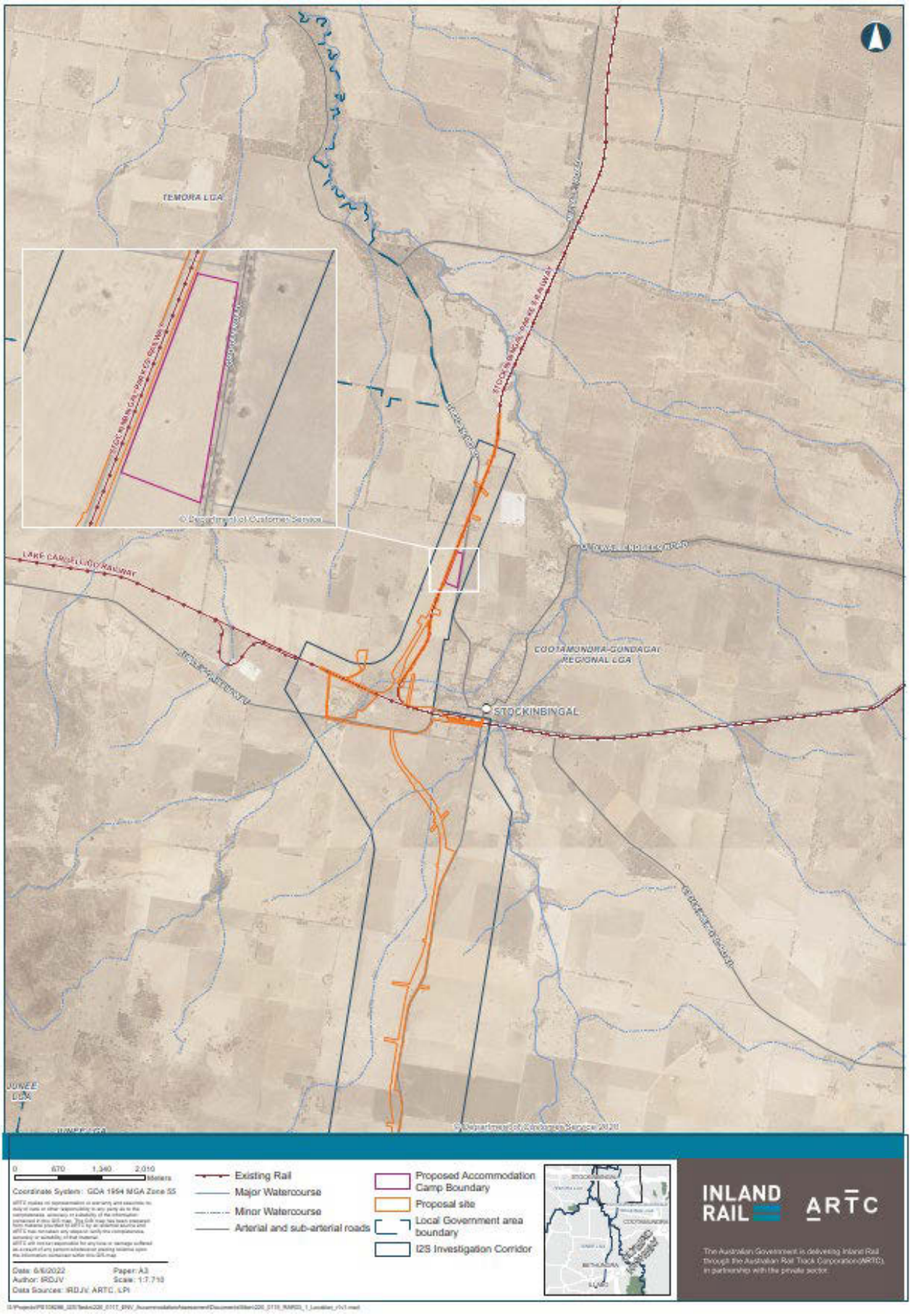


Figure 3.2 Location of the accommodation camp

3.2 Timing of accommodation camp construction and operation

The accommodation camp would be established and ready for occupation prior to works starting on the proposal and the construction works on the camp are estimated to commence in mid-2024. The workforce numbers distribution over the duration of proposal construction is shown in Figure 3.1. This workforce profile is indicative and would be refined during further design development. The workforce accommodation camp would be operational for around 24 months.

3.3 Scope and staging

The establishment of the accommodation camp would involve the following preliminary activities:

- install site environment management and traffic controls, including drainage and erosion management controls establish access points off public roads (following obtaining necessary *Roads Act 1993* approvals)
- utility relocation or protection, where required.

The scope and staging of the site establishment activities are outlined in Table 3.1. There would be typically 30 workers on site during camp construction, who would travel by private vehicle to the accommodation camp construction site. Details on plant, labour, materials and subcontractors required for construction activities for the accommodation camp will be refined once the project detailed design has been issued.

Table 3.1 Scope and staging of the activities for the accommodation camp

Step	Works Involved
Early works	Setout, service location/protection, environmental controls
Clear and grub	Clear and grub vegetation where required
Strip topsoil	Strip topsoil and stockpile for rehabilitation
Foundation treatment	Undertake treatment per geotechnical design
Cut to fill	Undertake cut to fill works
Install drainage	Install drainage network
Install conduits and services	Install services conduits and services including power, water and gas
Subgrade treatment	Treat the subgrade
Pavements	Spread, place, compact and trim pavements
Kerb and gutter	Install kerb and guttered drainage
Asphalt	Undertake surfacing
Public road connection	Construction of public road connection
Signage and line mark	Sign installation and line marking
Lighting install	Install lighting
Building foundations and footings	Form, reinforce and pour foundations and footing
Building install	Install demountable/semi-permanent buildings
Internal services installation – electrical, water, sewer	Install services conduits and services including power, water and gas
Fencing	Install perimeter fence

Step	Works Involved
Fit out and furniture	Install furniture, fridges, TV's, showers, toilets etc. in rooms where required
Public service connections	Connect to water and power networks.
Landscaping	Undertake landscaping of the site
Commissioning	Test and commission electrical, plumbing and water services

3.4 Facilities and infrastructure

The design for the accommodation camp layout would be developed in accordance with ARTC's Inland Rail Program Accommodation Principles, relevant council development codes and guidelines. The accommodation camp site would include the following facilities/items:

- accommodation and laundry modules
- kitchen and dining facilities
- site offices
- linen and chemical storage rooms
- maintenance facilities
- ablutions
- waste disposal facilities
- power generation and fuel storage, if required
- water storage/supply, if required
- car, bus and truck parking
- food mess hall and recreation facilities
- bus pick up/drop off locations.

The layout of the camp and associated utility connections would be finalised during the detailed design of the accommodation camp with input from the construction contractor. An indicative layout for the camp is provided in Figure 3.3.

During use of the accommodation camp, a range of general activities would be undertaken to support the functions of the facility, such as general grounds maintenance, deliveries and waste removal.

3.5 Utilities and services

The camp site would connect to the adjacent electrical and water network.

General waste would be managed on site via onsite waste collection and recycling facilities, and then transported to a licenced landfill facility. Wastewater would be collected on site and removed for treatment at a licenced waste water treatment facility.

Facilities for recycling of paper, plastic and metal would be in operation during camp operations.

3.6 Traffic and access

The accommodation camp would be accessed from Grogan Road via a northern and southern entry point (refer to Figure 3.3). Grogan Road is a two-way local road of approximately 6m width. It has a speed limit of 100kms per hour, which reduces to 80kms per hour near a level crossing located approximately 600m to the north of the accommodation camp.

Construction of the accommodation camp would require delivery of prefabricated components including some oversized loads. Grogan Road is not a NSW Oversize Overmass Load Carrying Vehicle approved road; therefore, an access permit would be required from the National Heavy Vehicle Regulator or Cootamundra-Gundagai Regional Council.

Figure 3.3 Indicative layout of the accommodation camp

During operation, workers would generally be transported between the worksites and the accommodation camp via shuttle buses to help minimise potential traffic impacts on the local roads.

An internal road network provides circulation around the accommodation camp and access via two locations onto Grogan Road. The internal road network is proposed to be formed for one-way traffic with passing bays. A car park is proposed at the northern end of the site with direct access to Grogan Road. The car park would be sized to accommodate 450 private light vehicles and 24 buses. The buses would utilise a designated bus pick-up and drop-off zone within the camp.

3.7 Demobilisation and rehabilitation

The accommodation camp would be demobilised after the construction of the proposal has been completed. Rehabilitation of the site would be carried out in accordance with the Inland Rail Landscape and Rehabilitation Strategy to be undertaken during detailed design (refer to mitigation measure BD-8 in Chapter 19 (Landscape and visual impacts) of the EIS).

3.8 Consultation undertaken to support the accommodation camp

At the time of finalising the addendum report, stakeholder engagement relating specifically to the preferred accommodation camp site has involved the owner of the proposed site, Cootamundra-Gundagai Regional Council and a number of Registered Aboriginal Parties (RAPs) that were previously engaged in helping to identify heritage values that would potentially be impacted by the proposal.

Engagement with the RAPs was undertaken by written correspondence, facilitated by GML Heritage. Further details on consultation with RAPs are included in section 4.3.

Consultation relating to temporary workforce accommodation prior to the selection of the preferred camp location is outlined in Appendix C (Consultation report) and Section 15.2.3.2 of the EIS.

Consultation undertaken following the selection of the preferred accommodation camp location is outlined below included:

- April 2022 – consultation with the landowner to discuss location of the accommodation camp.
- May 2022 – consultation with Cootamundra-Gundagai Regional Council's newly appointed Interim General Manager and Civil Works Manager. Topics discussed included an overview of the next steps for the accommodation camp.
- May 2022 – meeting with DPE to provide a progress update on the proposal and the EIS. Topics discussed during the meeting included the accommodation camp.
- May 2022 – consultation with DPE and Transport for NSW, which included an update on the assessment of the accommodation camp.
- June 2022 – consultation with Cootamundra-Gundagai Regional Council to discuss off site treatment of wastewater from the accommodation camp.
- June 2022 – informal consultation by letter was undertaken on 14 June 2022 with the Young Local Aboriginal Land Council (LALC) and RAPs to provide information about the accommodation camp and the outcomes of this assessment. An attempt to contact Young LALC by phone to discuss the accommodation camp was unanswered; further contact attempts will be made prior to the EIS exhibition.

Engagement will continue with the landowner and Cootamundra-Gundagai Regional Council on matters such as land access and tenure, and technical matters such as waste management and road/traffic impacts. Other planned engagements prior to the EIS exhibition include Young LALC, adjoining property owners, the I2S Community Consultative Committee, Members of Parliament (State and Federal) and the wider Stockinbingal community.

4 Impact assessment

4.1 Introduction

This assessment has been carried out to identify potential environmental impacts of the accommodation camp (the site) during construction and operation and provide mitigation measures to control these impacts. The assessment identifies the potential for impacts on the following key issues: biodiversity, heritage, noise and vibration, traffic and transport, contamination, socio-economic, hydrology, flooding and water quality, and landscape character and visual amenity. Further potential impacts with minor impacts have also been covered in brief including land use and property, air quality, waste management, and hazard and risk.

4.2 Biodiversity

4.2.1 Overview

The biodiversity assessment involved:

- identification of biodiversity constraints for the project within the site based on desktop assessment and review of existing Biodiversity Development Assessment Report (BDAR) and associated field data, including:
  - native vegetation – identifying, describing and illustrating the vegetation communities recorded within the site and whether any of these are representative of any threatened ecological community
  - summary of threatened flora and fauna species listed under the *Biodiversity Conservation Act 2016* (BC Act) and/or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with the potential to occur in the subject land
  - identification of significant fauna habitat
  - identification of likely impacts to the biodiversity values
- recommendations on measures to avoid impacts to biodiversity or, if unavoidable measures to mitigate/minimise impacts to biodiversity during project development.

4.2.2 Methodology

The accommodation camp site was previously assessed as part of the BDAR for the proposal (Inland Rail Design Joint Venture (IRDJV), 2022). During this assessment, mapping of vegetation communities was undertaken through analysis of existing vegetation mapping (using the State Vegetation Type Map: Central West/Lachlan Region Version 1.4. VIS_ID 4468 (NSW Department of Planning Industry and Environment (DPIE), 2020a)) and aerial photograph interpretation. A brief field assessment of the accommodation camp site using random meander survey was also undertaken to validate (ground-truth) the mapped vegetation classification.

The results and mapping for this BDAR are used as part of this biodiversity assessment for the accommodation camp site. An updated desktop assessment was also undertaken to identify the existing environment and associated threatened species or threatened ecological community (TEC) information within a nominal search area of 10kms around the accommodation camp. The following information sources were reviewed as part of the assessment:

- Commonwealth Protected Matters Search Tool (Department of Agriculture, Water and the Environment (DAWE), 2022a)
- BioNet Atlas of NSW Wildlife (DPIE, 2022)
- Atlas of Living Australia (Atlas of living Australia, 2022)
- NSW Plantnet database (Royal Botanic Gardens and Domain Trust, 2022)
- the federal Bureau of Meteorology's Atlas of Groundwater Dependent Ecosystems (GDE) (Bureau of Meteorology, 2021)
- areas of outstanding biodiversity value and critical habitat

- Department of Primary Industries' database for aquatic TECs (NSW Department of Primary Industries, 2022)
- Core Koala Habitat identified by the Koala Habitat Protection SEPP 2021 (DPIE, 2021a)
- The National Flying-fox monitoring viewer (DPIE, 2022)
- topographic maps and aerial photographs
- previous reports and data, including the BDAR for the project (IRDJV, 2022).

4.2.3 Existing environment

The majority of the accommodation camp site (7.18ha which makes approximately 93% of the total land area) is assessed to contain disturbed, exotic grassland, which has been used for pasture and cropping. This vegetation type is not considered to be of conservation value and development in this area is unlikely to impact on any threatened entities.

Native vegetation within the accommodation camp site is limited to a scattered tree in the centre of the site, and the native woodland in the road reserve which borders the east of the site and overlaps with the site boundary to a small extent (refer to Figure 4.1). This woodland is classified as 'PCT 76: Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions' on the basis of vegetation mapping and brief field validation as part of field surveys conducted for the BDAR for the proposal (IRDJV, 2022).

Threatened flora and fauna species considered to have a potential to occur within the accommodation camp site, based on database searches for the BDAR for the proposal (IRDJV, 2022), are listed in Appendix B.

PCT 76 is considered to be of significant conservation value for the following reasons:

- consistent with Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions, listed as an endangered ecological community under the BC Act
- likely to be consistent with Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia, listed as an endangered ecological community under the EPBC Act
- provides potential habitat for six threatened flora species listed under the BC Act and/or EPBC Act (refer to Appendix B)
- provides potential habitat for 29 threatened or migratory fauna species listed under the BC Act and/or EPBC Act (refer to Appendix B), including the below species which have been recorded within PCT 76 in proximity to the site:
  - Superb Parrot (*Polytelis swainsonii*), Vulnerable under the BC Act and EPBC Act, which was recorded in 2018 within PCT 76 in the road reserve bordering the site
  - Grey-crowned Babbler (*Pomatostomus temporalis*), Vulnerable under the BC Act, was recorded approximately 2 kms south of the site, within PCT 76 (IRDJV, 2022).

Though isolated, the scattered tree within the site is also considered to be of conservation value. This tree (*Callitris glaucophylla*) was identified as a Class 3 scattered tree with no hollows. Scattered trees are known to be an important component in agricultural landscapes as they provide habitat and connectivity for fauna (particularly woodland birds), contribute to soil and ecosystem viability and may contribute to the conservation of certain woodland communities (Gibbons & Boak, 2000).

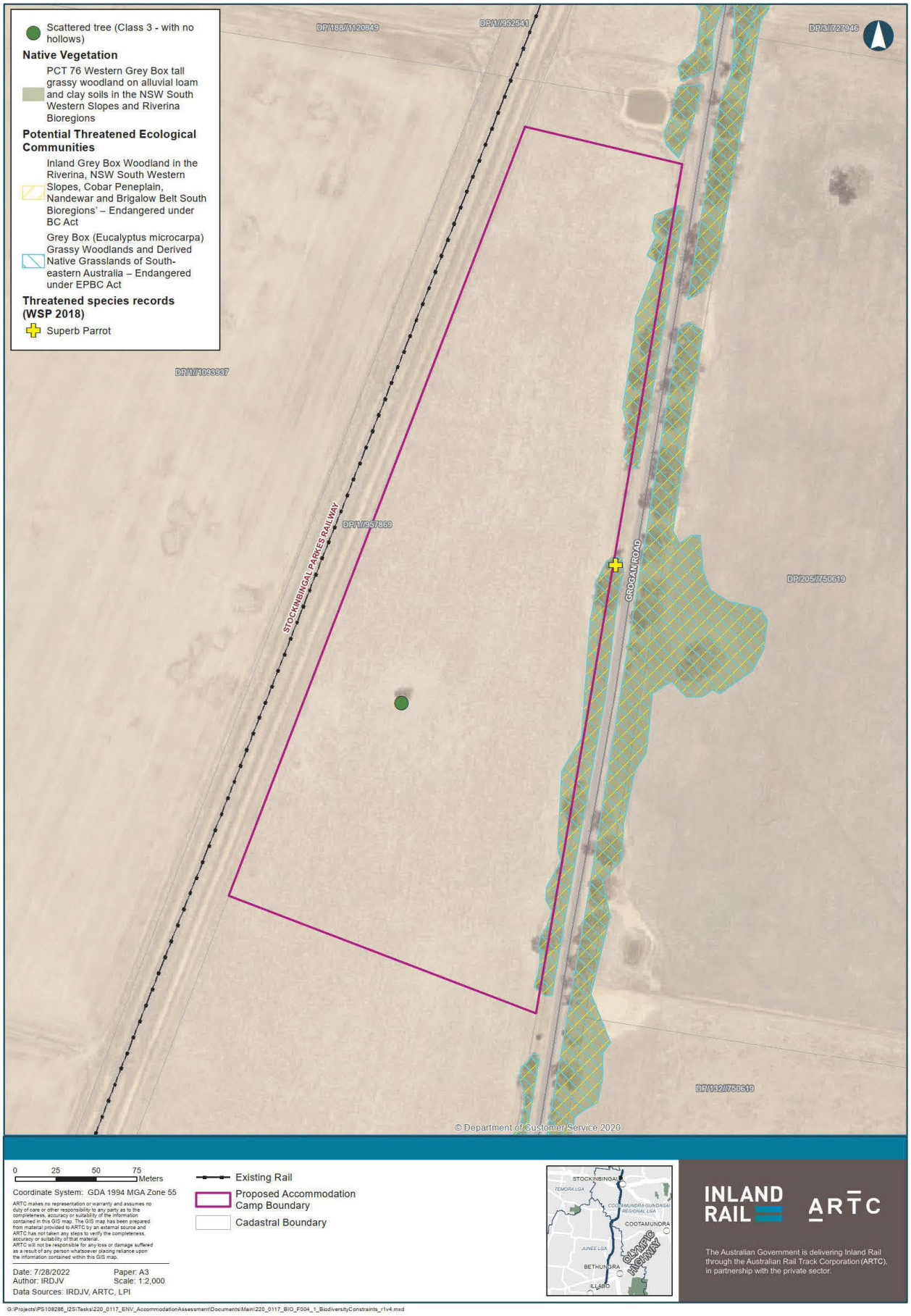


Figure 4.1 Biodiversity constraints

4.2.4 Potential impacts

The trees within the patch of PCT 76 in the western edge of the Grogan Road reserve, and marginally within the eastern edge of the accommodation camp boundary, and the isolated scattered tree in the centre of the accommodation camp boundary will not be removed for construction. Two access tracks are proposed for construction in the north and south of the eastern site boundary. These tracks would be located in disturbed areas where possible, or in gaps between tree vegetation of PCT 76 to avoid tree removal. In the absence of detailed field mapping, it is possible that placing the tracks in these gaps may impact on a small amount of PCT 76 in the form of derived native grassland, though access tracks will be sited in exotic and previously disturbed areas where possible. As a result, direct impacts to the biodiversity values will be minimised. Potential impacts from the accommodation camp will mostly be limited to indirect impacts on the identified biodiversity values.

Indirect impacts on adjacent vegetation along Grogan Road can include soil disturbance, introduction of weeds, erosion, sedimentation and enriched run-off. In addition, noise, dust, light and contaminant pollution are indirect impacts that may be associated with the construction phase of the accommodation camp.

Key Threatening Processes listed under the *Fisheries Management Act 1994* (FM Act), BC Act and EPBC Act were considered. Those relevant to the accommodation camp have been detailed in Table 4.1.

Table 4.1 Key threatening processes relevant to the accommodation camp

#	Key threatening process	Relevant legislation	Relevance to proposed action
1	Clearing of native vegetation/Land Clearance	BC Act/ EPBC Act	N/A. The accommodation camp will avoid clearing of native vegetation where possible. There is a potential that a small amount of native vegetation in the form of PCT 76 (derived native grassland) may be cleared for the development of access tracks, however, this will be minimised by locating of tracks in already disturbed areas where feasible. Clearing of trees will be avoided for the development.
2	Loss of hollow-bearing trees	BC Act	N/A. The accommodation camp will avoid clearing of hollow-bearing trees.
3	Infection of native plants by *Phytophthora cinnamomic* (Root-rot fungus)	BC Act/ EPBC Act	Any activity that moves soil, water or plant material can spread or introduce *Phytophthora cinnamomi*. The construction and operation of the accommodation camp may increase the risk of introducing or spreading *Phytophthora cinnamomi* as it will require the movement of soil, water and plant material.
4	Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	BC Act	Exotic Rust Fungi is not currently known from the NSW South Western Slopes bioregion. Within the subject land, Myrtaceous species formed a dominant flora family. Spores of *Uredo rangelii* (Myrtle rust) are dispersed by wind, water, on plant material including seed, on equipment and clothing. The construction and operation of the accommodation camp may increase the risk of introducing or spreading Exotic rust fungi through the movement of soil and water as well as the presence and movement of equipment.
5	Invasion and establishment of exotic vines and scramblers	BC Act	The invasion and establishment of exotic vines and scramblers, exotic perennial grasses and African Olive (*Olea europea**) is a potential indirect impact of the construction and operation of the accommodation camp. The spread and establishment of African Olive (*Olea europea**), exotic perennial grasses (i.e. *Paspalum dilatatum**) and exotic vines and scramblers from surrounding areas may be facilitated through the movement of soils and machinery.
6	Invasion of native plant communities by exotic perennial grasses	BC Act	
7	Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.	BC Act	

#	Key threatening process	Relevant legislation	Relevance to proposed action
8	Novel biota and their impact on biodiversity	EPBC Act	This process includes the competition, predation or herbivory and habitat degradation of vertebrate and invertebrate pests, terrestrial weeds, aquatic weeds and marine pests as well as the mortality, habitat loss and degradation caused by pathogens. This corresponds to the introduction of exotic vines and scramblers and exotic perennial grasses, introduction of Exotic Rust Fungi, *Phytophora cinnamomi,* all of which are detailed individually in this table.

4.2.5 Mitigation measures

The site for the accommodation camp was chosen based on minimal environmental impact. The layout of the accommodation camp will be designed to avoid impacts on identified biodiversity values, including the narrow strip of native remnant woodland along the eastern boundary of the site (consisting of a TEC and providing potential habitat for threatened species) and the scattered tree in the centre of the site.

Further mitigation measures to minimise potential indirect impacts on identified biodiversity values are outlined in Chapter 5.

4.3 Heritage

4.3.1 Overview

This section includes assessment of potential impacts, recommendation of measures to avoid impacts and mitigation for any unavoidable impacts, relating to heritage in the study area.

The assessment was conducted in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (Department of Environment, Climate Change and Water (DECCW), 2010), other relevant guidelines and legislation.

4.3.2 Methodology

The identification of heritage constraints within the accommodation camp site was based on a desktop assessment and review of the proposal's existing ACHAR.

The assessment involved:

- review of environmental context information such as land use history, geology, soils, and hydrology of the accommodation camp and its surrounds
- identification of known Aboriginal and historical heritage items and the potential for additional unrecorded heritage items and/or archaeological deposits to occur within the accommodation camp site through:
  - review of the Aboriginal Heritage Information Management System (AHIMS) database and associated existing heritage and environmental reports
  - searches of statutory heritage registers, including the Australian Heritage Database (which includes results from the World Heritage List, Commonwealth Heritage List, National Heritage List and the State Heritage Inventory (which includes results from the State Heritage Register (SHR), Local Environmental Plans, and Section 170 registers))
  - preparation of a predictive model for the occurrence of possible Aboriginal cultural sites in and around the accommodation camp site
  - consultation as detailed below.

Extensive consultation was undertaken during the Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared for the proposal. During this process, the RAPs did not identify any cultural heritage concerns or comments about the accommodation camp site.

Informal consultation by letter was undertaken on 14 June 2022 with the Young LALC, and a number of RAPs who were previously engaged in helping to identify heritage values that would potentially be impacted by the proposal (refer to section 3.8). These RAPs were informed in writing of the proposed accommodation camp and the outcomes of this assessment and were provided an opportunity to respond within 2 weeks. No responses were received at the end of this period.

4.3.3 Existing environment

4.3.3.1 Environment and landscape

The nature and availability of resources, including water, flora and fauna, and suitable raw materials for the manufacture of stone tools and other items, had (and continues to have) a significant influence on the way in which people utilise the landscape.

Alterations to the natural environment also impact upon the preservation and integrity of any cultural materials, whether Aboriginal or non-Aboriginal, whilst current vegetation and erosional regimes affect the visibility and detectability of sites and objects. For these reasons, it is essential to consider the environmental context as a component of any heritage assessment.

The workforce accommodation site is characterised by two soil landscapes. The northern extent consists of the Narraburra soil landscape, whilst the Oakville soil landscape covers the southern extent.

The Narraburra soil landscape is typified by broad alluvial plains formed on Quaternary alluvium. Wind-blown sand deposits and prior stream formations occur throughout the plains. It has been classified as a ‘stagnant alluvial’ soil landscape indicating that it is no longer subject to depositional process, suggesting that any archaeological site formation would likely be of some antiquity.

The Oakville soil landscape is classified as a Transferral landscape generally found on gently undulating foot slopes and plains formed on recent Quaternary colluvium. It is a deep soil profile deriving from eroded parent materials washing down slope and may have resulted in the accumulation of archaeological deposits.

4.3.3.2 Historical background

Aboriginal

The accommodation camp site lies within the traditional lands of the Wiradjuri language group (AECOM, 2019). The Wiradjuri group occupies the largest geographic area of New South Wales of all Aboriginal groups (Briggs et al., 2011).

The Regional Histories of New South Wales states that the name ‘Wiradjuri’ means ‘people of the three rivers’, these rivers being the Macquarie, Lachlan, and Murrumbidgee (AECOM, 2019). These three rivers were key resource zones for the Wiradjuri people, providing a stable, abundant, and varied supply of food provisions including shellfish and fish such as Murray cod.

The accommodation camp site lies approximately 65kms north of the Murrumbidgee, being the closest of these three rivers. The accommodation camp site is also close to the south-eastern boundary of the Wiradjuri Country, which borders the south-eastern highlands (Tindale, 1974). Wiradjuri Country between the Murrumbidgee and the Lachlan Rivers covers mainly undulating plains over a distance of approximately 180kms with minor flanking ranges to the east. A range of smaller permanent and ephemeral creeks cross the plains providing freshwater sources. Where the Wiradjuri people lived further from the main rivers, the aquatic food resources were supplemented with kangaroos and emus hunted for their meat, as well as fresh fruit, nuts, yam daisies, wattle seeds and orchid tubers.

The Wiradjuri people generally moved around in small groups, using the river flats, open land and waterways with some regularity through the seasons as indicated by the scattered archaeological evidence in the region (NSW Office of Environment and Heritage (OEH), 2019). Journeying 100kms and more to the southeast would have provided a range of additional resources from the southern alps and the Brindabella Ranges.

The Wiradjuri people carved trees to create shields, coolamons and canoes from the bark. Scarred trees were also selected specifically as markers, or signposts, within the cultural landscape to show areas of abundant resources or where people congregated (Cootamundra Aboriginal Working Party, 2018). Carved trees were also used to mark the burial sites of celebrated men whose passing had great effect on the community (Briggs et al., 2011). Often, only one tree was carved at each burial site; however, in some cases up to five carved trees have been identified for one burial (Briggs et al., 2011).

The arrival of Europeans in the areas in the early 1800's had a devastating impact on the traditional Wiradjuri lifestyle:

> *Clashes between the new European settlers and the local Aboriginal people were common around the Murrumbidgee and even further north, particularly between 1839 and 1841. These violent incidents have been termed the 'Wiradjuri wars' and involved removal of cattle and spearing of stockmen by the Wiradjuri people in response to killing of their people as well as loss of their fishing grounds and significant sites following invasion by the new settlers* (OEH, 2019).

Wiradjuri people continue to occupy the local region around the Murrumbidgee, Lachlan and Macquarie rivers and the surrounding towns.

Non-Aboriginal

The first European to arrive in the Riverina area was John Oxley in 1817. Several years prior, George Evans, Oxley's assistant, had observed the Lachlan River and reported the country southwest of Bathurst to be of suitable quality for pastoralism. Oxley was subsequently tasked with ascertaining 'the real course … of the Lachlan … and whether it falls into the sea, or into some inland lake' (Dunlop, 1828).

Several other surveyors mapped the area in the years following Oxley. Hamilton Hume and William Hovel arrived in the Albury area in 1824 charged with finding new grazing land, while Charles Sturt mapped the Wagga Wagga area in 1829 as part of an expedition to chart the course of the Murrumbidgee River.

The Stockinbingal area was settled sometime in the mid-nineteenth century, although was not gazetted as a town until the early 1880s (Cootamundra-Gundagai Regional Council, 2017). The announcement of the town was in response to the rapidly expanding NSW railway network. In preparation for the arrival of the railway, Stockinbingal established a commercial precinct, incorporating a hotel, bank, and a number of other businesses (Cootamundra-Gundagai Regional Council, 2017). When the railway station was finally opened in 1893, the town boasted a range of goods and services, such as a butcher, baker, café, mixed retailers, and agricultural stock store (Cootamundra-Gundagai Regional Council, 2017).

The enthusiasm the people of NSW had for the railway network had worn off by the mid-twentieth century. This resulted in many regional towns experiencing population and tourism declines, from which Stockinbingal was not immune. This was compounded by the increased mechanisation of agriculture, which reduced the employment opportunities on the farms surrounding the township (refer to Section 15.3 of the EIS). At some point in the late twentieth century, the railway station was closed. Many of the shops have also subsequently shut down.

4.3.3.3 Historical disturbance

The surrounding area has undergone significant changes over time including vegetation clearance, construction of roads, tracks, dams, fences, and ploughing for crops. Some areas have also been used for stock grazing, which has a less obvious impact to zones of potential archaeological sensitivity, although still creates impacts through erosion. The accommodation camp site has likely been subject to a number of these disturbances.

4.3.3.4 Database searches

Aboriginal heritage

A search of the AHIMS database was conducted on 24 May 2022 (Client Service ID 685163) from Lat/Long -34.5208, 147.8064 to -34.4501, 147.93. A copy of the search is provided in Appendix C.

The search identified five recorded Aboriginal heritage sites within a 2km radius of the accommodation camp, as shown in Table 4.2. No sites have previously been recorded within the accommodation camp site.

Table 4.2 Results of AHIMS search

AHIMS No.	Site name	Site type
50-2-0054	Burley Griffin Way Stockinbingal Artefacts 1	Artefact
50-2-0055	Burley Griffin Way Stockinbingal Artefacts 2	Artefact
50-2-0056	Burley Griffin Way Stockinbingal PAD 1	Potential Archaeological Deposit (PAD)
50-2-0057	Burley Griffin Way Stockinbingal PAD 2	Potential Archaeological Deposit (PAD)
50-2-0058	Burley Griffin Way Stockinbingal Scar Tree 1	Modified Tree (Carved or Scarred)

The archaeological landscape around Stockinbingal was extensively examined during the preparation of the ACHAR for the EIS. Artefact sites, Burley Griffin Way Stockinbingal Artefacts 1 and 2, were identified as surface isolated artefacts in close proximity to Dudauman Creek, and the lower slope landforms adjacent to the creek was assessed as being a Potential Archaeological Deposit (PAD).

Archaeological excavation of the two PAD sites (AHIMS 50-2-0056 and 50-2-0057) yielded a total of 22 artefacts (GML Heritage, 2021). Collectively, the archaeological record of the area was indicative of general background scatter suggestive of low intensity use and transitory activities, rather than a dedicated occupation zone (GML Heritage, 2021). It was concluded that the assemblage did not demonstrate scientifically significant qualities with regards to the distribution, type, raw material, or size of the artefacts when compared with materials excavated in other comparable areas (refer to Technical Paper 7 (Aboriginal heritage) of the EIS). The total expression of archaeological material in the northern part of the proposal was also generally representative of a background scatter of archaeological evidence rather than any specific dedicated occupation zones.

Based on these results, the following predictive modelling statements were determined (refer to Technical Paper 7 (Aboriginal heritage) of the EIS):

> *Aboriginal occupation sites will mainly be present in association with water sources—primarily lower order streams—although sites may also occur in close proximity to Billabong Creek, Ironbong Creek, Ulandra Creek, Run Boundary Creek, Isobel Creek and Dudauman Creek.*
>
> *Aboriginal occupation sites are most likely to occur on low-gradient, well-drained landforms in close proximity to those water sources. This therefore indicates that the highest area of proposal with the potential for sites to occur is the 15km stretch starting 10km north of Illabo.*

The accommodation camp site lies on the level plains approximately 1.5kms to the north of Dudauman Creek. The nearest recorded Aboriginal heritage site is Burley Griffin Way Stockinbingal Scar Tree 1 (AHIMS 50-2-0058) approximately 1.3kms to the south. The accommodation camp site would be located in an area that is unlikely to have been used for Aboriginal occupation in the past and is unlikely to contain any archaeological site or artefacts.

During previous consultation with the RAPs on site, the cultural values of the accommodation camp site were discussed. The proposal crosses the plains to the west of the Bethungra Ranges which are a significant area for the Wiradjuri people. Caves within these ranges are associated with a cultural story relating to the creation of the Murrumbidgee River and the transformation of Wiradjuri culture from patriarchal to matriarchal. The river systems across these plains provided resources in support of the cultural activity in nearby areas such as the ranges. Scarred trees and ring trees identified in close proximity to the proposal were also discussed as being of significance as tangible indicators of traditional marking of the landscape, the procurement of resources and other ceremonial activities.

The accommodation camp site was not among any areas identified as having any specific cultural values.

No Aboriginal places of heritage significance are listed in the Cootamundra Local Environmental Plan 2013 (Cootamundra LEP).

Non-Aboriginal heritage

Searches of the State Heritage Inventory database and Australian Heritage Database were conducted on 23 May 2022. The searches identified 18 sites recorded within a three km radius of the study area (refer to Table 4.3 and Figure 4.2). No non-Aboriginal heritage sites have previously been recorded within the accommodation camp site.

Table 4.3 Results of State Heritage Inventory and Australian Heritage Database searches

Name	Address	Context	Listing	Item ID
Public School Original Buildings	Britannia Street	Local	Cootamundra LEP	I65
Post Office and Residence	11–13 Dudauman Street	Local	Cootamundra LEP	I66
St Ita's Convent	Geraldra Street	Local	Cootamundra LEP	I68
St Ita's Convent School	3 Geraldra Street	Local	Cootamundra LEP	I69
Stockinbingal Cemetery	Grogan Road, Stockinbingal	Local	Cootamundra LEP	I70
Cohen's Trade Place	22–24 Hibernia Street	Local	Cootamundra LEP	I71
Federation Period Shop	26 Hibernia Street	Local	Cootamundra LEP	I72
Bank of NSW and Residence	28 Hibernia Street	Local	Cootamundra LEP	I73
Baker, William Fallon	32 Hibernia Street	Local	Cootamundra LEP	I75
Former Powderhorn Museum	44 Hibernia Street	Local	Cootamundra LEP	I76
Kurrajong Trees	Hibernia Street	Local	Cootamundra LEP	I77
Stockinbingal Railway Station	Hibernia Street	Local	Cootamundra LEP	I78
Police Residence	6 Hoskins Street	Local	Cootamundra LEP	I79
Courthouse	6 Hoskins Street	Local	Cootamundra LEP	I80
Former Stockinbingal Hotel	2 Martin Street	Local	Cootamundra LEP	I81
Ellwood's Hall	30 Martin Street	Local	Cootamundra LEP	I82
Soldier's War Memorial Hospital	2 O'Brien Street	Local	Cootamundra LEP	I83
Stockinbingal Heritage Conservation Area	Hibernia Street, Geraldra Street, Martin Street, Fitzgerald Street, Hoskins Street	Local	Cootamundra LEP	C3

An assessment of historical heritage items was undertaken in preparation for the EIS. No unrecorded heritage items or archaeological deposits were identified within or in proximity to the accommodation camp site.

A review of available historical aerial photographs demonstrates that no development has occurred within the accommodation camp site from the latter half of the twentieth century to the present (refer to Figure 1 to Figure 3 in Appendix C). On that basis, the study area is unlikely to have any historical archaeological potential.

4.3.4 Potential impacts

4.3.4.1 Aboriginal heritage

No previously recorded Aboriginal heritage sites are located within the accommodation camp site. The desktop assessment concluded that the accommodation camp area was likely not a preferred occupation area and instead was used for low intensity and transitory activities— the nearest permanent water sources are located approximately 1.5kms south (Dudauman Creek) and 1.7kms east (Bland Creek) of the accommodation camp, and the landforms provide no particular occupation area advantage, such as elevation.

The accommodation camp has likely been extensively impacted by land modification activities, including ploughing and stock grazing. While an inspection of the accommodation camp was not undertaken, it is unlikely that intact landforms would be present.

The likelihood of Aboriginal cultural heritage being located within the accommodation camp is very low, however there is potential to encounter unknown Aboriginal heritage items.

The proposed works would impact the ground surface across the accommodation camp site. Excavation of the ground surface would be minimised as far as possible; however, some areas of topsoil would be removed where levelling is required. Due to the nature of the works, there is limited scope to avoid impact. However, given the likely high level of disturbance the accommodation camp site has been subjected to, these impacts are unlikely to harm any intact landforms.

The construction and operation of the accommodation camp is unlikely to impact Aboriginal cultural heritage sites or objects.

4.3.4.2 Non-Aboriginal heritage

No historical heritage items have been identified within or near the accommodation camp site. Examination of historical aerials did not identify indications of potential archaeological features (e.g., parch marks, mounds, or ruins). The construction and operation of the accommodation camp would not impact any known historical sites or places.

The accommodation camp site is unlikely to contain historical archaeological remains and therefore there are no predicted impacts from the construction and operation of the accommodation camp to potential historical archaeological remains.

4.3.5 Mitigation measures

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential impacts on heritage. No additional mitigation measures are proposed.

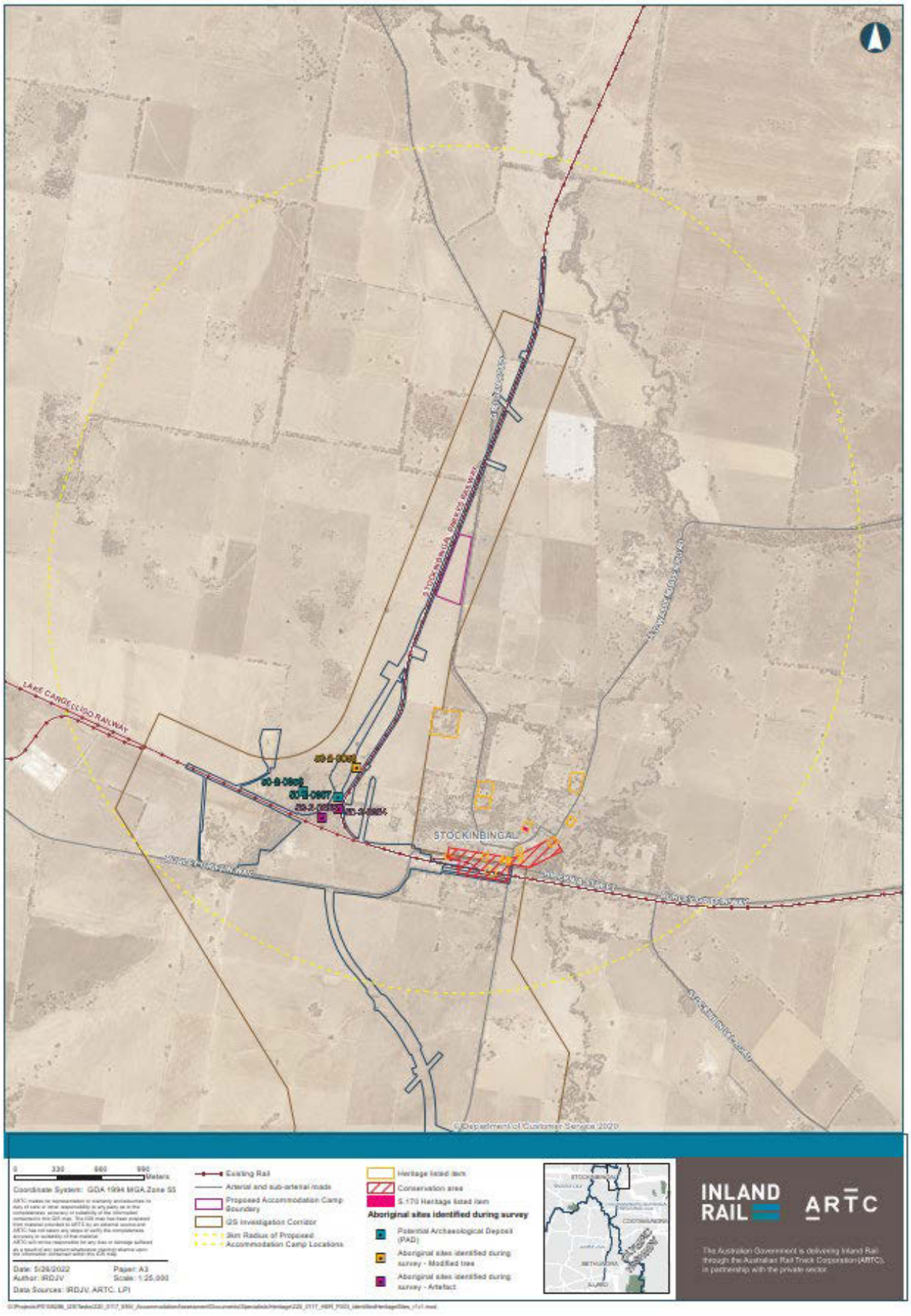


Figure 4.2 Aboriginal and non-Aboriginal heritage

4.4 Traffic, transport and access

4.4.1 Overview

This section includes assessment of potential impacts, recommendation of measures to avoid impacts and mitigation for any unavoidable impacts relating to traffic, transport and access in the study area.

4.4.2 Methodology

The traffic and transport assessment involved:

- a desktop qualitative assessment of the establishment and internal operation of the accommodation camp
- calculation of the traffic generated by mode by the accommodation camp during the peak construction period
- estimation of routes taken between the accommodation camp and proposal construction site accesses
- link assessment (volume/capacity) to estimate Level of Service (LOS) levels on impacted roads during the peak hour of construction in 2024 with comparison to background traffic volumes (without construction). The *Guide to Traffic Generating Developments Version 2.2* (Roads and Traffic Authority, 2002) has been referenced for the LOS categories
- intersection assessment using traffic modelling software (SIDRA 8.0) at an assumed peak period of departure from the accommodation camp
- a comparison of assumptions and findings for this assessment and the traffic, transport and access assessment for the proposal (refer to Chapter 11 (Traffic, transport and access) of the EIS).

The assessment has considered three aspects:

- construction – traffic movements associated with constructing the accommodation camp
- internal operation – traffic and circulation inside the accommodation camp during operation
- impact on the road network – traffic and transport impacts on roads between the accommodation camp and the construction site accesses, and during peak departure from the accommodation camp.

The following assumptions have been made for the assessment:

- the site would accommodate 425 people with a conservative allowance of up to 450 people for surge capacity
- a rotating construction working schedule which may be modified through further development, within the limitation of the proposed construction hours detailed in section 4.5
- deliveries of plant and materials to establish the accommodation camp would take place throughout the program as required and not in a single instance
- there is no change to the background traffic volumes assumed in the EIS
- there is no change to the volumes or routes of plant, equipment and concrete deliveries for the proposal from the EIS
- the workforce would be transported by bus between the accommodation camp and construction site accesses
- the workforce buses are anticipated to be minibuses with a seated capacity of 20 persons at this stage. These would remain at the worksite during the work shift
- for seamless transition of work during peak periods, two fleets of buses are likely to be required, with approximately 12 buses per fleet and an estimated peak of 24 buses. It may be possible to coordinate transport and create efficiencies, but 24 buses have been assumed as a conservative approximation for this assessment
- at the peak of the proposal construction, 225 workers may depart from the accommodation camp and a further 225 workers may arrive at the accommodation camp within a single PM peak hour, resulting in a total of 450 trips. Workers have been assumed to travel in light vehicles with sole occupancy

- for the purposes of this assessment, all workers are assumed to travel south on Grogan Road when departing the accommodation camp. At the Hibernia Street/Dudauman Street intersection, it has been assumed 50% of vehicles travel east towards Cootamundra/Wallendbeen and 50% of vehicles travel west (but initially, and for the purposes of the modelling, south, via Troy Street due to closure of Hibernia Street) towards Temora, Junee and Wagga Wagga
- the same layout for the Hibernia Street/Dudauman Street intersection has been assessed as in the EIS
- the departure of workers from the accommodation camp may coincide with other construction vehicle movements (e.g. haulage, plant deliveries, water tankers)
- a Passenger Car Unit (PCU) of two has been used to convert the buses into equivalent light vehicle movements for the construction traffic link LOS calculations.

The following limitations apply to this assessment:

- assessment of suitability of routes with respect to road safety, condition or design (e.g. pavement conditions, clearances) is excluded
- no additional surveys have been conducted for this study. Road traffic volumes detailed in the EIS have been applied
- only static desktop analysis (no modelling) has been undertaken to calculate estimated level of service on road links
- the assessment is based on the information provided to-date on the proposed operations of the accommodation camp. Refinement of the operations and any changes from the assumptions listed would require reassessment
- no swept path analysis has been undertaken.

4.4.3 Existing environment

The accommodation camp site is located north of the township of Stockinbingal within the Cootamundra-Gundagai Regional Council LGA. The site is bounded by the Stockinbingal to Parkes railway on the west and Grogan Road on the east.

The accommodation camp would be accessed from Grogan Road. Grogan Road is a two-way local road of approximately six m width. It has a speed limit of 100kms per hour, which reduces to 80kms per hour near a level crossing located approximately 600m to the north of the accommodation camp.

4.4.4 Potential impacts

4.4.4.1 Construction

The construction of the accommodation camp would be undertaken over approximately four months period. There would be typically 30 workers on site at its peak, who would be expected to travel by private vehicle to the accommodation camp. The addition of light construction vehicles would have very minimal impacts on the surrounding road network.

Deliveries of plant and materials, as well as the accommodation units, would be made over the course of the construction program and would not be expected to have a significant adverse traffic impact. Access routes of oversized loads would need to be reviewed to check for appropriate clearance heights, turning movements and bridge weight limits. Grogan Road is not a NSW Oversize Overmass Load Carrying Vehicle approved road so an access permit would be required from the National Heavy Vehicle Regulator or Cootamundra-Gundagai Regional Council.

4.4.4.2 Operation

An internal road network will provide circulation around the accommodation camp and access via two locations onto Grogan Road. The internal road network is proposed to be formed for one-way traffic with passing bays.

A car park is proposed at the northern end of the site with direct access to Grogan Road. The car park would be sized to accommodate 450 private light vehicles and 24 buses. The buses would utilise a designated bus pick-up and drop-off zone within the accommodation camp.

The accommodation camp is located at the northern end of the proposal, as illustrated in Figure 4.3. The closest construction site access is access point 11, which is approximately 50m north of the camp. The other ten construction site access points are located south of the accommodation camp. The routes expected to be utilised by the buses are illustrated in Figure 4.3.

Journeys to construction sites

Table 4.4 provides the indicative journey times between the accommodation camp and each construction site access.

Table 4.4 Journey time from accommodation camp to each construction site access location

Road name	Journey time (mins)
Access 1 – Olympic Highway (south)	40
Access 2 – Olympic Highway (north)	40
Access 3 – Old Sydney Road	35
Access 4 – Ironbong Road	35
Access 5 – Dirnaseer Road	26
Access 6 – Old Cootamundra Road	7
Access 7 – Dudauman Road	5
Access 8 – Burley Griffin Way	1
Access 9 – Burley Griffin Way	2
Access 10 – Hibernia Street	1
Access 11 – Grogan Road	1

Source: Google Maps

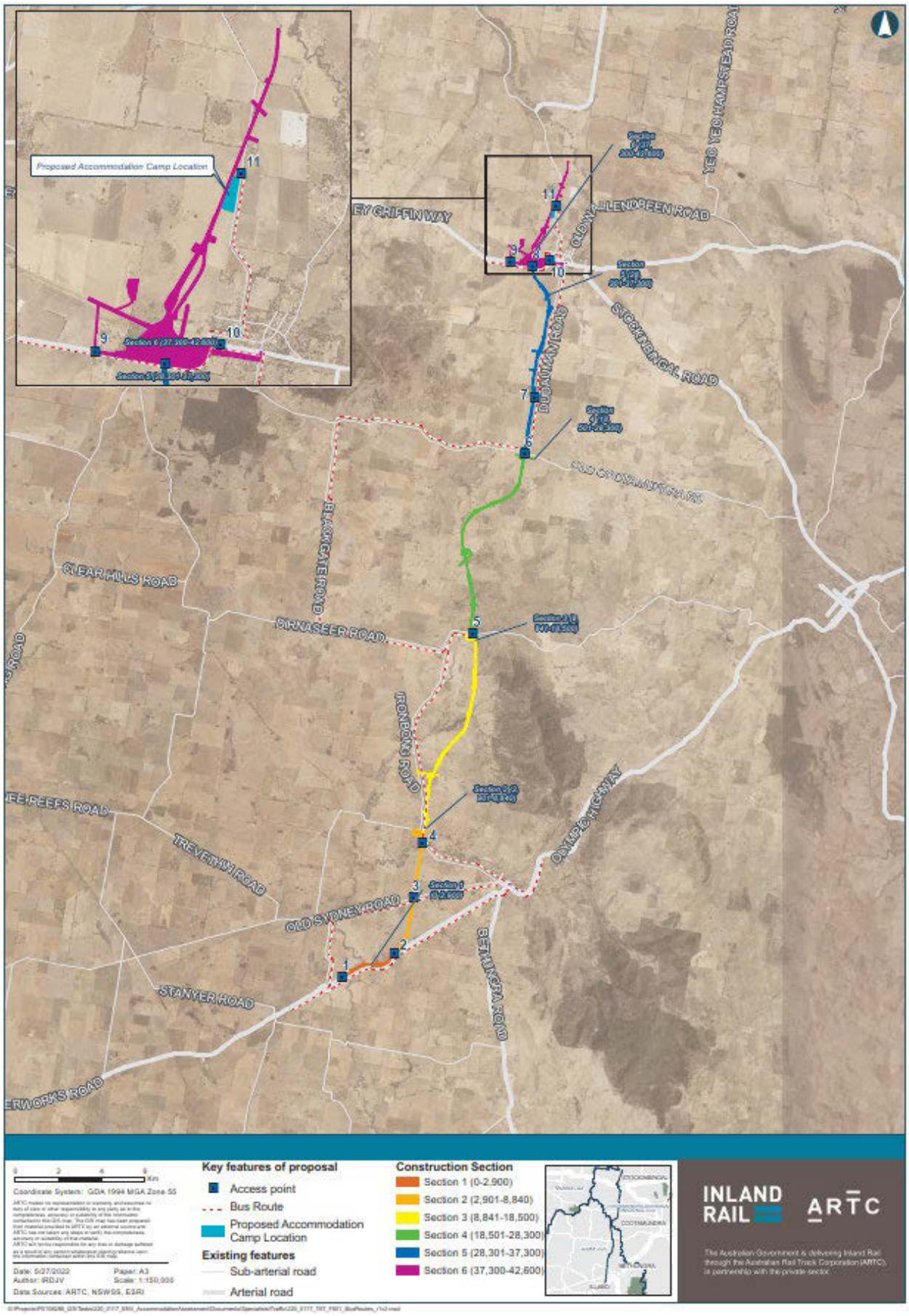


Figure 4.3 Bus routes between the accommodation camp and access points

Road network performance

The level of service (LOS) for the roads used by the buses have been estimated for the year 2024, with and without construction vehicles. The 'without construction vehicles' scenario uses background traffic volumes only. The results of the link assessments are outlined in.

For the purpose of this assessment, bus trips have been converted into PCUs while construction vehicle trips have been maintained as heavy vehicles due to the slower speeds, acceleration and deceleration experienced by these vehicles.

Table 4.5 Construction link assessment (2024)

Road name	Background AADT two-way volumes	Peak hour background traffic volumes			Peak hour LOS without construction vehicles	Peak hour construction vehicle volumes			Peak hour total vehicle volume with construction vehicles	Peak hour LOS with construction vehicles
		LV*	HV*	Total		Buses[2]	HV*	Total		
Burley Griffin Way (east of Ellwood Street)	850	48	28	77	B	48	44	92	169	B
Burley Griffin Way (west of Temora Street)	1,090	67	31	98	B	48	44	92	190	B
Grogan Road	86	5	3	8	B	48	66	114	122	B
Hibernia Street	1,217	81	28	110	B	48	100	148	258	B
Troy Street[1]	1,246	83	29	112	B	48	130	178	290	B
Dudauman Road	86	5	3	8	B	48	96	144	152	B
Old Cootamundra Road	274	18	6	25	B	48	100	148	173	B
Dirnaseer Road (east of alignment)	68	5	1	6	B	48	44	92	98	B
Ironbong Road (east of alignment)	25	2	1	2	B	48	114	162	164	B
Old Sydney Road (east of alignment)	16	1	0	1	B	48	58	106	107	B
Olympic Highway (west of Bethungra)	1,757	125	33	158	B	48	114	162	320	B
Retreat Road	46	4	1	4	B	48	66	114	118	B
Junee Reefs Road	39	3	1	4	B	48	66	114	118	B
Goldfields Way	1,757	125	33	158	B	48	66	114	272	B
Stockinbingal Road	274	18	6	25	B	48	44	92	117	B

(1) Figure taking into consideration temporary closure of Hibernia Street and diversion onto Troy Street.

(2) Buses are considered as 2 x PCUs for this assessment

(*) LV = light vehicles; HV = heavy vehicles

As shown in Table 4.5 all roads subject to the assessment are estimated to operate at LOS B during the 2024 peak hour without and with construction vehicles.

Comparison with EIS assumptions and results

The utilisation of an accommodation camp is a change in assumption from the EIS, therefore the modelling results would be affected. This section describes the key differences in assumptions and displays the link assessments under both scenarios, with:

- construction but without the accommodation camp
- construction with the accommodation camp.

The intersections have not been remodelled at this stage but would also be impacted.

The EIS assumes that the workforce is accommodated in local towns to the proposal, including Wagga Wagga, Junee, Temora, Cootamundra and Young. This assumption results in a variety of construction routes being used to access different sections of the proposal and has the effect of distributing the traffic onto different roads and approaches to site access points. It also assumes that the construction sites are accessed by private car, with two persons sharing a vehicle. The volume of vehicles in use has changed from the EIS assumption of 80 private cars (light vehicles) for each section of the proposal to 24 buses (heavy vehicles) across the proposal. The pattern of use has remained the same. The workers are assumed in the EIS to all arrive in private cars at the construction access points in the morning to park and leave in the afternoon. Similarly, the buses servicing the accommodation camp will drop workers off and park at the construction access points in the morning and leave in the afternoon.

The estimated changes to the number of construction vehicles on roads, and the resulting calculated LOS are shown in Table 4.6.

Table 4.6 Comparison of peak hour construction vehicle volumes with and without the accommodation camp

Road name	Without accommodation camp					With accommodation camp				
	Peak hour construction vehicle volumes			Peak hour total vehicle volume with construction	Peak hour LOS with construction vehicles	Peak hour construction vehicle volumes			Peak hour total vehicle volume with construction	Peak hour LOS with construction vehicles
	LV	HV	Total			Buses[2]	HV	Total		
Burley Griffin Way (east of Ellwood Street)	87	44	131	208	B	48	44	92	169	B
Burley Griffin Way (west of Temora Street)	72	44	116	214	B	48	44	92	190	B
Grogan Road	80	66	146	153	B	48	66	114	122	B
Hibernia Street	159	100	259	369	C	48	100	148	258	B
Troy Street[1]	159	130	289	401	C	48	130	178	290	B
Dudauman Road	80	96	176	183	B	48	96	144	152	B
Old Cootamundra Road	159	100	259	284	B	48	100	148	173	B
Dirnaseer Road (east of alignment)	87	44	131	138	B	48	44	92	98	B
Ironbong Road (east of alignment)	87	114	202	204	B	48	114	162	164	B
Old Sydney Road (east of alignment)	44	58	102	103	B	48	58	106	107	B

Road name	Without accommodation camp					With accommodation camp				
	Peak hour construction vehicle volumes			Peak hour total vehicle volume with construction	Peak hour LOS with construction vehicles	Peak hour construction vehicle volumes			Peak hour total vehicle volume with construction	Peak hour LOS with construction vehicles
	LV	HV	Total			Buses[2]	HV	Total		
Olympic Highway (west of Bethungra)	87	114	202	360	C	48	114	162	320	B
Retreat Road	107	66	173	177	B	48	66	114	118	B
Junee Reefs Road	107	66	173	177	B	48	66	114	118	B
Goldfields Way	107	66	173	331	B	48	66	114	272	B
Stockinbingal Road	87	44	131	156	B	48	44	92	117	B

(1) Figure taking into consideration temporary closure of Hibernia Street and diversion onto Troy Street.

(2) Buses are considered as 2 x PCUs for this assessment

The results outlined in show that with the use of buses to travel to and from the accommodation camp makes for generally fewer vehicles on the roads and improved LOS results in comparison to the scenario assessed in the EIS where there is considerably more private car use to travel to and from the construction access points.

Travel to and from the accommodation camp

Workers arriving and departing the accommodation camp for leisure or at the start and end of working periods will add to the background volumes on the road network. At the end of a working period, as many as 225 workers may leave the site in a short period of time. Depending on the distribution of these trips there may be short-term congestion at nearby intersections.

A high-level review of the route options from the accommodation camp has been carried out and it is considered likely that the majority of departing worker traffic would travel south on Grogan Road and pass through the Hibernia Street/Dudauman Street intersection. From this intersection, workers could continue to nearby townships of Temora, Cootamundra, Young, Junee and Wagga Wagga. This intersection has been modelled with 225 workers travelling on the northern approach. The background traffic and proposal construction heavy vehicle movements at this intersection have been maintained as per the EIS. The results are provided in Table 4.7.

Table 4.7 Hibernia Street/Dudauman Street - 2024 PM peak with construction vehicles and departing workforce

Approach	Degree of Saturation (v/c)	Average delay (s)	LOS	95th % queue length (m)
Hibernia Street (W)	0.102	4.7	A	6.3
Hibernia Street (E)	0.131	5.2	A	4.4
Dudauman Street (N)	0.379	7.2	A	17.2
Dudauman Street (S)	0.499	14.5	B	36.2

Table 4.6 shows that acceptable levels of service are maintained at all approaches to this intersection with the addition of the departing workforce.

4.4.5 Mitigation measures

It is recommended that general mitigation measures to manage impacts to traffic, transport and access outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are implemented during the design and construction phases of the accommodation camp.

Additional mitigation measures recommended for the design, construction and operation of the accommodation camp are outlined in Chapter 5.

4.5 Noise and vibration

4.5.1 Overview

This section includes assessment of potential impacts, recommendation of measures to avoid impacts and mitigation for any unavoidable impacts relating to noise and vibration in the study area.

4.5.2 Methodology

The noise assessment involved updating the existing noise model developed as part of the Construction Noise and Vibration Impact Statement (CNVIS) prepared for the proposal (refer to Chapter 15 (Noise and vibration) and Technical Paper 8 (Construction Noise and Vibration Impact Assessment) of the EIS) to include the establishment and operation of the accommodation camp.

The noise assessment was conducted as a desktop study and has considered:

- noise impacts from the establishment of the camp – broken down into 5 isolated scenarios
- noise impacts from the operation of the camp
- increased traffic noise impacts due to the construction and operation of the camp.

Potential noise impacts during the construction and operation were modelled using SoundPLAN 8.2. Consistent with the EIS, this modelling considered the sound power levels of plant and activities, dispersion due to geometrical spreading and ground and air absorption.

Road traffic noise impacts were assessed by updating the Calculation of Road Traffic Noise (CoRTN) (CoRTN) (UK Department of Transport, 1988) calculations from the EIS with the additional traffic due to the camp.

Vibration impacts were considered to be negligible due to the large distances between the accommodation camp and sensitive receivers and were therefore not subject to further assessment.

4.5.3 Existing environment

The location of the accommodation camp and the surrounding noise sensitive receivers are presented in Figure 4.4. Noise criteria relevant to this assessment have been reproduced from the CNVIS in Table 4.8 and Table 4.9.

Table 4.8 Noise management levels for residential receivers

Time	RBL dBA[1]	Noise management level dBA $L_{eq,\ 15\ minute}$	Highly noise affected level dBA $L_{eq,\ 15\ minute}$
Standard hours[2]	35	45	75
Out of hours – Day[3]	35	40	N/A
Out of hours – Evening[3]	30	35	
Out of hours – Night[3]	30	35	

(1) Background levels are below the minimum assumed rating background noise levels outlined in the *Noise Policy for Industry* (EPA, 2017) (NPfI) at all measurement locations along the proposed corridor, as such, they have been adjusted to 35dBA during the day period, and 30dBA during the evening and night periods in accordance with the NPfI (see CNVIS for detail on measurement of existing environment)

(2) Standard hours period defined as – Monday to Friday 7am to 6pm, Saturday 8am to 1pm, and no work on Sundays or public holidays

(3) Out-of-hours periods defined as – Day: Saturday 7am to 8am and 1pm to 6pm, Sunday 8am to 6pm; Evening: Monday to Sunday 6pm to 10pm; Night: Monday to Saturday 10pm to 7am, Sunday 10pm to 8am

Table 4.9 Noise management levels for non-residential sensitive receivers

Land use	Noise management level dBA $L_{eq,\ 15\ minute}$
Educational	45
Commercial (offices, retail outlets)	40
Commercial (industrial)	35
Active Recreation	35

(1) An internal to external correction of +10dB has been applied as per the Interim Construction Noise Guideline (DECC, 2009) (ICNG)

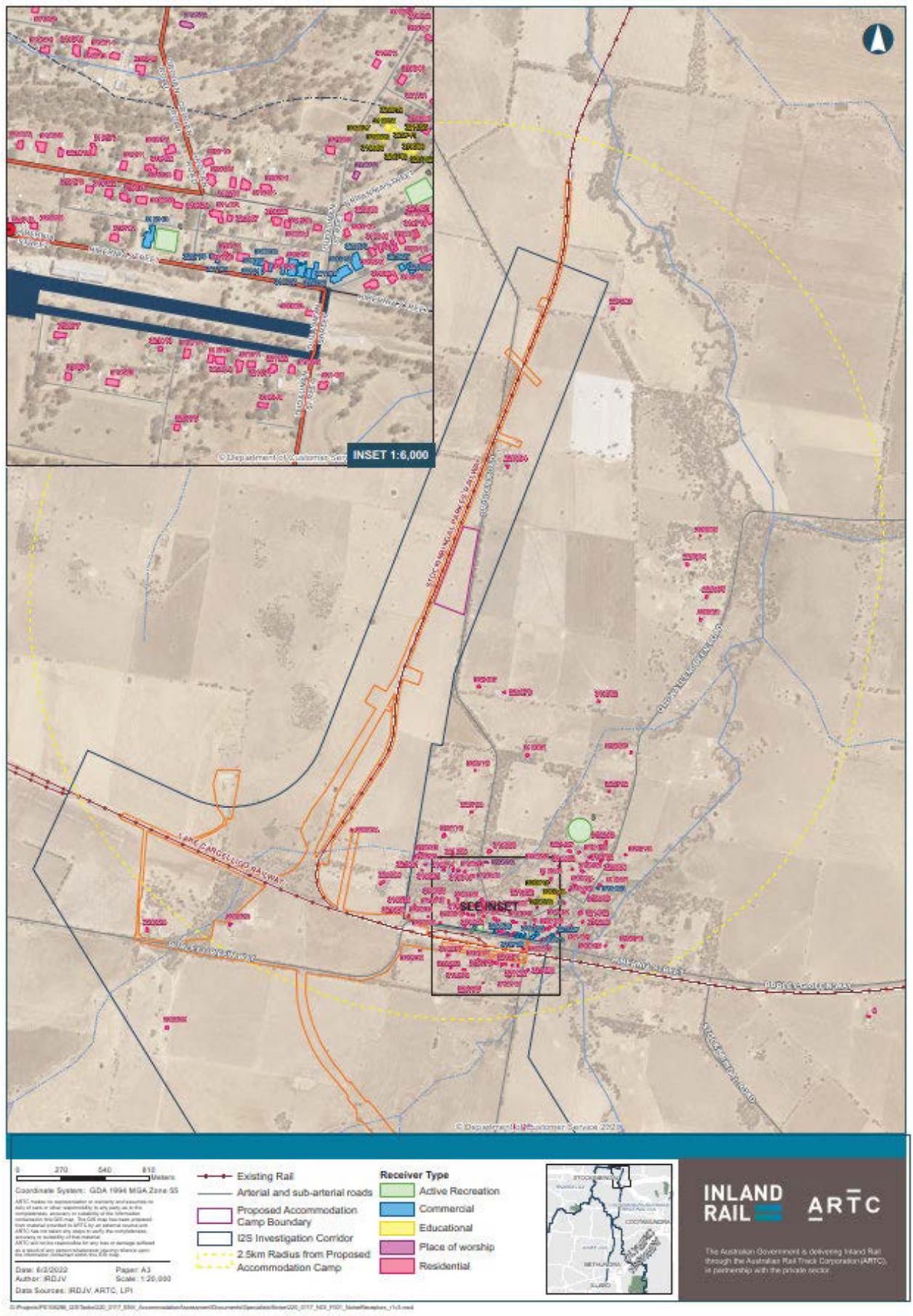


Figure 4.4 Noise receivers within 2.5kms of the accommodation camp

4.5.4 Potential impacts

4.5.4.1 Construction

The construction of the accommodation camp has been broken down into five separate scenarios. These construction scenarios and the associated noise intensive plant and activities are presented in Table 4.10. Construction scenarios have been developed based on the expected construction methodology and likely plant and equipment that will be used.

Contours showing the predicted impacts for each of the construction scenarios are presented in Figure 4.5 to Figure 4.9.

Following completion of these construction scenarios some finishing works are expected to be required. Typical noisiest plant and activities for these works are light vehicles and hand tools. Adverse noise impacts on surrounding receivers from these works are expected to be negligible.

Table 4.10 Construction scenarios and plant equipment

Scenario ID	Construction scenario	Approximate duration of construction scenario	Plant	SWL
E1	Clearing and prep works	3 weeks	Chainsaw	110
			D6 dozer	115
			30T excavator	108
E2	Earthworks and drainage	4 weeks	Padfoot roller	109
			140h grader	115
			D6 dozer	115
			Water carts	107
			Smooth drum roller	107
			20T excavator	108
E3	Pavement	7 weeks	Padfoot roller	109
			140h grader	115
			Water carts	107
			Smooth drum roller	107
E4	Installation of structures (dongers)	8 weeks	Flatbed trucks	100
			Crane	98
			Concrete truck	107
			Hand tools	110
E5	Decommissioning and removal of accommodation camp	3 weeks	Flatbed trucks	100
			Crane	98
			Hand tools	110
			Excavator with hydraulic hammer	122

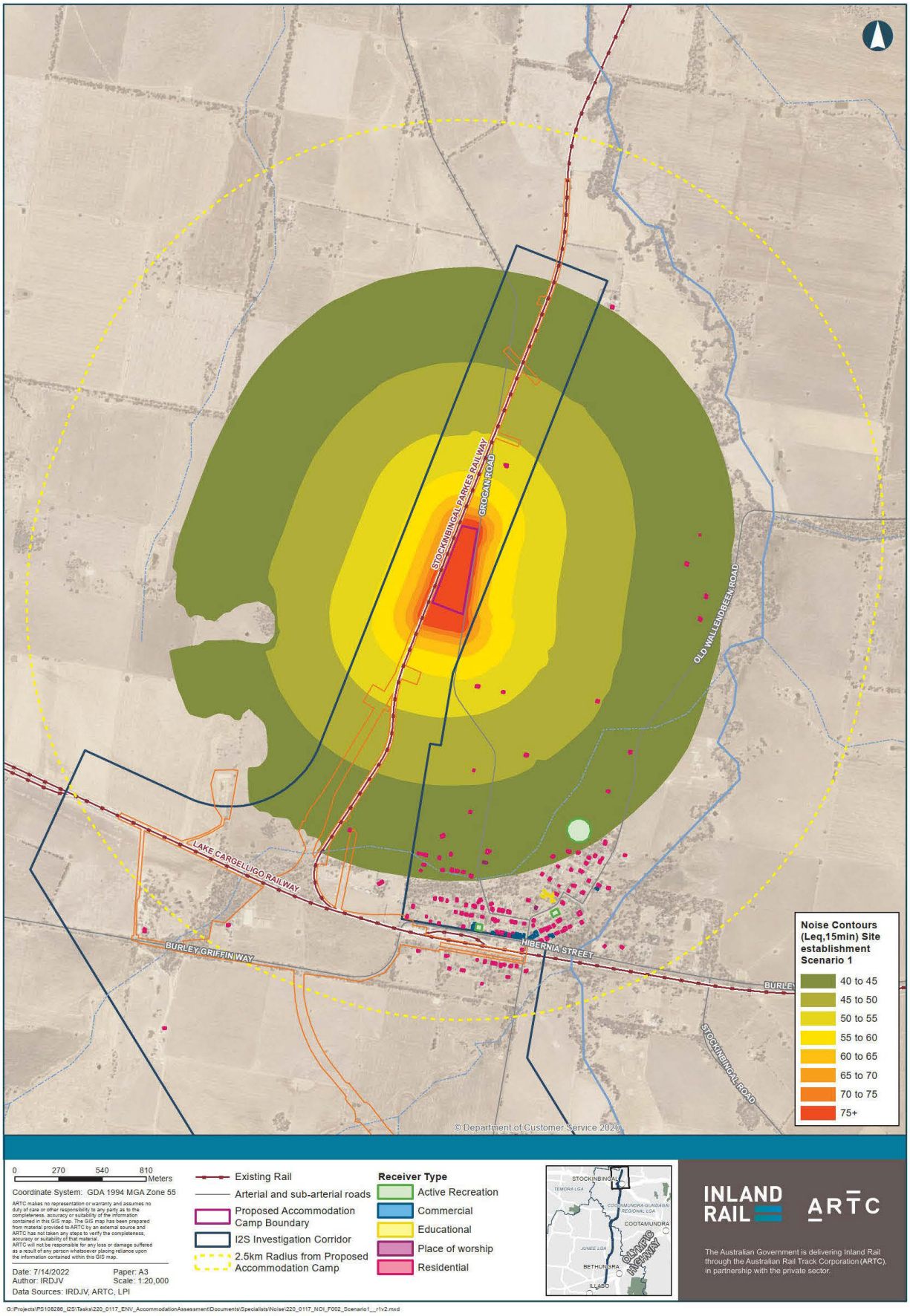


Figure 4.5 Noise contours – construction (E1)

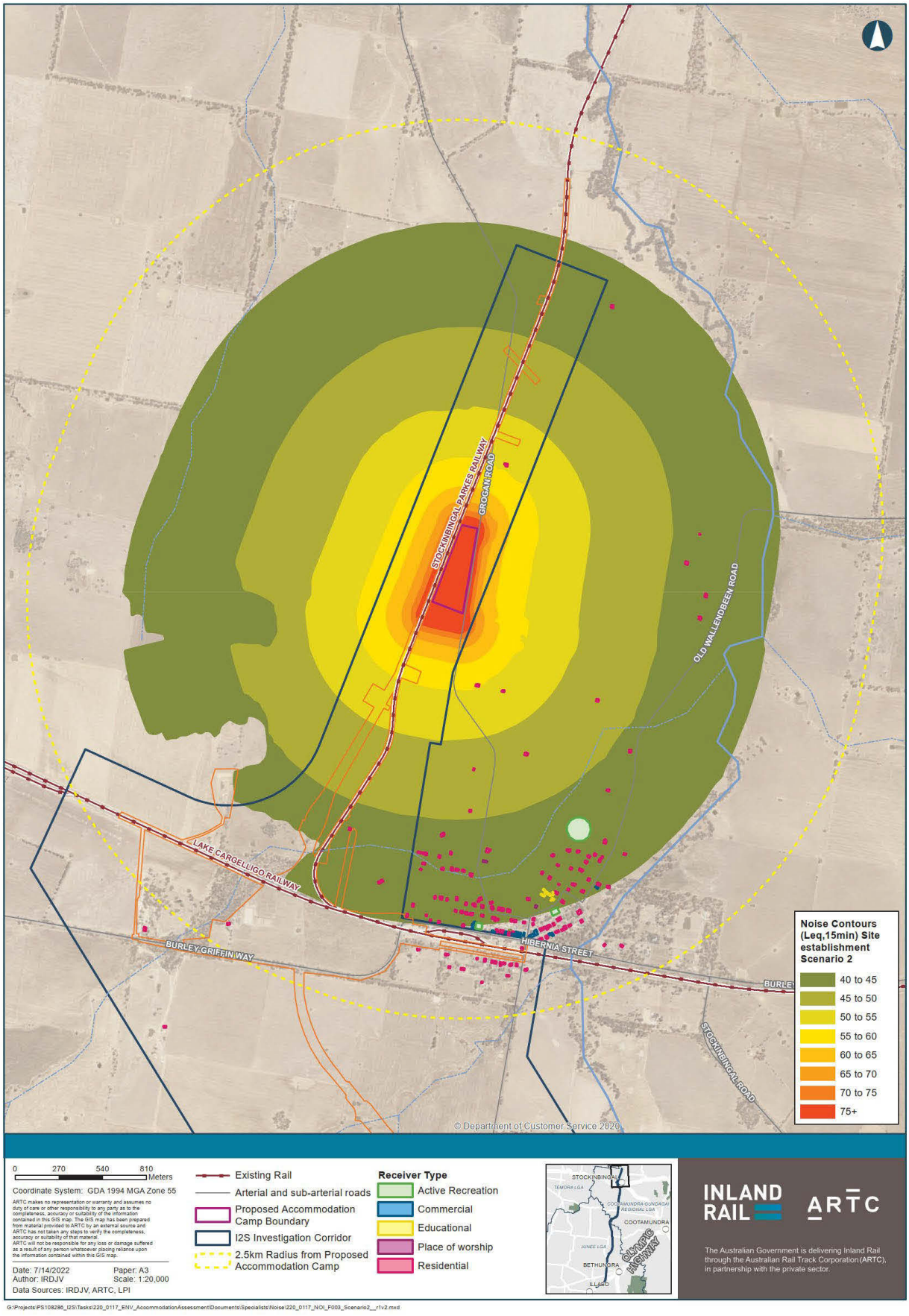


Figure 4.6 Noise contours – construction (E2)

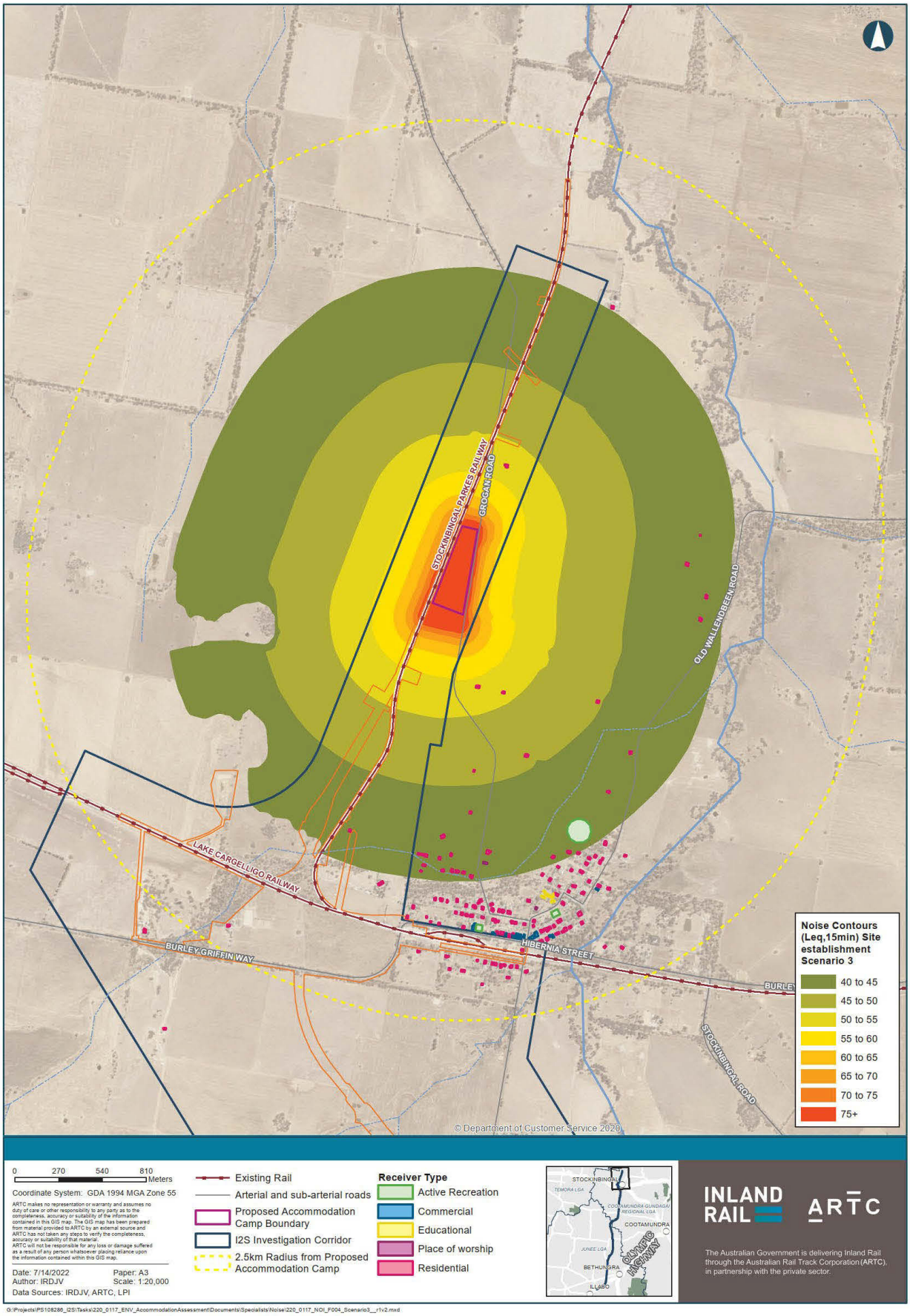


Figure 4.7 Noise contours – construction (E3)

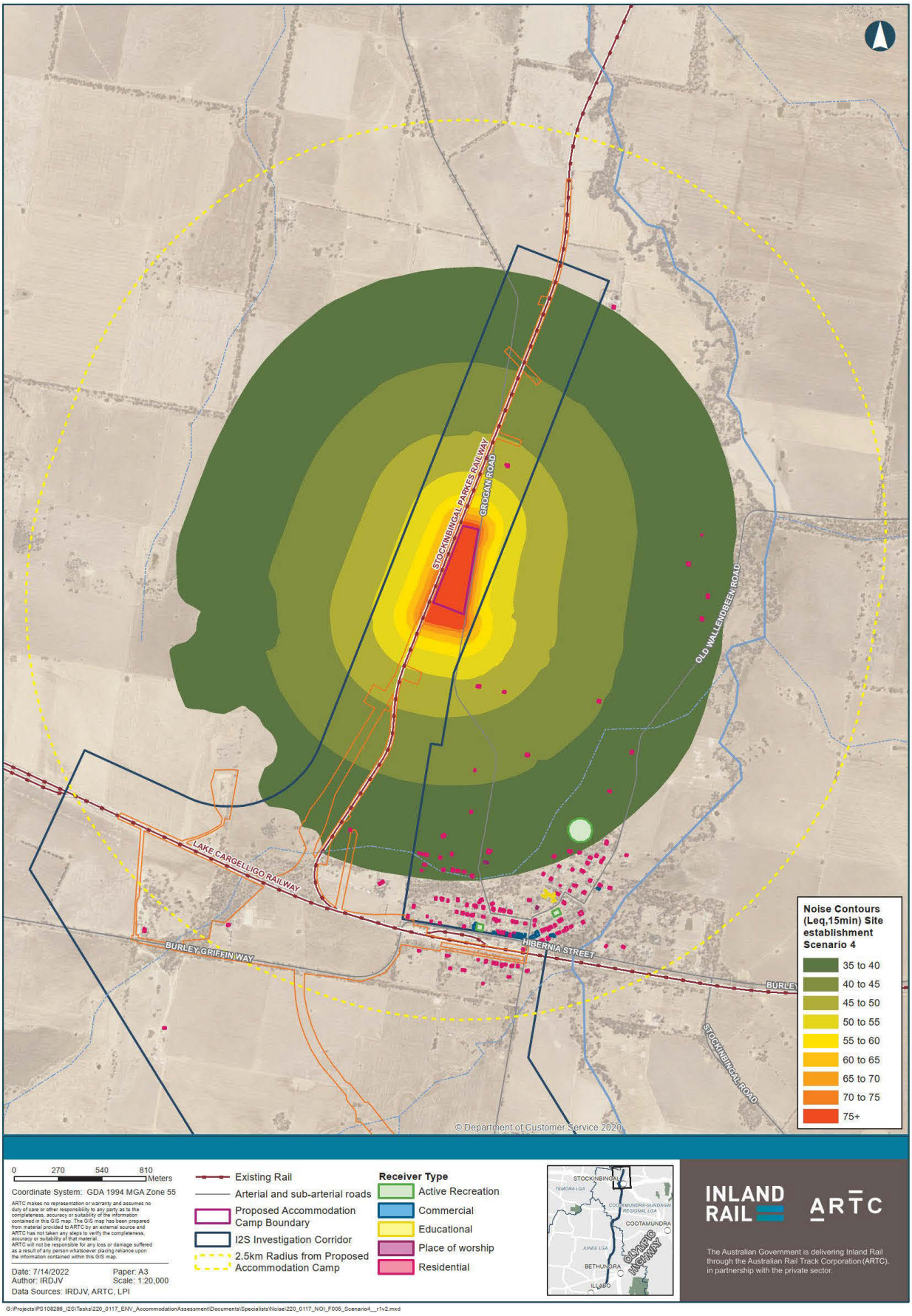


Figure 4.8 Noise contours – construction (E4)

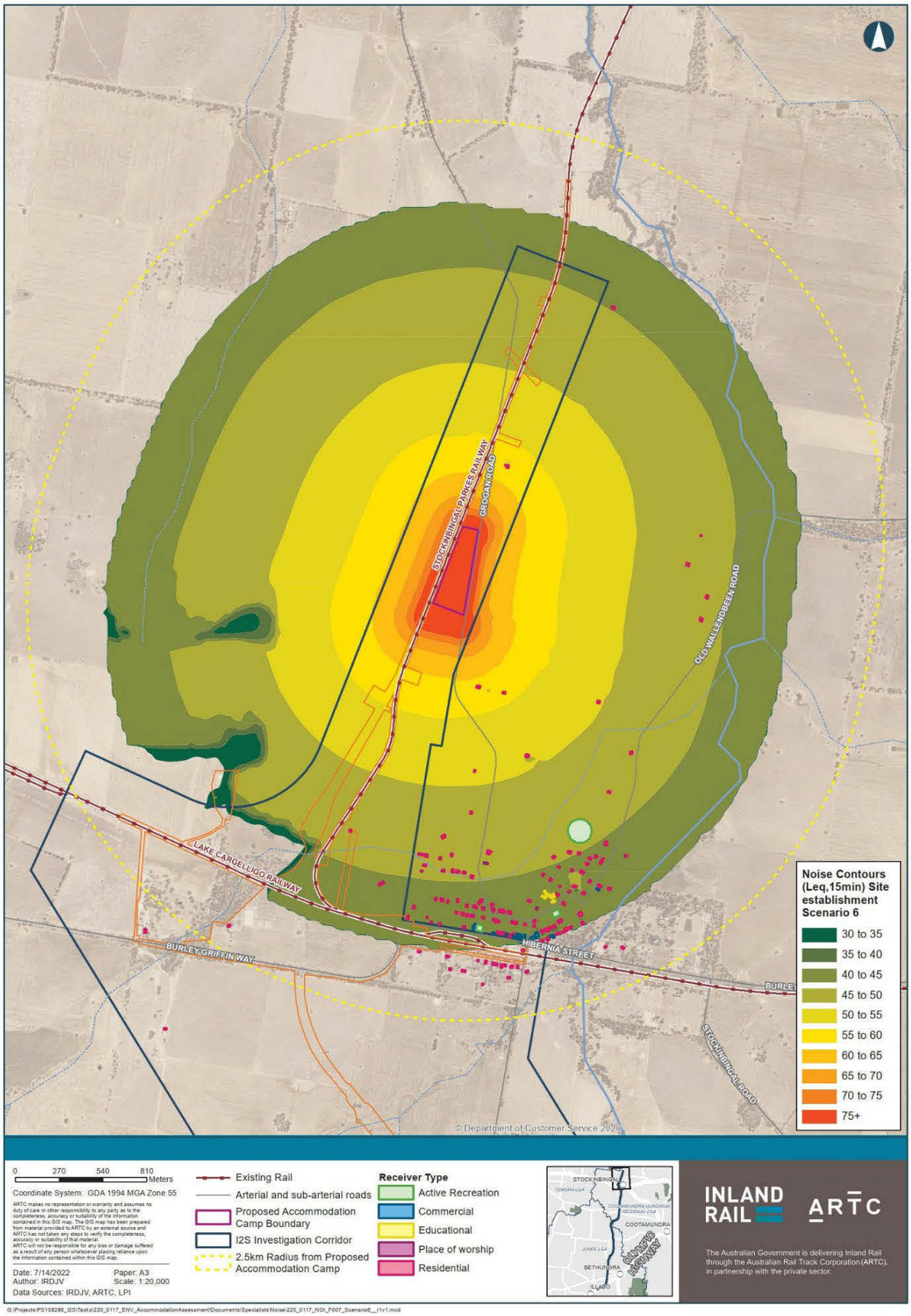


Figure 4.9 Noise contours – construction (E5)

Residential sensitive receivers

The number of sensitive receivers near the accommodation camp where noise management levels (NMLs) would be exceeded is presented in Table 4.11 and the number of receivers exceeding standard hours NMLs by magnitude is presented in Table 4.12.

Table 4.11 Predicted noise level assessment

Timing[1]	NML	Number of residential receivers exceeding NMLs					Number of residential receivers highly noise affected				
		Scenario E1	Scenario E2	Scenario E3	Scenario E4	Scenario E5	Scenario E1	Scenario E2	Scenario E3	Scenario E4	Scenario E5
Standard Hours	45	6	7	6	3	28	0	0	0	0	0
Expected duration of scenario		3 weeks	4 weeks	7 weeks	8 weeks	3 weeks	3 weeks	4 weeks	7 weeks	8 weeks	3 weeks

(1) ICNG standard hours includes Monday to Friday 7am to 6pm and Saturday 8am to 1pm

Table 4.12 Number of receivers exceeding standard hours NMLs by magnitude

Period	Number of residential receivers exceeding Standard Hours NML[1]			
	<5 dB	5 to 15 dB	15 to 25 dB	>25 dB
Scenario E1				
Standard Hours	3	3	0	0
Scenario E2				
Standard Hours	4	3	0	0
Scenario E3				
Standard Hours	3	3	0	0
Scenario E4				
Standard Hours	3	0	0	0
Scenario E5				
Standard Hours	23	5	0	0

(1) Exceedance categories correlate to trigger ranges for additional mitigation measures outlined in Section 8.3 of EIS

Non-residential sensitive receivers

There are no exceedances of NMLs predicted for commercial, educational, active and passive recreation receivers for any of the construction scenarios.

4.5.4.2 Operation

This assessment considers the operation of the accommodation camp following construction. The camp operation was assessed against the same criteria as the camp establishment as it is considered a construction compound.

The assessment considered one operational noise scenario. It considers the air conditioning units for each of the cabins as the dominant noise emissions from the accommodation camp. Occasional noise from the use of outdoor recreational areas has also been included. Noise sources and levels during operation are presented in Figure 4.10 and outlined in Table 4.13.

Table 4.13 Noise sources and levels during operation

Scenario ID	Plant	SWL $L_{Aeq(15\ min)}$
O1	450 AC units – one per room	92
	Use of outdoor recreational areas	90

Residential sensitive receivers

The number of sensitive receivers near the accommodation camp where NMLs would be exceeded during operation is presented in Table 4.14.

Table 4.14 Predicted noise level assessment

Timing[1]	NML	Number of residential receivers exceeding NMLs	Number of residential receivers highly noise affected
		Scenario O1	Scenario O1
Standard Hours	45	0	0
Out of Hours – Day	40	0	N/A
Out of Hours – Evening & Night	35	0	N/A

(1) ICNG standard hours includes Monday to Friday 7am to 6pm and Saturday 8am to 1pm, Out of Hours Day any time within 1pm to 6pm Saturday and 8am to 6pm Sunday, and outside standard hours, Out of Hours – Evening & Night at all other times

Non-residential sensitive receivers

There are no exceedances of NMLs predicted for commercial, educational, active and passive recreation receivers for the operational assessment scenario.

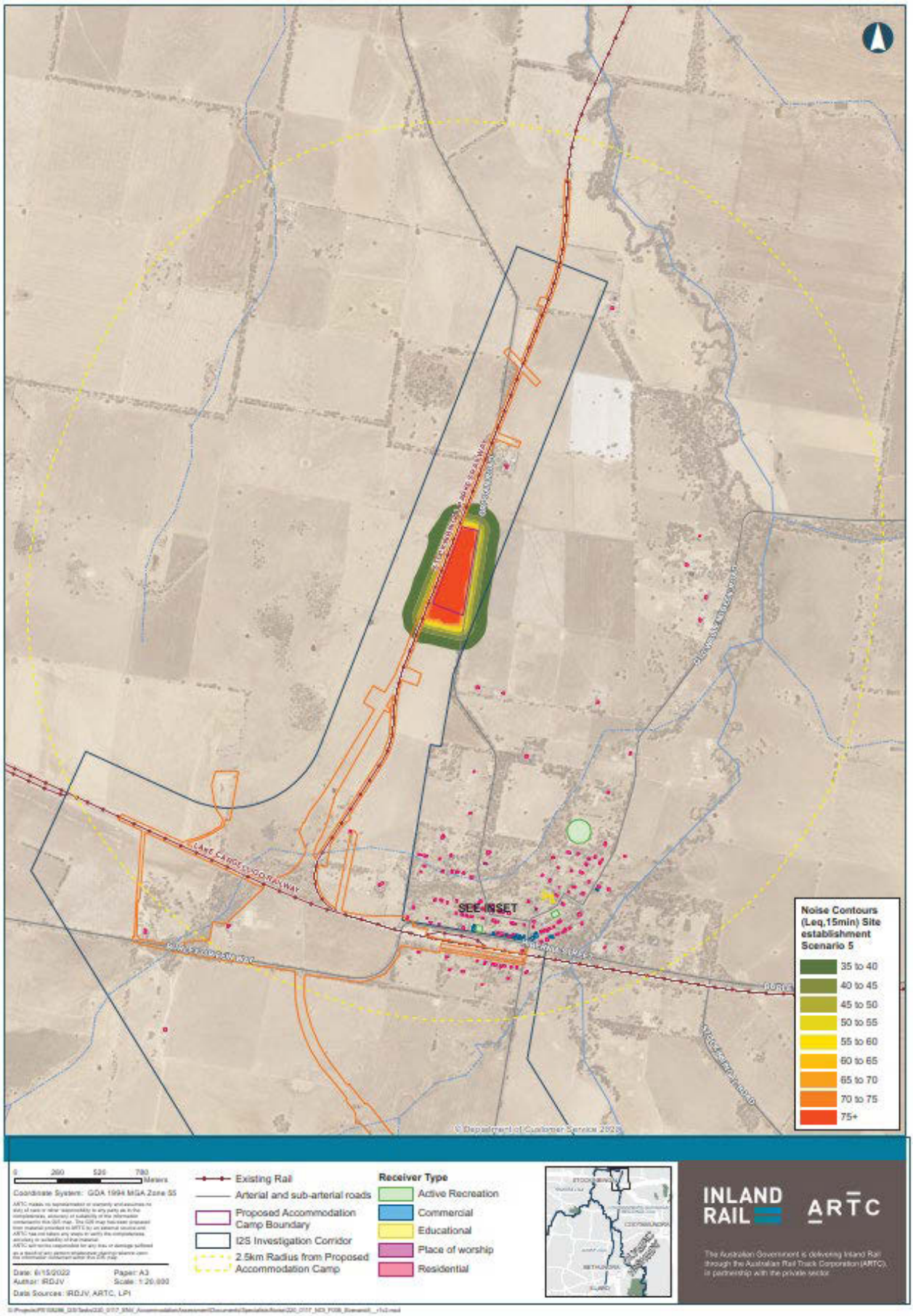


Figure 4.10 Noise contours – operation

4.5.5 Traffic noise

Two separate traffic noise scenarios have been considered for the traffic noise assessment:

4.5.5.1 Construction

Traffic associated with the accommodation camp construction. There would be typically 30 workers on site at its peak who would travel to the accommodation camp by private vehicle. Deliveries of plant and materials, as well as the accommodation units, would be made over the course of the construction program and therefore would not contribute a significant number of vehicle movements per day.

4.5.5.2 Operation

Traffic associated with 450 workers accessing the accommodation camp once operating, including:

- workers travelling between their home base and the accommodation camp: staggered arrival and departures (225 light vehicles) at commencement and completion of camp stay periods. Light vehicles are expected to remain at the accommodation camp car park for the duration of these periods
- workers travelling between the accommodation camp and construction sites: mini buses (assumed to be approximate 20 seater) using existing haul routes (up to 12 mini buses to deliver workers to construction sites and 12 mini buses to return workers to the accommodation camp). Mini buses are expected to remain at the construction work sites for the duration of the work shifts.

Total worst case additional traffic volume for Scenario 2 is 450 light vehicles and 24 heavy vehicles in a daytime 15-hour period and 24 heavy vehicles in a night-time 9-hour period. For this assessment the buses are considered heavy vehicles.

Scenario 1 will occur before major construction of the proposal begins and therefore traffic noise impacts will be minimal. Scenario 2 will occur once full construction has begun on the proposal and therefore will need to be considered in addition to the construction traffic volumes already considered in the EIS.

Receivers with the greatest traffic noise impact due to the establishment and operation of the accommodation camp are expected along Grogan Road, as beyond Grogan Road traffic will disperse. The traffic noise assessment has therefore considered these receivers only. It is assumed that each scenario will occur independently of the other.

Existing traffic volumes from the 2019 survey and previously assessed construction traffic volumes (from the EIS) along Grogan Road are presented in Table 4.15.

Table 4.15 Summary of traffic volumes – existing conditions survey (2019) and predicted construction traffic volumes

Location	Existing average daily traffic volume			Predicted traffic volumes including construction traffic (two-way)			
	Day	Night	% of heavy vehicles	Day		Night	
				Total	% of heavy vehicles	Total	% of heavy vehicles
Grogan Road	77	9	34%	430	70%	49	6%

The predicted road traffic noise levels due to the previously assessed construction traffic (from the EIS) and the additional accommodation camp traffic is presented in Table 4.16. The closest receiver along Grogan Road is approximately 15 m from the road therefore this will be assessed as the potential worst case.

Table 4.16 Construction road traffic noise assessment

Road	Distance to closest receiver (m)	RNP classification	RNP management levels		Predicted noise level of base traffic		Predicted noise level of base traffic with construction traffic		Increase in noise level generated by construction traffic		Comply with management level?	
			Day[1] $L_{eq,15hr}$ (dBA)	Night[1] $L_{eq,9hr}$ (dBA)	Day[1] $L_{eq,15hr}$ (dBA)	Night[1] $L_{eq,9hr}$ (dBA)	Day[1] $L_{eq,15hr}$ (dBA)	Night[1] $L_{eq,9hr}$ (dBA)	Day[1]	Night[1]	Day[1] $L_{eq,15hr}$ (dBA)	Night[1] $L_{eq,9hr}$ (dBA)
Grogan Road	15	Sub-arterial	60	55	46	39	56	48	10.2	8.8	Yes	Yes

(1) AM = 7am to 10pm, PM = 10pm to 7am

Following the addition of the workforce camp traffic to the EIS construction traffic, no road traffic noise impacts have been predicted.

Rostering is currently not determined, however with most workers being transported between the accommodation camp and work sites via mini buses, noise impacts from vehicle movements associated with work shift changes are not expected to be significant. Noise impacts from other vehicle movements within the accommodation camp (deliveries etc.) are expected to be sporadic and not contribute to the typical noise emissions from the operation of the camp.

4.5.6 Mitigation measures

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential impacts on noise and vibration. No additional mitigation measures are proposed.

4.6 Contamination

4.6.1 Overview

A Preliminary Site Investigation (PSI) was carried out to:

- assess likely past and present on-site activities for potential to have caused contamination
- document the likely associated potential chemicals of concern
- provide a preliminary assessment for potential contamination and provide recommendations for more detailed investigation and management measures (if required).

4.6.2 Methodology

The contamination assessment included:

- review of historic aerial photographs for the accommodation camp site to identify any past and present potentially contaminating activities
- consideration of physical site setting information including topography, geology, hydrology, hydrogeology and potential sensitive receivers on or in the vicinity of the accommodation camp site
- desktop review of publicly available data and data including:
  - review of regulatory databases relating to contamination and environmental protection licencing
  - an online search for registered groundwater bores within a 500 metre radius of the accommodation camp site
  - an online search of the Department of Defence unexploded ordnance (UXO) database
  - an online search of the EPA Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Investigation Program
  - review of publicly available acid sulfate soil and salinity maps.

No site inspection or intrusive soil assessment was carried out as part of the assessment.

4.6.3 Existing environment

4.6.3.1 Site location and land use

The accommodation camp site is located within Lot 1 DP1093937, that is situated along Grogan Road, Stockinbingal within the Cootamundra-Gundagai Regional Council LGA. A review of current aerial photographs indicates that the site consists of cleared grassed land with some stands of mature trees. The areas surrounding the site comprise grassed land with some stands of mature trees and agricultural land.

Grogan Road is located immediately to the east of the site and the Stockinbingal Parkes Railway is located immediately to the west of the site. The site is zoned RU1 Primary Production under the Cootamundra LEP.

4.6.3.2 Topography and surface water

The accommodation camp site is situated at between 291.7 to 296.3 metres Australian Height Datum (mAHD) in a north-south direction and 296mAHD in a west-east direction. The site is located in an area of flat to gently undulating topography.

Surface water was inferred to flow north and north-east towards the pasture to the east. Overland flow is likely to discharge into Bland Creek located approximately 1.6kms to the east of the accommodation camp site. Dudauman Creek is located approximately 1.5kms to the south of the site.

A farm dam is located immediately to the north boundary of the accommodation camp site and approximately six other unnamed water bodies (assumed farm dams) are present within a one km radius of the site.

4.6.3.3 Geology

Based on the 1:250,000 Cootamundra Geological Sheet SI/55-1, the majority of the accommodation camp site is underlain by Alluvium and Oakville material from the Ordovician Period (485.4 million years ago to 443.8 million years ago) which includes gravel, sand, silt and clay.

The local soils are described on the DPE eSPADE website (DPE, 2022) as belonging to a combination of the Oakville and Nurraburra Soil Landscapes. The soil features include deep red and brown chromosols on upper slopes and red and brown sodosols on lower slopes and depressions. A review of available regional soil mapping for the study area indicates that the soil landscapes present within the accommodation camp site may contain erosion risk.

A review of acid sulfate soil risk maps in the Australian Soil Resource Information System (ASRIS) (CSIRO, 2022) on 17 May 2022 indicated that soils underlying the accommodation camp site are mapped as having a low/very low probability of occurrence of acid sulfate soils. Nevertheless, it is possible that acid sulfate soils may be present surrounding the unnamed water body (assumed farm dam) located near the northern boundary of the site given that sulfides may be laid down in sediments over time.

The DPE Soil and Land Information System (DPE, 2022) contains data points identifying evidence of soil salinity where soils have been sampled previously. A review of the database undertaken on 23 May 2022 identified that no salting was evident at sample locations within the site or surrounding area.

4.6.3.4 Naturally acidic soils

A review of pH ranges from soil landscape reports accessed via eSPADE for the Oakville soil type within the accommodation camp site indicated the typical pH ranges from 5 to 5.5 at the soil surface and subsurface level. The acidity, where present, is unlikely to worsen significantly with time. Naturally acidic soils are not actual acid sulfate soils. These soils are acidic, however it is not due to reduced inorganic sulfur oxidation. They may be acidic as a result of natural acidity inherent in the parent rock, due to organic acids being present in the soil or thought agriculture practices (fertiliser use).

4.6.3.5 Hydrogeology

A review of the licensed borehole registers on the WaterNSW real time data website (WaterNSW, 2022) indicated that there is one registered groundwater bore approximately 963m south-east of the site. The bore (GPS: -34.487091, 147.875402) is registered for stock and domestic purposes with a depth of 105.1m.

4.6.3.6 Sensitive receivers

A sensitive receiver is ecological or human, which may be susceptible to deleterious impacts if exposed to contamination.

Environmental receivers include watercourses, farm dams, groundwater and agricultural land surrounding the site. The nearest creek is Dudauman Creek located approximately 1.5kms to the south of the site. The closest farm dam is located immediately adjacent to the north boundary of the site.

Human health receivers include:

- surrounding residents and agricultural workers
- users of groundwater (one registered groundwater bore located approximately 963 m south-east of the site)
- construction workers involved generally in the rail project
- workers residing in the accommodation camp.

4.6.4 Site history review

A review of background information pertaining to the accommodation camp site was undertaken to identify any known or likely environmental concerns. A summary of the review undertaken is provided in Table 4.17.

Table 4.17 Summary of background data

Search	Results
Historical and current aerial photographs	Historical aerial photographs taken in 1961, 1978, 1991, 2007, 2016, and the latest aerial photograph in 2019 were reviewed along with the current imagery available on Google Earth (2022). In 1961, the site is undeveloped with sparse vegetation. The surrounds include a water body (assumed farm dam) present immediately to the north of the site. Several residential building structures are present in surrounding areas to the north and east. Crops are visible in the aerial photograph, indicating the surrounding land is likely used for rural residential, farming and agricultural purposes, except for the vacant land in the western area with sparse vegetation. The Grogan Road is visible adjacent to the eastern site boundary. The site immediately to the west is a developed railway line. The former Stockinbingal Train Station is located approximately 2km to the south of the site. The site and surrounding land remain unchanged in subsequent aerial photographs. The colour photography available from 2007 show that the entire site is vegetated with grass cover. No indication of dumping was noted from the historical and latest aerial imagery on Google Earth (2022), noting that the clarity of the photographs is not sufficient to completely discount the occurrence of illegal dumping. Historical aerial photographs are provided in Appendix D.
EPA POEO Act public register and contaminated land record database	Online searches of the EPA POEO Act public register and the NSW EPA contaminated land record database on 18 May 2022 indicated that no licences or notices were recorded for the site or other properties within a one-km radius of the site. The search records are provided in Appendix D.
EPA PFAS investigation program	A search of the EPA PFAS Investigation Program on 23 May 2022 indicated that there are no PFAS sites within one km of the accommodation camp site.
UXO database review	A search of the Department of Defence Unexploded Ordnance database on 23 May 2022 indicated that the accommodation camp site does not have any areas where unexploded ordinance is known to occur.
Cattle dips	A search of the Department of Primary Industries Cattle Dip Site Locator on 23 May 2022 indicated that no cattle dips were identified within the site area.
Heritage search	A search of the NSW State Heritage Inventory online database on 18 May 2022 did not identify any heritage items within or near the accommodation camp site.

4.6.4.1 Previous environmental investigations

No relevant previous environmental investigation reports were identified in relation to the contamination status of the site.

4.6.4.2 Summary of site history

The accommodation camp site comprises a cleared vacant grass-covered lot with one mature tree in the centre of the site and a narrow strip of native remnant woodland along the eastern boundary along Grogan Road. A review of the historical aerial imagery (provided in Appendix D) indicates the accommodation camp site was cleared and has been vacant land since at least 1961. The surrounding area has primarily been used for farming and agricultural purposes since at least 1961. The surrounding infrastructure include railway line and major roadways which have been developed since at least 1961. The accommodation camp site and surrounding area remain generally unchanged in the latest aerial photograph. The former Stockinbingal Train Station is located approximately 2kms to the south of the accommodation camp site.

4.6.4.3 Preliminary Conceptual Site Model

Based on the desktop review of site setting and historical land use information, a preliminary conceptual site model (CSM) was prepared. This is summarised in Table 4.18.

Table 4.18 Preliminary Conceptual Site Model

Search	Results
Possible sources of impact	Possible sources of impact at the accommodation camp site include: • potential uncontrolled fill materials: potentially used historically to level the site or associated with the adjacent rail or road development • potential historical and recent illegal waste dumping, including potential asbestos containing material waste that may have been dumped on site (a site walkover was not conducted during this assessment) • pesticides and herbicides used historically and recently in the surrounding land.
Potentially impacted media	Soil • impacts from potentially contaminated fill, building debris or waste materials • surface soil impact from application of pesticide or herbicide use off-site via surface run-off. Groundwater • vertical migration of chemicals present into groundwater from soil impacts. This is considered unlikely given widespread soil contamination is not expected based on the historical land use at the accommodation camp site.
Potential contaminants of concern	Potential contaminants of concern at the accommodation camp site comprise: • petroleum compounds including total recoverable hydrocarbons (TRH) and benzene, toluene, ethylbenzene and xylene (BTEX compounds) • polycyclic aromatic hydrocarbons (PAHs) • heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) • organochlorine and organophosphate pesticides (OCPs/OPPs) • herbicides • polychlorinated biphenyls (PCBs) • phenols • asbestos.
Migration pathways	Potential migration pathways include: • vertical migration of contaminants in soil from infiltration of rainwater • run-off of surface contaminants in rainwater • airborne migration of contamination in dust or as fibres or vapour.
Potential exposure pathways	Potential exposure pathways include: • inhalation of dust, fibres or vapours by accommodation camp site users or nearby site users • ingestion or dermal contact with contaminated surface soils or near surface soils by open space site users or excavation/maintenance workers • ingestion or dermal contact with contaminated water downgradient of the accommodation camp site through the use of downgradient surface water bodies for agricultural use.
Potential sensitive receivers	Based on the site setting, sensitive receivers potentially include: • residents of nearby rural residential properties and agricultural workers • surface watercourses (farm dams) potentially receiving groundwater and surface runoff from the accommodation camp site • on-site and off-site construction or utility workers (those working within service pit trenches).

4.6.5 Potential impacts

4.6.5.1 Construction

Construction activities of the accommodation camp which have the potential to disturb the underlying soil will be limited to vehicle movement, topsoil stripping and utility works. The exposure of soils during construction of the accommodation camp would be temporary and short-term in duration. The potential risk associated with unexpected contamination finds (including potential uncontrolled filling) would be managed in accordance with an unexpected finds protocol. Given identified potential sources of contamination are discreet and attributed to surface sources, the migration of contamination to groundwater is considered low risk.

Other potential construction impacts include contamination associated with any leaks and accidental spills of construction plant and equipment. The requirement for an intrusive soil assessment to inform the proposed future land use is considered low. Soil sampling and analysis will be required to complete waste classification of any materials to be removed during construction in accordance with the EPA *Waste Classification Guidelines* (EPA, 2014) or applicable EPA resource recovery exemption.

4.6.5.2 Operation

During operation of the accommodation camp, storage and laydown areas would be used to store supplies, fuel, on-site sewage storage, plant and equipment and recovered waste materials. The potential impact resulting from storage and waste management activities is exposure of the surrounding soil and water environments to contamination from spills and leaks from plant, fuels and equipment during standard operations or incidents. With appropriate and relatively standard construction controls in place as part of the CEMP, the risks from these activities would be minimised.

4.6.6 Mitigation measures

Construction works will be undertaken in accordance with a soil and water management sub plan as part of the Construction Environment Management Plan (CEMP). The plan will define the processes, responsibilities and erosion and sediment control measures that will be implemented during construction, noting that a farm dam has been identified in close proximity to the accommodation camp.

The CEMP will document an unexpected finds protocol. The unexpected finds protocol will outline the activities to be undertaken in the event that previously undetected contamination is identified, which will include making the accommodation camp site safe, carrying out an assessment of the finds, and managing the finds based on the results of the assessment.

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential contamination impacts. No additional mitigation measures are proposed.

4.7 Social impact

4.7.1 Methodology

The social impact assessment (SIA) local and regional social locality were determined in line with the DPE's *Social Impact Assessment Guideline* (DPE, 2021). The approach used to determine the SIA local and regional social locality considers size and population of state suburbs (SSC) and local government areas (LGAs) surrounding the accommodation camp that are likely to experience potential impacts. The social locality has also been informed by the proposal local and regional social localities as discussed in the SIA of the EIS (refer to Chapter 17 (Social and economic) of the EIS).

The local and regional social localities are considered to be the local and regional areas expected to experience the most social change as a result of the accommodation camp. The local and regional social localities are shown in Figure 4.11.

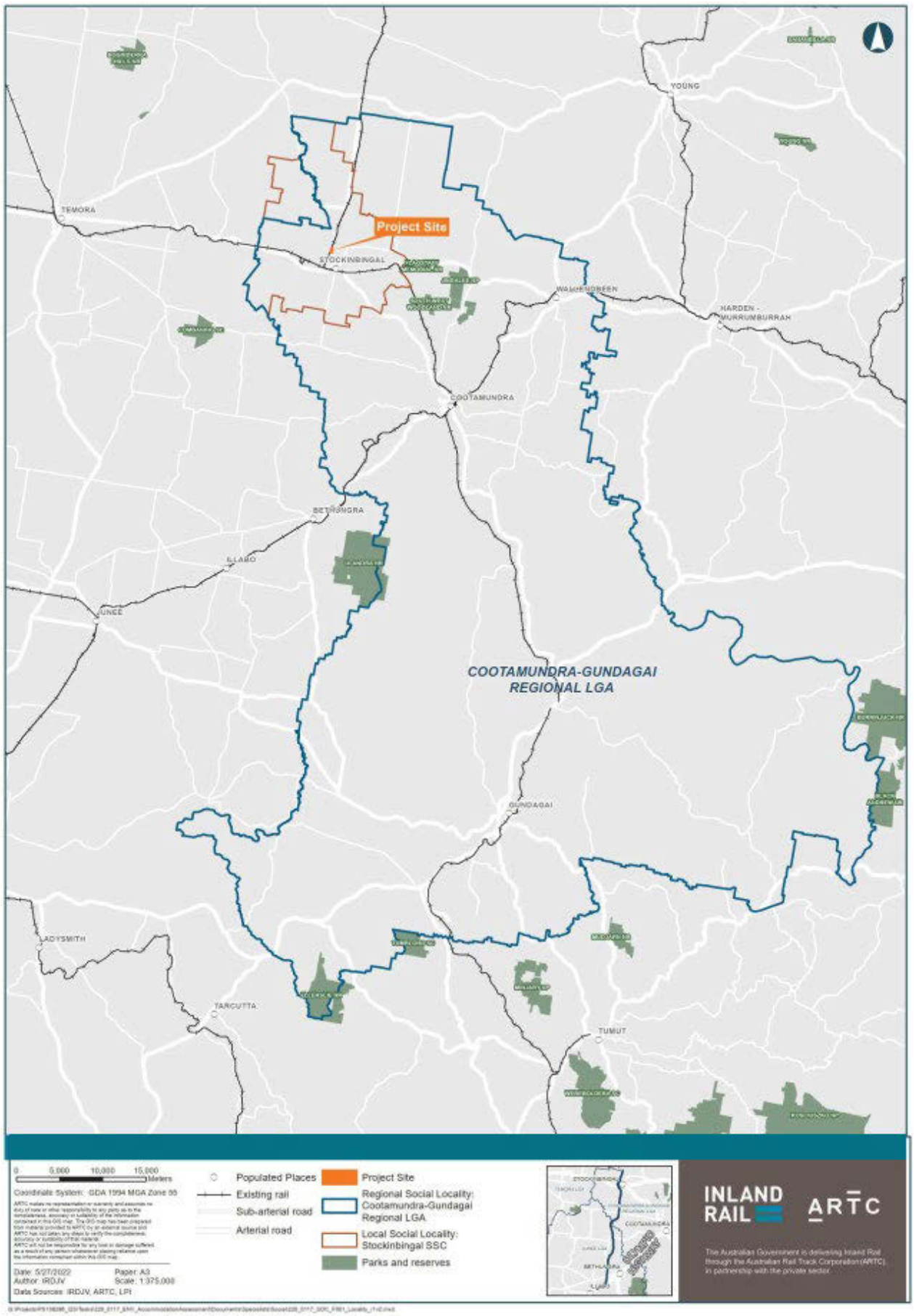


Figure 4.11 Local and regional social localities

4.7.1.1 Local social locality

The local social locality comprises of the Stockinbingal State Suburb (SSC). This SSC has been chosen to represent the local social locality due to the smaller and more localised nature of the geographic area and associated data set. This will help to determine a relevant detailed snapshot of the local population in Stockinbingal where the accommodation camp is proposed. This approach considers the impacts to landholders, residents and communities directly surrounding the accommodation camp.

4.7.1.2 Regional social locality

The regional social locality comprises of Cootamundra-Gundagai Regional LGA which has been used to determine the population most likely to experience secondary or flow-on impacts. Other key regional towns that are likely to service the proposal's construction workforce include Cootamundra and Wallendbeen. It is expected that Temora, in the adjacent LGA to the west, may also experience similar impacts as Cootamundra given the similar distance to the accommodation camp.

The regional social locality, alongside NSW more broadly, also serves as a point of statistical comparison for the local social locality.

4.7.2 Existing environment

4.7.2.1 Cootamundra-Gundagai Regional LGA

The Cootamundra–Gundagai Regional Council was formed out of the amalgamation of Cootamundra Shire Council and Gundagai Shire Council in 2016. The LGA covers 3,981km^2 varying from steep hills and forestry in the east, lush Murrumbidgee valleys in the south and productive croplands to the North West.

Cootamundra is the largest township and urban centre in the LGA, approximately 23kms from the accommodation camp site. There are smaller towns and villages including Gundagai, Brawlin, Coolac, Frampton, Muttama, Nangus, Stockinbingal and Tumblong. The LGA had a population of 11,300 in 2016 with no growth in 2020 (ABS, Estimated Resident Population 2019-2020). Table 4.19 provides an overview of the community within the LGA.

The LGA is traversed by the Murrumbidgee River and Hume Highway with the two main towns in the shire, Cootamundra and Gundagai, located halfway between Sydney and Melbourne. The Hume Highway, Olympic Highway and Melbourne to Sydney rail line play a crucial role in providing ease of connections to export markets.

The Cootamundra–Gundagai Regional Council's economy is primarily based on dryland cropping and grazing and horticultural products and cereal crops grown on the rich alluvial river flats. Other key industries in the LGA include freight and transport, education, health, and food and beverage manufacturing. Cootamundra–Gundagai Regional Council has acknowledged the significant ageing population and is also working towards developing the health care and social services sector.

4.7.2.2 Stockinbingal

Stockinbingal is a small township located on the Burley Griffin Way, 410kms south of Sydney and a short distance from the accommodation camp site. Established in 1886, it is primarily a farming community that produces wheat, canola, cereal crops, sheep, wool, fat lambs and cattle.

Today, Stockinbingal is characterised by village streets that lack formal kerb and guttering outside of the Hibernia and Martin Street precinct. As some roads were described to be unsealed, the area can regularly become dusty and present maintenance issues in wet conditions.

Housing types in the township include low-density and semi-rural residential development primarily located to the north of Hibernia Street/Burley Griffin Way. A small cluster of both active and vacant commercial buildings and community facilities is located on Hibernia Street. However, there is no active or defined town centre. Stockinbingal has maintained most of its Federation architecture and remains virtually untouched since the early 1900s. Its former commercial buildings remain intact as prime examples of the Australian vernacular style.

Annual events and activities in the Town include the Stockinbingal village fair in March, and the Ellwoods Hall Christmas Markets in November.

Table 4.19 provides an overview of the community within Stockinbingal.

4.7.2.3 Local and regional demographic overview

An overview of key local and regional demographic indicators is provided in Table 4.19. For a detailed description of the existing social environment refer to Section 6 of Technical Paper 11 (Social Impact Assessment) of the EIS.

Table 4.19 Local and regional demographic overview

	Local social locality (Stockinbingal SSC)	Regional social locality (Cootamundra-Gundagai Regional LGA)	NSW
Population	374	11,141	–
Families	101	2,966	–
Occupied private dwellings	201	5,340	–
Indigenous population	6 (1.6%)	513 (4.6)	2.9%
Median age	50	47	38
Average people per household	2.2	2.3	2.6
Median weekly household income	$722	$964	$1,486

Source: ABS, Census of Population and Housing, 2016

4.7.2.4 Social infrastructure and services

Stockinbingal features a range of social infrastructure to service the needs of the town. However, is likely that residents would travel to other regional towns such as Cootamundra, which is 20kms south-east of Stockinbingal, to access secondary education, health, retail and community services.

Social infrastructure in Stockinbingal is located within one to two kms of the accommodation camp and may experience direct impacts as a result of construction and operation. A list of facilities and services in Stockinbingal is provided in Table 4.20.

Local businesses include a bowls club, post office, tourist accommodation, a farm shop and a cafe.

A range of retail, food and beverage businesses and accommodation exists in Cootamundra.

Table 4.20 Social infrastructure and services in Stockinbingal

Category	Name	Location
Education	Stockinbingal Public School	Britannia Street
Religion	St James Anglican Church	Dudauman Street
Religion	St Joseph's Catholic Church	Grogan Road
Recreation	Stockinbingal Bowling Club	Hibernia Street
Recreation	Stockinbingal Recreation Ground	Obrien Street
Recreation	Stockinbingal Tennis Courts and Playground	Britannia Street
Memorial	Stockinbingal War Memorial	Britannia Street
Meeting Spaces	Elwood Hall	Martin Street
Police	Stockinbingal Police Station	Hoskins Street
Cemetery	Stockinbingal Cemetery	Grogan Road

4.7.2.5 Health services and hospitals

The regional study area is relatively well supplied with a range of health and medical facilities of varying sizes and capacities. All service communities feature a purpose-built health service with inpatient and emergency consultation capabilities. An overview of facilities and the services located in proximity to the project area is provided in Table 4.21.

Table 4.21 Hospitals and medical facilities within the regional study area

Facility	Capacity	Distance from Stockinbingal	Services
Temora Health Service	28 beds (5 are maternity)	33.7km/ 25 mins	Indigenous health, aged care, child protection counselling, child wellbeing coordinator, community care intake, critical care advisory, dental health, diabetes, domestic violence, drug and alcohol, lung health, maternity, mental health emergency consultation, mental health, nutrition and dietetics, occupational therapy, palliative care, patient flow unit and patient transport, physiotherapy, violence prevention and response support, women's health nurse team.
The Cootamundra Hospital	30 beds (3 are maternity)	21km/ 21 mins	Indigenous health services, aged care, Aunty Jeans program, care coordination, child protection counselling, child wellbeing coordinator, community care intake service, critical care advisory, diabetes, domestic violence, lung health, maternity, mental health emergency consultation, mental health, nutrition and dietetics, occupational therapy, palliative care, patient flow unit and patient transport, violence prevention and response support.
Young Hospital	32 beds (21 hospital care beds, 5 maternity beds and 6 day surgery chairs)	55.6km/ 39 mins	Indigenous Health Services, Aged Care Services, Aunty Jeans Program, Child, Protection Counselling Service (CPCS), Child Wellbeing Coordinator (CWC), Community Care Intake Service, Community Care Nursing Service, Critical Care Advisory Service (CCAS), Dental (Oral) Health Services, Diabetes Services, Domestic Violence, Drug and Alcohol Services, Lung (Respiratory) Health Service, Maternity and Parenting Services, Mental Health Emergency Consultation Service, Mental Health Services, Nutrition and Dietetics, Occupational Therapy, Palliative Care, Patient Flow Unit & Patient Transport Services, Patient Transport Services, Pharmacy Services, Physiotherapy Services, Violence Prevention and Response Support Services, Women's Health Nurse Team.

Facility	Capacity	Distance from Stockinbingal	Services
Specialist health care			
Victoria Street Surgery (Temora)	Drop in clinic	33.8km/ 24 mins	General Practice, podiatry.
Cootamundra Community Health Centre	Drop in clinic	21.5km/ 17 mins	Indigenous Health Services, Aged Care Services, Care Coordination Service, Child Protection Counselling Service (CPCS), Child Wellbeing Coordinator (CWC), Community Care Intake Service, Community Care Nursing Service, Dental (Oral), Health Services, Diabetes Services, Domestic Violence, Lung (Respiratory) Health Service, Mental Health Services, Nutrition and Dietetics, Occupational Therapy, Palliative Care, Violence Prevention and Response Support Services, Women's Health Nurse Team.
Temora Medical Complex	Drop in clinic	34.3km/ 24 mins	Home visits, minor surgery, travel vaccinations, family planning, health assessments, counselling, medical reports, nutrition advice, cardiograms, pregnancy care, treatment for sunspots, pap smears, chronic disease management, treatment for skin cancers, pilot medicals, onsite pathology.
Mercy Care Centre Young	Drop in clinic	56km/ 40 mins	Mercy Care Centre Young is a 26-bed health service providing a range of outpatient, community health and aged care services for the people of Young and surrounding regions.

4.7.2.6 Transport and access

Major highways in the vicinity of the accommodation camp are the Olympic Highway (A41) to the east and southeast and Goldfields Way (B85) to the west. Several local and private roads are also located near the accommodation camp. Traffic volumes in the local social locality area are generally considered low, with little congestion. The Olympic Highway and Burley Griffin Way account for the majority of traffic movements. Most local roads across the local social locality average less than 100 vehicle movements per day. General traffic volumes in the local study area are heavily influenced by the surrounding agricultural land uses and are subject to seasonal peaks during harvest time. Similarly, stock movements across the local study areas are commonplace and can result in delays or traffic hazards.

Several active rail lines traverse the regional and local social locality, including the Main South Line, the Lake Cargelligo Line and the Stockinbingal–Parkes line. These freight services connect the region to the rest of NSW and Victoria. There are no active passenger rail services or stations located in the local study area, as Illabo, Bethungra and Stockinbingal train stations are no longer in service, however there is a daily NSW TrainLink Regional coach service between Cootamundra and Temora.

4.7.3 Potential impacts

4.7.3.1 Construction

Impacts to amenity (including noise, visual and air quality impacts)

The estimated construction workforce for the accommodation camp is 30 personnel throughout the construction period, consisting of five supervision and services trades personnel and 25 construction workers. This is for preparation, groundworks and civil works. The majority of the components would be constructed off site and delivered on truck. Construction of the camp itself may disturb amenity and create nuisance (e.g. dust, noise).

As stated in the noise assessment in section 4.5, construction works for establishment of the accommodation camp would likely be carried out 7:00am – 6:00pm Monday to Friday and 8am – 1pm Saturdays, which corresponds to ICNG standard work hours.

During standard hours of construction, the following residential receivers will likely experience noise impacts:

- six receivers during clearing and prep works
- seven receivers during earthworks and drainage
- six receivers during pavement
- three receivers during the installation of structures
- twenty-eight receivers during decommissioning and removal of the accommodation camp.

No receivers are anticipated to be impacted during out of hours evening and night times or would be 'highly noise affected' at any time.

Overall, the construction of the accommodation camp is expected to have a medium impact on the amenity of surrounding sensitive receivers (refer to Table E-1 in Appendix E).

Road safety impacts due to construction traffic

The construction and establishment of the accommodation camp would be undertaken in approximately four months, with a peak on-site workforce of approximately 30. These workers would travel to and from the worksite by private vehicle. The traffic impact assessment memo states that this increase in light vehicles would have "very minimal impacts to the surrounding road network". In additional, material and machinery deliveries to and from the accommodation camp are also not anticipated to have any significant traffic impact.

The existing average daily traffic volume for Grogan Road is low, with approximately 86 vehicles using the road daily. An increase in heavy vehicles and construction traffic may lead to a perceived increased trip duration, increased safety risks and conflict with other machinery used by local residents/industries. While traffic impacts may be minor, the low level of existing traffic surrounding the project area may exasperate perceived impacts amongst residents and local road users.

The construction of the accommodation camp is expected to have a medium impact on road safety due to construction traffic (refer to Table E-1 in Appendix E)

Economic benefits for the broader community

There is potential for local businesses in the town to benefit from the construction of the accommodation camp economically, through potential workforce patronage.

The workforce personnel may access local services in the area including housing, food and beverage establishments and local services. Additional patronage could lead to some minor flow on benefits for local industries such as hospitality and tourism, and in turn provide additional opportunities for employees. However, given the small number of the camp construction workforce, it is likely that any economic benefits would be minor.

Other potential economic benefits associated with local business and supplier opportunities, as well as local direct employment, may lead to additional economic benefits. Local procurement and employment strategies should be established to adequately realise and enhance these benefits.

The construction of the accommodation camp is expected to have a medium impact on economic benefits for the broader community (refer to Table E-1 in Appendix E).

4.7.3.2 Operation

Less demand for and pressure on short term and long-term accommodation in the local and regional area

Up to 425 construction personnel would be required during construction of the proposal.

The Workforce Accommodation Study (IRDJV, 2021) identified that no more than 25% of available accommodation capacity should be used to house the proposal's workforce. This aims to ensure accommodation providers have sufficient capacity to accommodate other non-resident visitors such as tourists and seasonal agricultural workers, as well as ensuring a contingency housing supply in the event of a major event or disaster. During consultation, local councils noted that there are other regional projects in the area that require workforce accommodation, such as the Cootamundra Abattoir, and that this may place significant strain on the local accommodation provider's capacity and capability to service guests. The Workforce Accommodation Study concluded that there is currently insufficient supply in both the private rental and short-term accommodation market to satisfy this demand.

The accommodation camp is anticipated to house 100% of the proposal's construction workforce. This will likely ensure that local short-term and long-term accommodation is not strained by the proposal. This will in turn benefit local accommodation providers by ensuring consistent income from a range of consistent and one-off guests, as well as benefitting key industries in the region such as tourism, agriculture, and meat processing. This will prevent strains on the housing industry and unavailability of housing options for those who need it.

The operation of the accommodation camp is expected to have a high impact on less demand for and pressure on short term and long term accommodation in the local and regional area (refer to Table E-1 in Appendix E).

Workforce anti-social behaviour within local towns

Anti-social behaviour has the potential to increase crime and adversely influence community perceptions of safety (McAtamney & Morgan, 2009). Potential occurrences of anti-social behaviour may be more likely in the vicinity of town centres where night life (including pubs and hotels) is more prevalent, and in the case of the accommodation camp this could potentially impact Stockinbingal, Cootamundra or Temora.

Consultation undertaken for the EIS SIA in 2019 reported incidents of construction personnel from nearby and recent projects becoming intoxicated and 'causing trouble', which could raise concerns for the future construction workforce for the proposal. The accommodation camp would provide self-contained amenities including a mess hall and recreational facilities, which may limit the desire of workers to travel to local towns for these purposes. Anti-social behaviour within the accommodation camp may be further mitigated through the adequate provision of camp policies, regulations, and security provisions, such as daily breath testing and closed-circuit television (CCTV) cameras. These supervision and behavioural policies will likely be more effectively implemented in an accommodation camp setting.

The operation of the accommodation camp is expected to have a medium impact on workforce anti-social behaviour within local towns (refer to Table E-1 in Appendix E).

Social cohesion and safety concerns/perceptions associated with an influx of non-resident workforce to the community

It is anticipated that the construction workforce residing in the accommodation camp would utilise goods and services from Stockinbingal, Cootamundra or Temora, given their proximity to the camp. It is likely that this large influx of workers would be felt within the towns, particularly Stockinbingal with a relatively small population of 374 people, lower than the anticipated peak of the workforce (450). However, as outlined in section 3.2, the workforce numbers are forecast to reach their peak starting from approximately the third month and would last about six months of the planned 24 months construction duration of the proposal; after which these numbers will steadily decline to reach a plateau of approximately 100 workers for the remainder of the construction of the proposal.

The concentrated influx of a largely unknown, predominantly male, and 'out of town' workforce may create negative perceptions amongst the local community, and concerns regarding diminished safety and social cohesion.

The real and perceived impacts of this perception may include stress and diminished wellbeing amongst residents, which may compound with other feelings of stress triggered by the project. Impacts are more likely to be experienced by vulnerable groups such as women, elderly people and/or children. Additional temporary workforce for other industries may further contribute to this.

The influx of temporary workforce in Stockinbingal and Temora was noted during 2021 consultation as an area of concern and potential threat to social cohesion and impacts on quiet rural lifestyle.

The operation of the accommodation camp is expected to have a medium impact on social cohesion and safety concerns/perceptions associated with an influx of the non-resident workforce to the community (refer to Table E-1 in Appendix E).

Impacts to amenity, sense of place and privacy

The camp may impact neighbouring residents' sense of place and privacy, due to amenity impacts such as noise, light and visual obstruction. Regarding potential noise impacts, the noise impact assessment (refer to section 4.4) states:

- the camp, including air conditioning (AC) units, are expected to operate at all hours. This will include activities in recreation areas
- it is proposed that each room will have its own AC unit, resulting in a total of 450 AC units
- no residential receivers will be affected by noise exceeding NMLs. There are sensitive receivers near the accommodation camp that will be affected by noise throughout construction of the camp as outlined in section 4.5.3
- noise due to additional traffic movements will comply with NMLs.

It is expected that there will not be significant air quality impacts from the camp due to the nature of activities and absence of construction.

There will be noise impacts affecting residents' amenity, that would be likely to affect the character of the place, particularly at times when the camp is fully occupied. A complaints system should be put in place to manage any community feedback, as mentioned in the SIA.

The operation of the accommodation camp is expected to have a medium impact on the amenity, sense of place and privacy of nearby sensitive receivers (refer to Table E-1 in Appendix E).

Road safety impacts due to increased workforce traffic movements

As stated in the traffic, transport and access assessment (refer to section 4.4), the volume of vehicles in use would change from 80 private cars (light vehicles) for each section of the proposal to 24 buses (heavy vehicles) across the proposal with the introduction of the accommodation camp, however the patterns of use will remain the same. However, the traffic, transport and access assessment illustrates that the volumes of vehicles on each road will be impacted by the use of the accommodation camp instead of workers being distributed across different local towns:

- the accommodation camp is bounded by the Stockinbingal Parkes railway on the west and Grogan Road on the east. Access to the site is provided at two locations, at the southern and northern end of the site, onto Grogan Road. The proposed camp car park would be sized to accommodate 450 private light vehicles and 24 buses which would transport workers to the construction sites
- workers would stay at the camp when not on a work shift, and depart on a daily basis for their work shifts at the construction sites
- when not on a work shift, workers may leave and return to the site for personal travel by private vehicle on an ad hoc basis. Depending on the timing and distribution of these trips there may be short-term congestion at nearby intersections

- the closest construction site access is approximately 50 m north of the camp. The other ten construction site access points are south of the accommodation camp. The workforce would be transported between the construction sites and accommodation camp via buses rather than private cars, to minimise potential traffic impacts on local roads. Buses are expected to remain at the worksites for the duration of the work shifts. The use of buses will result in generally fewer vehicles on the roads as opposed to private car use.

Workforce vehicles, including buses, are anticipated to result in increased traffic due to the existing low levels of traffic that currently use the roads. While the overall level of service of local roads is likely to remain acceptable, there will possibly be an increase in trip duration, potential conflict with other vehicles/machinery used on the road particularly by agricultural industry), impatience and increase in safety risks. Mitigation measures outlined in the traffic and transport assessment, including the preparation of a traffic management plan, will help to address these impacts. The EIS SIA notes concerns in relation to worker fatigue leading to road safety issues for the public, and queries on how shift work would be managed with recommendation to bus workers to the site to mitigate these risks. The EIS SIA suggests that the principal construction contractor should ensure workforce compliance with commuting and driver fatigue measures.

The operation of the accommodation camp is expected to have a medium impact on road safety impacts due to increased workforce traffic movements (refer to Table E-1 in Appendix E).

Economic benefits for local businesses in the community

There is potential for local businesses in the town to benefit from the project economically through workforce patronage, and supplying the camp with goods and services, particularly during Monday to Friday. This could lead to flow on benefits for local industries such as hospitality and tourism, and in turn provide additional opportunities for employees. However, it could be unlikely that the workforce will frequently travel to local towns for goods and services, as the camp would be considered self-sufficient, with food and recreational services provided.

The operation of the accommodation camp is expected to have a medium impact on economic benefits for local businesses in the community (refer to Table E-1 in Appendix E).

Increased demand on local social and health services, and potential impacts on capacity

A major influx of workers, concentrated to the same accommodation camp (i.e., not spread out between camps) may cause stress on local health and social services, such as medical facilities. The camp will be operational for approximately 24 months, with a maximum of 450 workers staying at the camp at one time. Given existing pressures on local health services in the social locality, this may impact the ability of workers and local residents to access services, by increasing wait times and impacting the overall capacity of services. This may be more significant for more vulnerable community members including older people or those with health conditions. Consultation identified that there may be more capacity of health care in Cootamundra. This could be confirmed by additional consultation. If verified, workers could be encouraged to access Cootamundra-based services if possible.

The operation of the accommodation camp is expected to have a medium impact on increased demand on local social and health services (refer to Table E-1 in Appendix E).

4.7.4 Mitigation measures

It is recommended that general mitigation measures to manage social impacts outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are implemented during the construction and operation of the accommodation camp.

Additional mitigation measures recommended for the construction and operation of the accommodation camp are outlined in Chapter 5.

4.8 Flooding, hydrology and water quality

4.8.1 Methodology

The basis of the assessment approach, including the relevant legislation requirements and performance criteria, are described in Technical Report 4 — Flooding and Hydrology assessment and Technical Report 5 — Surface Water Quality Assessment of the EIS. The accommodation camp is not located on land subject to regional flooding, therefore the assessment included the following:

- identification of local stormwater networks and infrastructure
- a short description of flooding and local stormwater and water quality at the accommodation camp site for existing and proposed conditions
- a qualitative assessment of potential impacts of changes at the site, such as an increase in hardstand areas to changes in local drainage conditions and stormwater runoff quality
- the development of additional mitigation and performance measures. Stormwater management will involve temporary works and be developed in accordance with Managing Urban Stormwater: Soils and construction – Volume 1 (the 'Blue Book') (Landcom, 2004).

The following assumptions have been made for the assessment:

- no flood modelling has been required but existing flood model results are suitable to inform this assessment
- no stormwater modelling has been undertaken.

4.8.2 Existing environment

4.8.2.1 Hydrology

The accommodation camp is located in the Lachlan River catchment. The nearest watercourse is Dudauman Creek which is located about 1.2kms to the south. Dudauman Creek joins Bland Creek which is located about 1.8kms to the east of the camp. Bland Creek then flows northwards.

The accommodation camp site slopes from the south to the north. The existing Stockinbingal to Parkes rail line has a higher elevation on the west but Grogan Road to the east is generally at a lower elevation than the accommodation camp site. The topographic data indicates there is a minor overland flow path adjacent to the road that conveys local runoff towards the farm dam to the north of the accommodation camp site. Waterways in the vicinity of the accommodation camp site and the topography of the site are shown in Figure 4.12.

4.8.2.2 Flooding

The flooding within the accommodation camp site is minor due to the distance to Dudauman Creek and Bland Creek and therefore the site is not subject to flooding from a waterway.

The flood modelling indicates the accommodation camp site is subject to shallow overland flooding with depths averaging 30mm during the 1% AEP flood event. A few isolated areas with flood depths up to 250mm are predicted to occur along the eastern edge of the accommodation camp site immediately adjacent to the road, but these areas are less than 5m in width. For the 10% AEP flood event, flood depths of 20mm are predicted, with flood depths up to 205mm predicted in the overland flow path in the east of the accommodation camp site.

During the 0.2 exceedances per year (EY) flood event (or 18.13% AEP), the accommodation camp site is largely free of any overland flow, with only a few minor locations predicted to experience flood depths up to 12mm.

The farm dam just north of the proposed site appears to be filled by overland flows from the accommodation camp site and then it overflows to the west and continues north along the edge of the rail corridor.

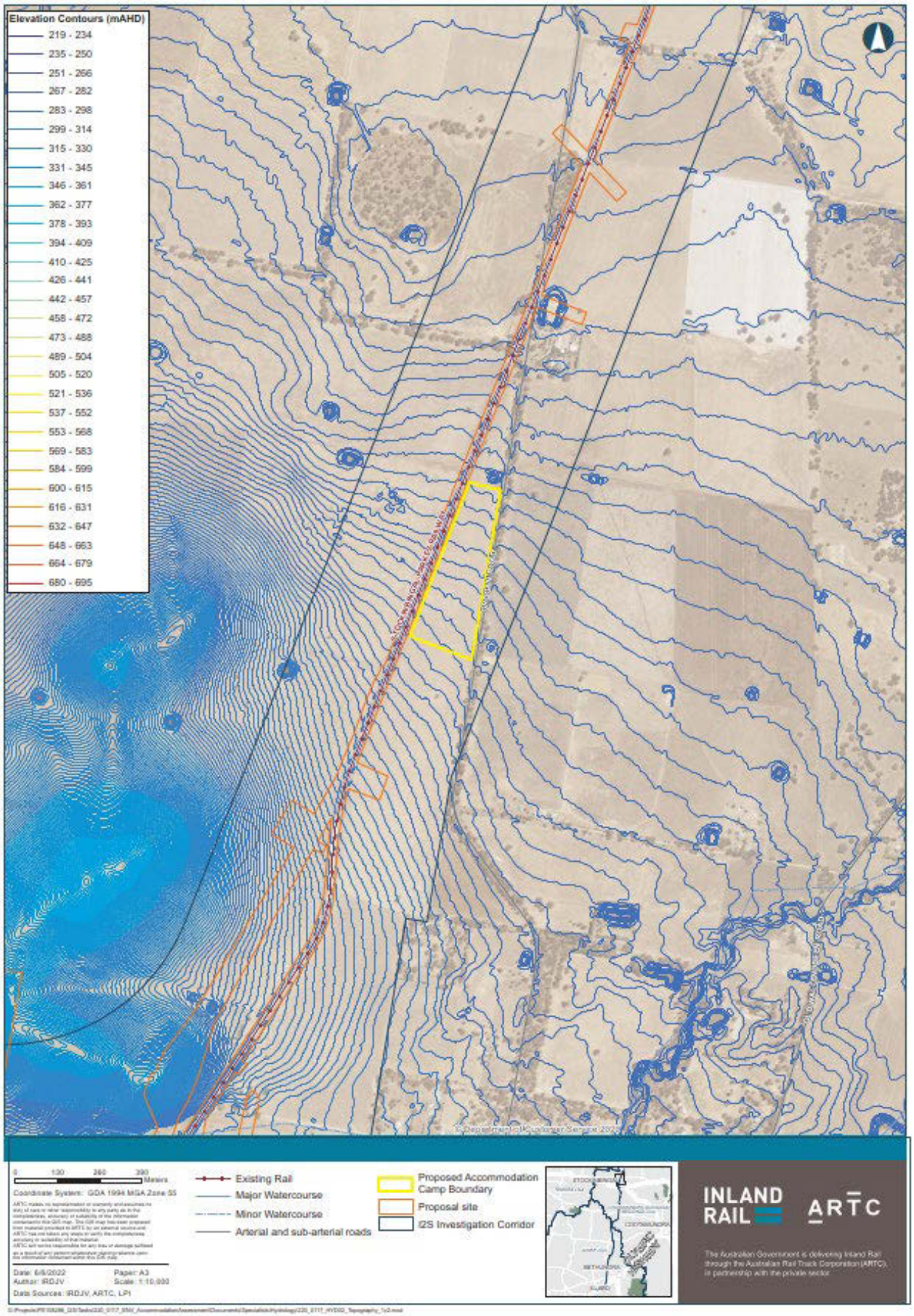


Figure 4.12 Topography

Flood depths during the 0.2EY, 1% AEP and 10% AEP flood events and duration of the 10% AEP flood event are shown in Figure 1 to Figure 4 in Appendix F.

4.8.2.3 Stormwater

There is currently no known stormwater drainage under Grogan Road running along the eastern border of the accommodation camp site and therefore it is anticipated that flows from the accommodation camp site are likely to remain with the site and not interact with overland flows to the east.

4.8.2.4 Water quality

The water quality of the broader Lachlan catchment is varied, with good to fair values for turbidity, salinity and pH and poor values for nutrients. Sources of pollution, particularly nutrient pollution in the catchment are diffuse, but given the land uses in the area and at the accommodation camp site, agricultural activities are likely to be the largest pollutant source. Common pollutants from agricultural land include sediments from disturbed land, nitrogen and phosphorus from use of pesticides and herbicides for weed control and pathogens and bacteria from animal activity.

There is no specific water quality data available for Bland Creek or Dudauman Creek.

4.8.3 Potential impacts

4.8.3.1 Construction

Flooding

As presented in Appendix F, the accommodation camp site is largely flood free and only subject to local overland flows with limited areas of the site affected. The impacts to flooding will therefore not be significant and can be managed through the design of the accommodation camp.

Potential impacts however, from the construction of the accommodation camp include potential displacement or redistribution of overland flows and therefore changes to the timing and duration of overland flows reaching the farm dam just north of the accommodation camp.

Water quality

Potential impacts from the construction of the accommodation camp include:

- increased runoff of sediment due to scour or sediment mobilisation from top soil disturbance for roads during construction causing sedimentation and turbidity
- increased volume or velocity of runoff from increase in impervious surfaces potentially causing scour
- increased runoff from impervious areas which may contain sediment, traces of fuel, dissolved metals, and other contaminants used during operation activities
- impacts on water quality from release of nutrients or contaminants present in soils on the accommodation camp site
- impacts on water quality from chemicals or oils as a result of any accidental spills or leaks
- impacts on water quality from release of gross pollutants and litter to watercourses
- runoff could include increased levels of nutrients and harmful chemicals, which could affect human health through direct contact.

Potential impacts on water quality would be minimised with adequate implementation of standard water quality mitigation measures and erosion and sedimentation management measures during construction and operation of the accommodation camp.

4.8.3.2 Operation

Flooding

As presented in Figures 3, 4, 5 and 6 in Appendix F, the accommodation camp site is largely flood free and only subject to local overland flows with limited areas of the site affected.

Potential impacts include displacement or redistribution of overland flows and therefore changes to the timing and duration of overland flows reaching the farm dam just north of the accommodation camp.

The impacts to flooding will not be significant and can be managed through the design of the accommodation camp.

Local stormwater drainage

The proposed increase in impervious areas such as the car park and buildings will impact local stormwater runoff across the accommodation camp site. The potential impacts include increased runoff due to the increase in impervious areas such as the proposed car park and buildings.

The increase has the potential to impact the quantity of flows that reach the farm dam just north of the accommodation camp site. Appropriate water capture, reuse, recycle and management measures will be incorporated in the design of the accommodation camp to minimise any potential increase.

Water quality

Potential impacts on water quality from the operation of the accommodation camp are similar to impacts and controls outlined for the construction stage (refer to section 4.8.3.1).

4.8.4 Mitigation measures

It is recommended that general mitigation measures to manage flooding, hydrology and water quality impacts outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are implemented during the construction and operation of the accommodation camp.

Additional mitigation measures recommended for the construction and operation of the accommodation camp are outlined in Chapter 5.

4.9 Landscape character and visual impact

4.9.1 Methodology

A high level desktop qualitative assessment was carried out to assess the potential impacts on landscape character and visual amenity, considering the low scale of potential impacts and the temporary nature of the establishment and operation of the accommodation camp.

4.9.2 Existing environment

The nearest town to the accommodation camp site is Stockinbingal. The landscape character of this community has historically been rail-related since the late 1800s with development within these communities being low scale and not an intrusive element in the region's landscape character.

Stockinbingal represents the only area of the proposal with an urbanised (village) character. It is a railway village that was settled in 1885. Stockinbingal had a population of 374 in the 2016 census. There are some elements of non-Aboriginal heritage within the town of Stockinbingal, and the village character largely reflects its Federation-era development. Its former commercial buildings remain intact as prime examples of the Australian vernacular style (refer to section 4.3.3).

The accommodation camp site and the broader surrounding area is predominantly comprised of rural land and rural communities of various sizes in the broader landscape. The landscape character of the accommodation camp site consists primarily of substantially cleared agricultural land with scattered isolated patches of native vegetation, in an undulating topography. The landscape also includes scattered residences and farm buildings (refer to Figure 4.13 for an aerial view of the site an immediate surroundings).

The site comprises disturbed, exotic grassland, which is used for pasture and cropping with a single scattered tree in the centre of the site with biodiversity value, and native woodland in the road reserve which borders the eastern boundary of the site and overlaps with the site boundary to a small extent.

4.9.3 Potential impacts

4.9.3.1 Construction

During the construction of the accommodation camp, there would be discernible changes in the landscape character and existing views due to construction activities and the presence of plant and equipment on agricultural land consisting mostly of grassland, and construction traffic using the local road network.

Potential impacts on landscape character and visual amenity are expected to be moderate considering the nearest residential properties along Grogan Road and Racecourse Lane are located about 500m away (at Property 1 and Property 2 in Figure 4.13) and impacts would be temporary in nature for the duration of construction. The existing native woodland along the eastern boundary of the site would also filter views of the accommodation camp from nearby residences and road users traveling along Grogan Road and other local roads nearby.

4.9.3.2 Operation

Once the construction activities are completed, the operation of the accommodation camp would have potential impacts on the landscape character and visual amenity of the local area through the introduction of built (temporary) infrastructure, increased vehicle movements (within and around the site) and increased lighting.

The accommodation camp would potentially be visible from the nearest residences and road users travelling along Grogan Road and other local roads nearby (refer to Figure 4.13).

The accommodation camp will include night lighting. Lighting would be designed in accordance with relevant guidelines, including Australian Standard (AS) 4282-2019 Control of the obtrusive effects of outdoor lighting (Standards Australia, 2019), to minimise visual impacts and is not expected to impact sensitive receivers at the nearest residences located along Grogan Road and Racecourse Lane (refer to Property 1 and Property 2 in Figure 4.13).

The accommodation camp is a temporary facility, and the site would be rehabilitated and returned to its previous land use following the completion of the proposal. Site rehabilitation would be carried out in accordance with the rehabilitation strategy (refer to section 3.7). The impacts on landscape character and visual amenity would be temporary, with no major change to the overall landscape character predicted.

4.9.4 Mitigation measures

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential impacts on landscape character and visual amenity. No additional mitigation measures are proposed.

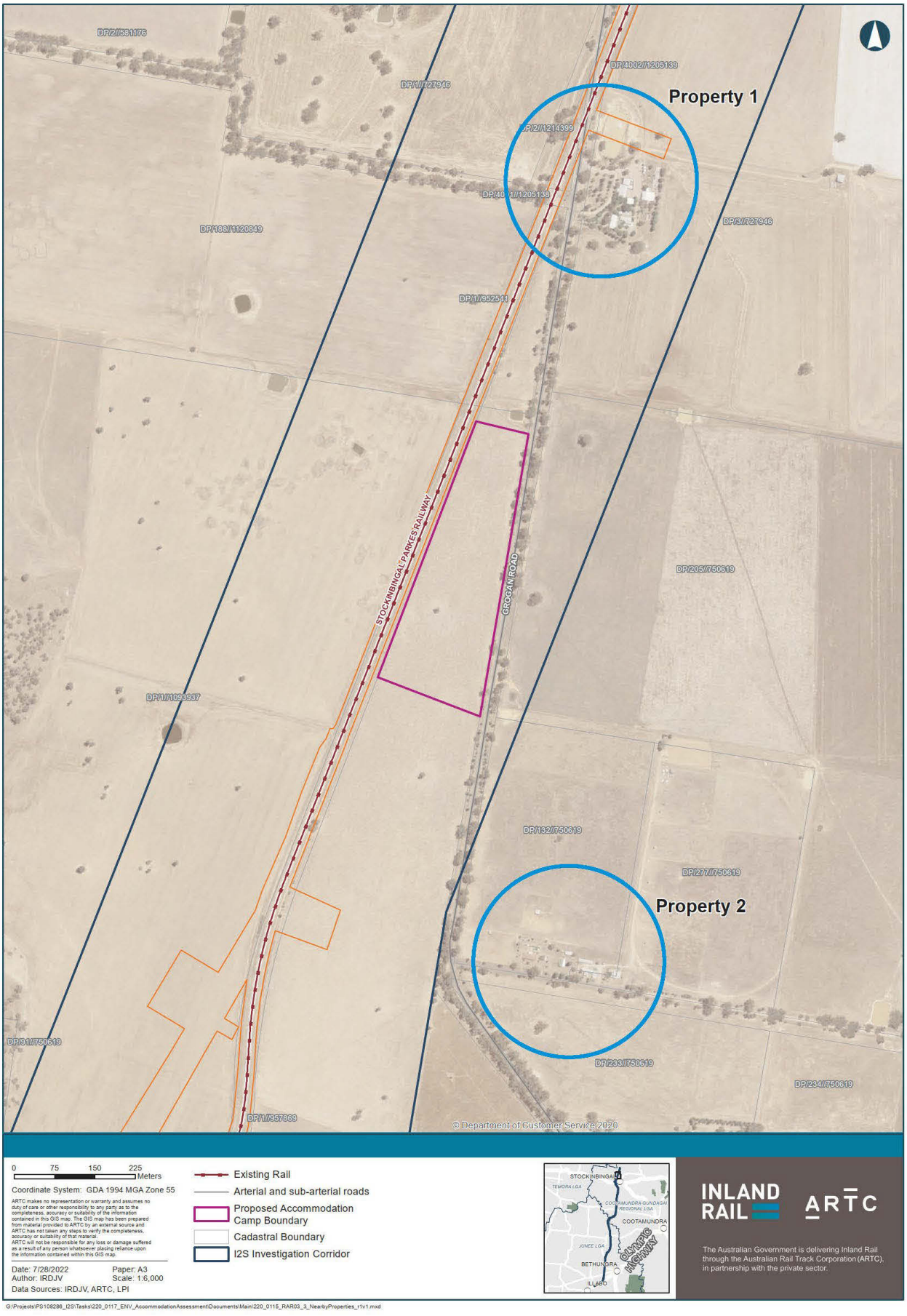


Figure 4.13 An aerial view of the accommodation camp site and immediate surroundings

4.10 Land use and property

4.10.1 Methodology

A high level desktop qualitative assessment was carried out to assess the potential impacts on land use and property, considering the low scale of potential impacts and the temporary nature of the establishment and operation of the accommodation camp.

4.10.2 Existing environment

The accommodation camp site is freehold land used for pasture and cropping.

4.10.3 Potential impacts

Construction works and associated land requirements for the accommodation camp would have the following potential impacts:

- temporary lease of private land for the establishment of the accommodation camp, which is currently classified as 'grazing and cropping' land
- traffic impacts and road safety risks for local transport as a result of an increase in construction traffic volumes on local roads and associated intersections, specifically Grogan Road.

The potential impacts on land use are expected to be minor, considering the current land use of the accommodation camp site (cropping and grazing) and the temporary nature of construction activities and camp operation.

4.10.4 Mitigation measures

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential impacts on land use and property. No additional mitigation measures are proposed.

4.11 Air quality

4.11.1 Overview

Potential air quality impacts from the construction and operation of the proposal are discussed in Chapter 24 (Air quality) of the EIS. The assessment has also identified potential sensitive receivers along the proposal route and outlined project specific mitigation and management measures.

Potential air quality impacts from the proposal have been avoided by locating the alignment to avoid being close to residential receivers where practicable and minimising the extent of earthworks (a primary source of dust emissions) through avoiding areas of steep topography and minimising cuts and embankments. No specific issues relating to air quality were raised during stakeholder and community consultation.

No further screening level assessment was undertaken with consideration of the construction and operation of the accommodation camp; therefore, the air quality assessment of the camp consists of a desktop qualitative assessment only, based on the approach and findings adopted in Chapter 24 (Air quality) of the EIS for the broader proposal.

4.11.2 Existing environment

4.11.2.1 Ambient air quality

The main industrial and non-industrial air emission sources contributing to air quality in the broader area are:

- traffic using the local road networks
- railway operations on the existing rail line adjoining the site at its western side
- dust from paved and unpaved roads
- nearby agricultural activities.

More details on the ambient air quality in the broader proposal area can be found in Chapter 24 (Air quality) of the EIS.

4.11.2.2 Sensitive receivers

No sensitive receivers are located within 100 m of the accommodation camp site.

4.11.3 Potential impacts

The key potential impacts on air quality during construction and operation of the accommodation camp are:

- the generation of dust from:
  - construction works and the movement of equipment and machinery
  - demobilising site compounds and facilities
  - removing all materials, waste and redundant structures from the works sites
  - removing of temporary fencing
  - establishment of permanent fencing
  - decommissioning of site access roads that are no longer required
- the generation of particulate matter from stockpiles and exposed surfaces under certain meteorological conditions, for example, during dry and high winds.

During operation, air quality impacts from the use of the accommodation camp are expected to be minor.

4.11.4 Mitigation measures

The existing mitigation measures outlined in the EIS (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS) are considered to be adequate to manage potential impacts on air quality. No additional mitigation measures are proposed.

4.12 Waste management

4.12.1 Overview

A waste management assessment was carried out for the proposal (refer to Chapter 21 (Waste) of the EIS).

A high level desktop qualitative assessment was carried out for the accommodation camp considering the low scale of potential impacts on waste management in the area and the temporary nature of the establishment and operation of the accommodation camp.

4.12.2 Potential impacts

Waste and spoil generated during the construction and operation of the accommodation camp would be stored temporarily within the camp site. The exact volumes and location of waste storage would be confirmed by the construction contractor(s) during detailed design.

4.12.2.1 Construction

The construction of the accommodation camp would generate a range of material streams, including:

- spoil comprising virgin excavated natural material or excavated natural material, however this material would be reused/reinstated onsite where appropriate after demolition of the accommodation site
- potentially contaminated soils (including asbestos-containing materials)
- waste metal/timber posts from fencing.

4.12.2.2 Operation

During operation, the accommodation camp would generate a range of waste streams, including food and organic waste, wastewater, waste paper and cardboard, waste containers (plastics, glass and metals) and other domestic waste, as summarised in Table 4.22.

Wastewater would be removed offsite to a licenced wastewater treatment facility. Waste volume estimates would be confirmed during detailed design and construction planning and would be incorporated into the construction waste management plan, which would form part of the CEMP.

Inappropriate management of waste could result in a range of impacts on air quality, water quality and soils.

Table 4.22 Waste classification during operation

Likely waste streams	Likely waste classification
Food and other organic waste	General solid waste (putrescible)
Wastewater	Liquid waste
Waste paper and cardboard	General solid waste (non-putrescible)
Waste containers—plastics, glass, metals	General solid waste (non-putrescible)
Other domestic waste	General solid waste (non-putrescible)

4.12.3 Mitigation measures

Mitigation measures for the proposal are presented in the Chapter 27 (Approach to environmental management and mitigation) of the EIS and would apply to the accommodation camp. Additional measures specific to the accommodation camp are included in Chapter 5.

4.13 Hazard and risk

4.13.1 Potential impacts

4.13.1.1 Construction

Health and safety

During the construction of the accommodation camp, the following health and safety related risks could occur, if inadequately managed:

- storage and handling of dangerous goods and hazardous materials, which could cause leaks and spills, with resultant contamination and health impacts
- potential rupture of underground utilities during excavation or collision of plant and equipment with aboveground services
- public and worker health and safety risks during construction
- impacts to emergency vehicle movements from disruption of traffic and access.

Fire risk

The accommodation camp site is not located on bushfire prone land. The closest bushfire prone land is located at approximately 700m northwest of the site with a Vegetation Category 2 bushfire risk rating. With the implementation of the mitigation measures outlined in section 4.13.2, potential fire risks would be minimised.

Physical hazards

Temporary hoardings, barriers, traffic management and signage could pose a physical hazard to construction workers and visitors at the construction site. These hazards would be removed when no longer required.

4.13.1.2 Operation

Risks and hazards outlined in the construction phase are similar to the ones which could potentially occur during the accommodation camp operation.

In addition, the use of potential ignition sources and fuel sources during operation could increase the risk of fire to the accommodation premises.

Emergency response

An emergency response plan would be prepared and implemented as part of the CEMP. The plan would include measures, processes and responsibilities to minimise the potential impacts of construction activities on bushfire risk as far as practicable. It would also outline measures to manage emergency responses during construction.

The contractor would also develop appropriate processes and measures to manage potential increased demand on health and emergency services.

In addition, the contractor would be required to provide personnel to handle minor injuries and other health issues.

4.13.2 Mitigation measures

Mitigation measures for the proposal are presented in the Chapter 27 (Approach to environmental management and mitigation) of the EIS and would apply to the accommodation camp. Additional measures that would apply to the accommodation camp are included in Chapter 5.

4.14 Cumulative impacts

The accommodation camp would be operational when the proposal's construction activities are due to commence, therefore there may be an increase in local traffic and noise and air emissions from vehicles in the broader area of the Stockinbingal section of the proposal due to the workforce movement from and to the camp, however, cumulative impacts are not expected to be significant.

The mitigation measures identified in Chapter 27 (Approach to environmental management and mitigation) of the EIS are considered appropriate and adequate to address any potential residual cumulative impacts for these issues.

5 Specific mitigation measures

Construction and use of the camp would be subject to the range of mitigation measures provided for the proposal (refer to Chapter 27 (Approach to environmental management and mitigation) of the EIS). In addition, a number of supplementary measures are proposed to address potential impacts of the accommodation camp specifically, as listed in Table 5.1.

Table 5.1 Accommodation camp – specific mitigation measures

Ref	Issue	Mitigation measure
Biodiversity		
ABD-1	Vegetation clearance management	The proposed access tracks in the northeast and southeast of the accommodation camp site would be located within existing disturbed areas/exotic grassland areas where possible. Surveys would be conducted within PCT 76 (Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions) during detailed design to ensure the siting of the access tracks avoids impacts on PCT 76 as far as possible. If impact on PCT 76 is unavoidable, tree clearing would be minimised by locating access tracks in vegetation gaps visible within aerial imagery and the existing mapping and refined upon site inspection, targeting areas of previous disturbance/exotic grassland to minimise potential impacts to derived native grassland.
ABD-2	Pre-construction surveys	Pre-construction surveys within PCT 76 (Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions) in the east of the accommodation camp site would be undertaken by an ecologist to check for the presence of nesting threatened species. In particular, to check for Superb Parrot (*Polytelis swainsonii*) breeding as this species has been previously recorded within the site. If nesting species are recorded, construction would aim to avoid commencement of work during breeding season (September to January) to limit potential disturbance and abandonment of nests. If a nest is identified, a buffer distance of 100 m radius around the tree should be used to limit construction impacts during the breeding season.
ABD-3	Exclusion fencing	Exclusion fencing would be put in place around the vegetation along the eastern edge of the accommodation camp site and around the paddock tree in the centre of the site to prevent disturbance and access to retained areas of vegetation during construction and operation of the accommodation camp.
ABD-4	Light disturbance	Lighting would be designed in accordance with best practice design to limit impacts on wildlife and minimise light spill to woodland area. This would include the following measures: • Orient lighting away from native vegetation patches where possible and focus light on intended area (avoid light spill into vegetated areas) • Where light impacts to vegetation cannot be avoided, use lowest intensity lighting appropriate for the task or consider modifying spectral composition (i.e., reduced or filtered light of blue, violet or ultraviolet wavelengths) to reduce impact.
Traffic, transport, and access		
AT-1	Road safety	As part of the traffic, transport and access management plan, the arrival and departure of the workforce to the accommodation camp would be managed to minimise peaks in congestion and reduce impacts on the road network, particularly at nearby intersections.
AT-2	Road safety	The 80 km/hr speed limit associated with the level crossing on Grogan Road would be temporarily extended south to incorporate both access points to the accommodation camp, during both establishment and operation. The speed limit would be clearly signposted at the accommodation camp access points and on Grogan Road.

Ref	Issue	Mitigation measure
AT-3	Site access	The design of the two-way access points to the accommodation camp would be undertaken with regard to relevant standards and guidelines and in consultation with the Cootamundra-Gundagai Regional Council.
AT-4	Transport of construction workers	During operation, workers would be transported between the construction work sites and the accommodation camp via shuttle buses to help minimise potential traffic impacts on the local roads
AT-5	Road safety	Swept path analysis would be undertaken for access from Grogan Road with consideration of bus and service vehicle movements during detailed design.
AT-6	Road safety	Route analysis including an assessment of clearance heights, bridge weight limits and swept path analysis would be undertaken for Oversize Overmass (OSOM) load-carrying vehicles used in the establishment of the accommodation camp.
Hydrology, flooding and water quality		
AHF-1	Hardstand areas	Minimising hard stand areas in the vicinity of camp buildings to minimise increases in runoff.
AHF-2	Site drainage	Site drainage would be installed in accordance with the recommendations in *Managing Urban Stormwater: Soils and construction - Volume 1* (Landcom, 2004).
AHF-3	Stormwater management	Stormwater drainage infrastructure would be included under proposed access tracks and roads to maintain existing local overland flows to the farm dam to the north of the accommodation camp site
AHF-4	Flood management	A stormwater detention basin would be constructed (indicative location would be in the northern portion of the lot) to capture stormwater runoff from the car park during the 10% AEP flood event and will be designed in accordance with the Soil and Water Management Plan (refer to WQ-3).
AHF-5	Wastewater management	Wastewater would be collected and removed off-site for treatment and disposal at a licenced wastewater treatment facility.
AHF-6	Reuse of rainwater	Capture of all rainwater from the roofs of camp buildings across the accommodation camp site for suitable reuse within the site.
Social and economic		
ASE-1	Workforce anti-social behaviour within local towns	Anti-social behaviour within the accommodation camp would be mitigated through the adequate provision of: • noise curfew and security requirements • enforcement of drug and alcohol policies • installation of CCTVs • workforce training and education (regarding community etiquette and anti-social behaviour).
ASE-2	Increased demand on local social and health services, and potential impacts on capacity	Local physical and mental health care service providers would be consulted prior to construction of the accommodation camp.
ASE-3	Increased demand on local social and health services, and potential impacts on capacity	The construction contractor would develop appropriate processes and measures to manage potential increased demand on health and emergency services, including: • the camp would be designed to incorporate recreation facilities within the accommodation camp • workforce training and education would be provided to construction workers regarding mental health, wellbeing, and potential risks associated with fly-in-fly-out and drive-in-drive-out work.
ASE-4	Increased demand on local social and health services, and potential impacts on capacity	Construction workers would be encouraged to access Cootamundra-based services when possible.

Ref	Issue	Mitigation measure
Waste		
AW-1	Waste management	Waste collection and recycling systems would be developed to ensure safe handling of waste on site before being transported off site and disposed of at an approved or licenced materials recycling or waste disposal facility.
Hazard and Risk		
AHR-1	Fire risk management	The construction contractor would ensure that appropriate firefighting equipment, including fire extinguishers, water carts and hoses, are available at the accommodation camp.
AHR-2	Health and emergency services	The construction contractor would ensure that trained first aid personnel are available to treat minor injuries or other minor health issues.

6 References

AECOM (2019), *Young to Wagga Wagga Looping Gas Pipeline, Heritage Assessment Stage 1 – Bethungra to Wagga Wagga*, report prepared for APA Group. NSW Office of Environment and Heritage, South Western Slopes - Regional History. Accessed from https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm.

Atlas of living Australia (2022), Open access to Australia's biodiversity data. Accessed from https://www.ala.org.au/.

Briggs, R. (ed) et al. (2011), *Carved Trees: Aboriginal Cultures of Western NSW*, SLNSW Exhibition Guide, State Library of NSW, Sydney, p 8; NSW Office of Environment and Heritage, South Western Slopes - Regional History. Accessed from https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm.

Bureau of Meteorology (2021), Groundwater Dependent Ecosystems Atlas. Accessed from http://www.bom.gov.au/water/groundwater/gde/.

Cootamundra Aboriginal Working Party (2018), Letter dated 22 November 2018, authored by Paula Maher, Amanda Levett and Peter Beath to GML Heritage.

Cootamundra-Gundagai Regional Council (2017), *Stockinbingal Village Strategy*.

Department of Agriculture, Water and the Environment (DAWE) (2022a), Protected Matters Search Tool. Accessed from http://environment.gov.au/epbc/protected-matters-search-tool.

DECC (Department of Environment and Climate Change) (2009), *Interim Construction Noise Guideline,* Department of Environment and Climate Change, Sydney.

DECCW (Department of Environment, Climate Change and Water) (2010), Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, Department of Environment, Climate Change and Water, Sydney.

Dunlop, EW. (1828), *Oxley, John Joseph (1784–1828)*, Australian Dictionary of Biography, National Centre of Biography, Australian National University. Accessed from https://adb.anu.edu.au/biography/oxley-john-joseph-2530.

Environment Protection and Heritage Council, the Natural Resource Management Ministerial Council and the Australian Health Ministers' Conference (2006), *National Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1)*.

Gibbons, P. and Boak, M. (2000), *The importance of paddock trees for regional conservation in agricultural landscapes*. NSW National Parks and Wildlife Service.

Heritage NSW

Inland Rail Design Joint Venture (IRDJV) (2021), *Technical and Approvals Consultancy Services: Illabo to Stockinbingal Workforce Accommodation Study*.

Inland Rail Design Joint Venture (IRDJV) (2022), *Technical and Approvals Consultancy Services: Illabo to Stockinbingal Technical Paper 1 – Biodiversity Development Assessment Report*.

Landcom (2004), *Managing Urban Stormwater: Soils and construction – Volume 1*. New South Wales Government.

NSW DPIE (Department of Planning Industry and Environment) (2020a), State Vegetation Type Map: Central West / Lachlan Region Version 1.4. VIS_ID 4468. Accessed from https://data.nsw.gov.au/data/dataset/central-west-lachlan-regional-native-vegetation-pct-map-version-1-0-vis_id-4358182f4.

NSW DPIE (2020b), Biodiversity Assessment Method. Parramatta, NSW.

NSW DPIE (2021a), Koala Habitat Protection SEPP. Accessed from https://www.planning.nsw.gov.au/Policy-and-Legislation/Environment-and-Heritage/Koala-Habitat-Protection-SEPP#:~:text=In%20nine%20of%20these%20LGAs,2021%20applies%20to%20all%20zones.

NSW DPIE (2021b), *Social Impact Assessment Guideline for State Significant Projects*.

NSW DPIE (2022), National Flying-fox monitoring viewer. Accessed from http://www.environment.gov.au/webgis-framework/apps/ffc-wide/ffc-wide.jsf.

NSW EPA (Environment Protection Authority) (2014), *Waste Classification Guidelines*. NSW Environment Protection Authority, Sydney South.

NSW EPA (Environment Protection Authority) (2017), *Noise Policy for Industry*. Environment Protection Authority, Sydney.

NSW OEH (Office of Environment and Heritage) (2019), *South Western Slopes - Regional History*. Accessed from https://www.environment.nsw.gov.au/bioregions/SouthWesternSlopes-RegionalHistory.htm.

Roads and Traffic Authority (2002), *Guide to Traffic Generating Developments Version 2.2*.

Royal Botanic Gardens and Domain Trust (2022), PlantNet (The Plant Information Network System of Botanic Gardens Trust). Accessed from http://plantnet.rbgsyd.nsw.gov.au/.

Standards Australia (2019), *4282-2019 Control of the obtrusive effects of outdoor lighting*. Standards Australia, Sydney, NSW.

Tindale, N. (1974), *Aboriginal tribes of Australia: their terrain, environmental controls, distribution limits and proper names*, University of California Press, Berkeley.

UK Department of Transport (1988), *Calculation of Road Traffic Noise*.

APPENDIX

I

Workforce accommodation camp assessment

Appendix A SEARs, Agency and EPBC Act requirements

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

The Secretary's Environmental Assessment Requirements (SEARs), Agency requirements and EPBC Act assessment requirements for the proposal relevant to the accommodation camp assessment are provided in Table A.1.

Table A.1 Secretary's Environmental Assessment Requirements (SEARs), Agency requirements and EPBC Act assessment requirements

SEARs	Requirement	Relevance to accommodation camp assessment
Key Issue SEARs		
1. Biodiversity The project design considers measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.	1. Assess biodiversity impacts in accordance with s7.9 of the Biodiversity Conservation Act 2016 (BC Act), the Biodiversity Assessment Method (BAM), and be documented in a Biodiversity Development Assessment Report (BDAR).	The biodiversity assessment (refer to section 4.2) is based on data and surveys which were undertaken for the BDAR for the proposal (IRDJV, 2022) and followed the Biodiversity Assessment Method (BAM) (DPIE, 2020b). As part of the surveys for BDAR for the proposal, the accommodation camp site was inspected, however, no vegetation integrity plots or targeted surveys were undertaken within the accommodation camp site itself. Vegetation integrity plots were not required within the accommodation camp site, as no native PCT is likely to be impacted (site contains disturbed, exotic grassland). The PCT 76 and the remnant scattered tree in the centre of the site were assessed as a result of field surveys conducted for the BDAR for the proposal (IRDJV, 2022).
	2. The BDAR must document the application of the avoid, minimise and offset framework in accordance with the BAM.	The accommodation camp has been located to avoid impacting native vegetation (PCTs) and threatened species. Mitigation measures are provided to minimise indirect impacts to adjacent values.
	3. The BDAR must include information in the form detailed in s6.12 of the BC Act, cl6.8 of the Biodiversity Conservation Regulation 2017 and the BAM.	The BDAR for the proposal (IRDJV, 2022) was prepared in the form detailed. The biodiversity assessment (refer to section 4.2) provides a summary of the existing environment, impact assessment and mitigation measures specific to the accommodation camp to support the BDAR for the proposal.
	4. The BDAR must be submitted with all digital spatial data associated with the survey and assessment as per Appendix 10 of the BAM.	Spatial data will be submitted as part of the EIS.
	5. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the BC Act.	The biodiversity assessment refer to section 4.2) has been led by a BAM accredited assessor (BAAS17079)

SEARs	Requirement	Relevance to accommodation camp assessment
	6. The BDAR must include details of the measures proposed to address offset obligations in accordance with the BAM and the EPBC Act, as follows: a. the total number and classes of biodiversity credits required to be retired for the development/project b. the number of classes of like-for-like biodiversity credits proposed to be retired c. the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules d. any proposal to fund a biodiversity conservation action e. any proposal to make a payment to the Biodiversity Conservation Fund.	The accommodation camp minimises impacts and would not trigger additional offset obligations. Small areas of derived native grassland (PCT 76) may be present within the road reserve adjacent to the camp location and may be impacted to establish access tracks. These impacts will be minimised by undertaking survey during detailed design to ensure the siting of the access tracks avoids impacts on derived native grassland (PCT 76) as far as possible.
	7. The Proponent must assess any impacts on biodiversity values not covered by the BAM. This includes a threatened aquatic species assessment (Part 7A *Fisheries Management Act 1994*) to address whether there are likely to be any significant impact on listed threatened species, populations or ecological communities listed under the *Fisheries Management Act 1994* (FM Act).	N/A The accommodation camp would not impact aquatic environments or threatened aquatic species.
	8. The Proponent must identify whether the project, or any component of the project, would be classified as a Key Threatening Process (KTP) in accordance with the listings in the BC Act, FM Act and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).	Key Threatening Processes (KTP) are discussed in full in the BDAR for the proposal (IRDJV, 2022). Section 4.2 provides a summary of KTPs relevant to the accommodation camp.
3. Transport and Traffic Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors.	1. Construction transport and traffic (vehicle, pedestrian and cyclists) impacts, including, but not necessarily limited to: a. the likely construction access routes (including haul routes) and the scheduling of construction vehicle movements b. the indicative number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements and track machines) c. construction worker parking d. the nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements) and assessment of traffic impacts on these routes including identifying traffic management measures to mitigate any impacts e. provisions proposed to ensure safe access and egress to/from the classified road network	The traffic and transport assessment (refer to section 4.4) considers the routes taken by shuttle buses between the accommodation camp and construction site access points as well as the volumes and size of vehicles involved in the establishment and operation of the accommodation camp. The accommodation camp contains a car park sized for expected peak vehicle occupancy. A link assessment has been undertaken on routes used by vehicles travelling between the construction site access points and accommodation camp. An intersection assessment has been carried out for the expected peak workforce departure from the accommodation camp. Mitigation measures that will be implemented to ensure safe access and egress to/from the road network are outlined in section 4.4.

SEARs	Requirement	Relevance to accommodation camp assessment
4. Flooding, Hydrology and Geomorphology The project minimises adverse impacts on property, public safety and the environment resulting from alteration of the water flow characteristics of watercourses and overland flowpaths. Where feasible, the project includes remedial measures to mitigate any adverse water flow impacts or flood safety risks caused by the existing rail infrastructure within the project area. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or flooding induced by infrastructure failure	1. Description of topographic and hydrological conditions of the site and surrounding area, including: a. assessment of the existing hydrology and flooding characteristics of all watercourses within and adjacent to the project area. This includes locating and assessing flowpaths emanating from existing culverts, pipes and bridges under the rail formation, or from overtopping of the existing formation in flood events b. description of the existing and proposed topography in all areas that could be potentially affected by floodwaters. This includes the spatial location, and the horizontal and vertical dimensions of all spoil mounds.	Topographic and hydrological conditions of the proposed workforce accommodation site are described in section 4.8.
	3. Operational phase impacts of the proposal on flood behaviour for a full range of flood events up to and including the PMF (including consideration of the impacts of climate change and differencing storm durations), including: d. assessing any changes to the potential flood affectation, scouring or geomorphological changes to other properties, assets and infrastructure, over a full range of flood durations and flood frequencies against the proposed quantitative flood management objectives e. assessing changes in upstream and downstream flow paths (location, discharges and velocities, including overland flow) i. assessing whether each component of the proposal is compatible with the flood hazard of the land and the hydraulic functions of flow conveyance and flood storage of the land.	Potential impacts on flood behaviour during operation of the accommodation camp, and proposed mitigation measures, are discussed in section 4.8

SEARs	Requirement	Relevance to accommodation camp assessment
	4. Construction impacts on the proposal including: a. typical construction methodology and programming that may affect flood impacts b. structures and plant located on the floodplain during construction c. land uses and infrastructure in the vicinity of the project susceptible to flood impacts that may arise during the construction phase d. acceptable impacts having regard to the nature and duration of various construction activities within the floodplain, and the probabilities of a range of flood events occurring over the duration of the construction period e. measures to mitigate risks of construction impacts occurring.	Potential impacts on flood behaviour during construction of the accommodation camp, and proposed mitigation measures, are discussed in section 4.8.
5. Water—Hydrology Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	3. Surface and groundwater hydrology impacts of the construction and operation of the proposal and any ancillary facilities (both built elements and discharges) on surface and groundwater hydrology in accordance with the current guidelines, including: a. natural processes within rivers, wetlands, estuaries, marine waters and floodplains that affect the health of the fluvial, riparian, estuarine or marine system and landscape health (such as modified discharge volumes, durations and velocities), aquatic connectivity and access to habitat for spawning and refuge b. impacts from any permanent and temporary interruption of groundwater flow, including the extent of drawdown, barriers to flows, implications for groundwater dependent surface flows, ecosystems and species, groundwater users and the potential for settlement e. minimising the effects of proposed stormwater and wastewater management during construction and operation on natural hydrological attributes (such as volumes, flow rates, management methods and re-use options) and on the conveyance capacity of existing stormwater systems where discharges are proposed through such systems f. water take (direct or passive) from all surface and groundwater sources with estimates of annual volumes during construction and operation including an assessment of the availability of water where water entitlement is required to be purchased.	Potential impacts on surface and groundwater hydrology during construction and operation of the accommodation camp, and proposed mitigation measures, are discussed in section 4.8

SEARs	Requirement	Relevance to accommodation camp assessment
6. Water quality	1. Water quality impacts, including: a. stating the ambient NSW Water Quality Objectives (NSW WQO) and environmental values for the receiving waters relevant to the proposal, including the indicators and associated trigger values or criteria for the identified environmental values b. identifying and estimating the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point and describe the nature and degree of impact that any discharge(s) may have on the receiving environment, including consideration of all pollutants that pose a risk of non-trivial harm to human health and the environment c. identifying the rainfall event that the water quality protection measures will be designed to cope with d. the significance of any identified impacts including consideration of the relevant ambient water quality outcomes e. demonstrating that all practical measures to avoid or minimise water pollution and protect human health and the environment from harm are investigated and implemented f. identifying sensitive receiving environments (which may include estuarine and marine waters downstream) and develop a strategy to avoid or minimise impacts on these environments.	Performance criteria for the flooding, hydrology and water quality assessment are described in Technical Report 4 - Flooding and Hydrology assessment and Technical Report 5 - Surface Water Quality Assessment of the EIS, as described in section 4.8. Potential impacts on water quality during construction and operation of the accommodation camp, and proposed mitigation measures, are discussed in section 4.8.
7. Soils The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	1. Assess whether the land is likely to be contaminated and identify if remediation of the land is required, having regard to the ecological and human health risks posed by the contamination in the context of past, existing and future land uses. Where assessment and/or remediation is required, the Proponent must document how the assessment and/or remediation would be undertaken in accordance with current guidelines.	The contamination assessment has included a desktop investigation to identify whether the accommodation camp is likely to be contaminated. A preliminary conceptual site model was prepared for the assessment which presents the ecological and human health risks posed by the contamination in the context of past, existing and future land uses (refer to section 4.6)
	2. Assess whether salinity is likely to be an issue and if so, determine the presence, extent and severity of soil salinity within the project area.	The assessment includes a desktop review of the NSW Soil and Land Information System for data points identifying evidence of soil salinity (section 4.6).
	3. Assess the impacts of the project on soil salinity and how it may affect groundwater resources and hydrology.	The NSW Soil and Land Information System does not identify any areas in the accommodation camp site that is affected or that has the potential to be affected by salinity.

SEARs	Requirement	Relevance to accommodation camp assessment
	4. Assess the impacts on soil and land resources (including erosion risk or hazard). Particular attention must be given to soil erosion and sediment transport consistent with the practices and principles in the current guidelines.	Potential impacts on soils during the construction and operation of the accommodation camp and proposed mitigation measures are discussed in section 4.6.
8. Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	1. Direct and/or indirect impacts (including cumulative impacts) to the significance of: a. Aboriginal places and objects, as defined under the *National Parks and Wildlife Act 1974* and in accordance with the principles and methods of assessment identified in the current guidelines b. Aboriginal places of heritage significance, as defined in the Standard Instrument—Principal Local Environmental Plan c. environmental heritage, as defined under the Heritage Act 1977; and d. items listed on the State, National and World Heritage lists e. heritage items, areas of cultural significance and conservation areas identified in environmental planning instruments applicable to the project area f. heritage items in relevant Section 170 Heritage and Conservation Registers.	Potential impacts on the significance of Aboriginal and non-Aboriginal heritage items during construction and operation of the accommodation camp, and proposed mitigation measures, are discussed in section 4.3.
	2. Where impacts to heritage items are identified, the assessment must: a. include a significance assessment, a statement of heritage impact for all heritage items and a historical archaeological assessment b. assess the consistency of the project against conservation policies of any relevant conservation policies of any relevant conservation management plan c. consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant) d. outline measures to avoid and minimise those impacts in accordance with the current guidelines e. be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria).	No impacts identified. Statement of heritage impact and historical archaeological assessment not required.

SEARs	Requirement	Relevance to accommodation camp assessment
	3. Where archaeological investigations of Aboriginal objects are proposed these must be conducted by a suitably qualified archaeologist, in accordance with section 1.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010).	No impacts identified. Archaeological investigation not required.
	4. Impacts to Aboriginal objects and/or places must be assessed and documented in an Aboriginal Cultural Heritage Assessment Report (ACHAR). Consultation must be undertaken with Aboriginal people in accordance with the *Aboriginal Cultural Heritage Consultation requirements for proponents* (DECCW, 2010). The ACHAR must a. document the outcomes of consultation with Aboriginal people and outline measures proposed to mitigate impacts. The significance of cultural heritage values for Aboriginal people who have a cultural association with the land b. identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the project c. document the outcomes of the archaeological surface survey and test excavation to inform the need for targeted test excavations d. assess and document impacts on Aboriginal cultural heritage values and demonstrate attempts to avoid impacts upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to the AHIMS Register e. outline procedures to be followed if Aboriginal objects, burials or skeletal material are found at any stage of the life of the project to formulate appropriate measures to manage unforeseen impacts.	No impacts identified. ACHAR preparation not required.

SEARs	Requirement	Relevance to accommodation camp assessment
9. Noise and Vibration Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity. Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community. Increases in noise emissions and vibration affecting environmental heritage as defined in the *Heritage Act 1977* during operation of the project are effectively managed.	1. Construction and operational noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines.	Construction and operational noise and vibration impacts have been assessed in accordance with the NSW *Interim Construction Noise Guideline* (DECC, 2009) and *Noise Policy for Industry* (EPA, 2017).
	2. The assessment of construction noise and vibration must address: a. the nature of construction activities and related noise characteristics b. the intensity and duration of noise (both air and ground borne) and vibration impacts. This must include consideration of construction impacts associated with ancillary facilities (and the like) and construction fatigue c. the identification and nature of receivers, existing and proposed, during the construction period d. the structural integrity and heritage significance of items (including Aboriginal places and items of environmental heritage) e. the nature of the impact and the sensitivity of receivers, including but not limited to residential (permanent and short term), tourist and proposed commercial uses, both existing, and level of impact including for out of hours works f. the need to balance timely conclusion of noise and vibration-generating works with periods of receiver respite, and other factors that may influence the timing and duration of construction activities (such as traffic management)	a. Five separate construction scenarios and one operational scenario have been assessed (refer to section 4.5.4) b. Due to the large distance between the works area and nearest sensitive receivers ground borne noise and vibration impacts are not anticipated. For the noise assessment, all works are assumed to occur for the entirety of the 15 minute period. c. Noise sensitive receivers have been identified during the EIS. Receivers identified in the noise assessment are consistent with the EIS. Refer to Figure 4.4 for location of noise sensitive receivers. d. No heritage structures or places of aboriginal heritage have been identified within the area impacted by the workforce camp (refer to section 4.3.4) e. The impacts on all sensitive receivers within the vicinity of the accommodation camp have been assessed (refer to section 4.5.4) f. Camp construction activities are planned for standard hours only therefore periods of respite are not applicable. Refer to section 4.5.6 for mitigation measures.

SEARs	Requirement	Relevance to accommodation camp assessment
	g. noise impacts of out-of-hours works (including utility works and works associated with the SSI including those undertaken under another assessment pathway), possible locations where out-of-hours works would be undertaken, the activities that would be undertaken, the estimated duration of those activities and justification for these activities in terms of the Interim Construction Noise Guideline (DECC, 2009) h. sleep disturbance (including the number of noise-awakening events) i. details and analysis of the predicted effectiveness of mitigation measures to adequately manage identified impacts, including impacts as identified in (h) j. any potential residual noise and vibration impacts following application of mitigation measures; and k. a description of how receiver feedback received during the preparation of the EIS has been taken into account (and would be taken into account post exhibition of the EIS) in the design of mitigation measures, including any tailored mitigation, management and communication strategies for sensitive receivers.	g. Camp construction activities will take place during standard hours only. h. Sleep disturbance for camp construction activities has not been considered as no out of hours construction works are anticipated. i. Refer to section 4.5.6 for discussion of mitigation measures. j. Refer to section 4.5.6 for discussion of mitigation measures. Receiver feedback is to be managed in line with the EIS and the Inland Rail NSW Construction Noise and Vibration Management Framework.
11. Social The project minimises adverse social impacts and capitalises on opportunities potentially available to affected communities.	1. Potential social impacts of the project from the points of view of the affected community/ies and other relevant stakeholders, i.e. how they expect to experience the project.	Potential social impacts associated with the construction and operation of the accommodation camp on the local community, workers and other potential relevant stakeholders are assessed in section 4.7.
	2. How potential environmental changes in the locality may affect people's (including, but not limited to): a. community b. access to accommodation and housing c. access to and use of infrastructure, services, and facilities d. culture e. health and wellbeing; surroundings f. personal and property rights g. decision-making systems; and h. fears and aspirations, as relevant and considering how different groups may be disproportionately affected.	Potential social impacts associated with the construction and operation of the accommodation camp on the local community, workers and other potential relevant stakeholders, including impacts on way of life, community, accessibility, culture, health and wellbeing, surroundings and livelihoods are assessed in section 4.7.
	3. Social actions and outcomes that address both negative and positive social impacts.	The SIA assesses both positive and negative social impacts, as identified during the scoping of impacts. The nature of each impact is described in section 4.7.

SEARs	Requirement	Relevance to accommodation camp assessment
Agency Requirements		
Department of Primary Industries	**1.** Proposal minimises social and economic impacts and capitalises on opportunities potentially available to affected communities. 4. Proposal assess impacts from construction and operation on potentially affected businesses, including access, amenity and relevant statutory rights. 6. Biosecurity risk assessment/s are undertaken and biosecurity risk management plans are developed and implemented to help prevent, eliminate or minimise any biosecurity impact from the proposal. The approach would demonstrate and provide evidence to the local communities that biosecurity risks have been considered and are actively being managed.	1. The operation of the accommodation camp is expected to result in less demand for and pressure on short term and long term accommodation in the local and regional area. There is potential for local businesses in the town to benefit from the construction of the accommodation camp economically, through potential workforce patronage. Additional patronage could lead to some minor flow on benefits for local industries such as hospitality and tourism, and in turn provide additional opportunities for employees. 4. The potential impacts from construction and operation of the accommodation camp on potentially affected businesses are discussed in section 4.7. 6. Biosecurity risks would be managed in accordance with Chapter 27 (Approach to environmental management and mitigation) of the EIS.
EPA	4. Assessment for construction noise and vibration to include the following: a. identification of other noise generating activities being carried out outside the proposal, both simultaneously and concurrently with the proposal and assess the cumulative impacts on noise sensitive receivers b. impact of idling locomotives on the nearby residents and other noise receivers c. an assessment of construction and operational noise and vibration impacts in accordance with the NSW EPA Noise Policy for Industry (NPfI) 2017 d. reference to Noise Policy for Industry (EPA, 2017).	a. Establishment of the camp is expected to be conducted over a short timeframe and be complete before major works for the wider proposal. Operational impacts from the camp are negligible at sensitive receivers and will not contribute to the cumulative noise impacts b. Idling locomotives have not been considered as part of the workforce camp assessment c. Refer to section 4.5.4 d. Construction and operational noise and vibration impacts have been assessed in accordance with the *Interim Construction Noise Guideline* (DECC, 2009) and *Noise Policy for Industry* (EPA, 2017).

SEARs	Requirement	Relevance to accommodation camp assessment
Office of Environment and Heritage	2. Assessment of Aboriginal heritage to include the following: a identify and describe the Aboriginal heritage values that exist across the whole area that will be affected by the proposal. The identification of cultural heritage values must be conducted in accordance with the Code for Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and be guided by the Guide to investigating, assessing and reporting on the Aboriginal Cultural Heritage in NSW (DECCW, 2011). b consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW).	The Aboriginal cultural heritage assessment was conducted in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (Department of Environment, Climate Change and Water (DECCW), 2010) and the Guide to investigating, assessing and reporting on the Aboriginal Cultural Heritage in NSW (DECCW, 2011). Extensive consultation was undertaken during the ACHAR prepared for the proposal, including the accommodation camp site. Potential impacts on the significance of Aboriginal heritage items during construction and operation of the accommodation camp, and proposed mitigation measures, are discussed in section 4.3.
	3. Assessment of Non-aboriginal heritage to include the following: a. impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees b. outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996) c. be undertaken by a suitably qualified heritage consultant(s).	Potential impacts on State and location heritage items are assessed in section 4.3. No historical heritage items have been identified within or near the accommodation camp site and no unrecorded heritage items or archaeological deposits were identified within or in proximity to the accommodation camp site. The heritage assessment was undertaken by a suitably qualified heritage consultant.
	4. Assessment of flooding to include the following: a map the following features as described in the Floodplain Development manual 2005 (NSW Government 2005) including: i flood prone land ii flood planning area, the area below the flood planning level iii hydraulic categorisation (floodways and flood storage areas) iv flood hazard b describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP flood levels and the probable maximum flood, or an equivalent extreme event c model the effect of the proposal (including fill) on the flood behaviour for a range of design events including 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change	Flood depths during the 0.2EY, 1% AEP and 10% AEP flood events and duration of the 10% AEP flood event are shown in Figure 1 to Figure 4 in Appendix F. The accommodation camp site is largely flood free and only subject to local overland flows with limited areas of the site affected, as discussed in section 4.8. The impacts to flooding will not be significant and can be managed through the design of the accommodation camp.

SEARs	Requirement	Relevance to accommodation camp assessment
	d modelling to consider and document: i existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies ii impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood iii impacts of the proposal on flood behaviour resulting in detrimental changes in potential flood affection of other development or land (this may include redirection of flow, flow velocities, flood levels, hazards and hydraulic categories) iv relevant provisions of the NSW Floodplain Development Manual 2005 e assess impacts from the proposal on flood behaviour including i whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure ii consistency with Council Floodplain Risk Management Plans and Rural Floodplain Management Plans iii compatibility with the flood hazard of the land and hydraulic functions of low conveyance in flood ways and storage in flood storage areas of the land iv whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the sit v whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses vi any impacts the proposal may have upon existing community emergency management arrangements for flooding (to be discussed with the SES and Council) vii whether the proposal incorporates specific measures to mage risk to life from flood (to be discussed with the SES and Council) viii emergency management, evacuation and access, and contingency measures for the development considering the full range or flood risk—based upon the probable maximum flood or an equivalent extreme flood event (to be discussed with the SES and Council) 5. any impacts the proposal may have on the social and economic costs to the community as consequence of flooding.	

SEARs	Requirement	Relevance to accommodation camp assessment
Transport for NSW	6. Assess construction transport and traffic (vehicle, pedestrian, bus services, train operations and cyclists) impacts, including but not necessarily limited to: a number, frequency and size of construction related vehicles (passenger, commercial and heavy vehicles, including spoil management movements and track machines) b nature of existing traffic (types and number of movements) on construction access routes (including consideration of peak traffic times and sensitive road users and parking arrangements) and assessment of traffic impacts on these routes including identifying traffic management measures to mitigate any issues c provisions proposed to ensure safe access and egress to/from the classified road network.	The traffic and transport assessment (refer to section 4.4) considers the nature of the existing road environment as well as the volumes, frequency and size of vehicles involved in the establishment and operation of the accommodation camp, provisions to ensure safe access and egress to/from the classified road network
Cootamundra-Gundagai Regional Council	4. The Proponent must assess construction and operational noise and vibration impacts in accordance with relevant NSW noise and vibration guidelines. The assessment must include consideration of impacts to sensitive receivers including small businesses, and include consideration of sleep disturbance and, as relevant, the characteristics of noise and vibration (for example, low frequency noise). The assessment must include options for mitigation where significance construction and/or operational noise and vibration impacts are identified.	Construction and operational noise and vibration impacts have been assessed in accordance with the *Interim Construction Noise Guideline* (DECC, 2009) and *Noise Policy for Industry* (EPA, 2017). Discussion of mitigation options for exceedances of the noise criteria is in section 4.5.6.
EPBC Act requirements (from Attachment A to the SEARs)		
General Assessment Requirements	1. For each of the EPBC Act-listed species and ecological communities impacted by the proposed action, the EIS must provide: a. survey results, including details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Commonwealth guidelines and policy statements b. a description of the habitat and habits (including identification and mapping of suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advice, conservation advice and recovery plans, threat abatement plans and wildlife conservation plans; and c. maps displaying the above information (specific to EPBC matters) overlaid with the proposed action.	The methodology for the biodiversity assessment is provided in section 4.2.2 and a description of the existing environment is provided in section 4.2.3. Field surveys were carried out within the proposal site for the BDAR (refer to Technical Paper 1 (Biodiversity Development Assessment Report of EIS).

SEARs	Requirement	Relevance to accommodation camp assessment
	2. The EIS must describe the nature, geographic extent, magnitude, timing and duration of any likely direct, indirect and consequential impacts on any relevant EPBC Act-listed species and communities. It must clearly identify the location and quantify the extent of all impact areas to each relevant EPBC Act-listed species or community.	Potential impacts on EPBC Act-listed species and communities are described in section 4.2.4.
	3. For each of the EPBC Act-listed species and communities that are likely to be impacted by the development, the EIS must provide information on proposed avoidance and mitigation measures to deal with the impacts of the action, and a description of the predicted effectiveness and outcomes that the avoidance and mitigation measures will achieve.	Proposed avoidance and mitigation measures are outlined in Chapter 5 and Chapter 27 (Approach to environmental management and mitigation) of the EIS.
	4. The EIS must identify each EPBC Act-listed species and community likely to be significantly impacted by the proposed action. Where a significant impact is likely, the EIS must provide information on the proposed offset strategy, including discussion of the conservation benefit, how offsets will be secured, and timing of protection.	No significant impacts are likely on any EPBC Act-listed species or community.

APPENDIX I

Workforce accommodation camp assessment

Appendix B Threatened species—likelihood of occurrence

Table B.1 Threatened flora database search

Scientific name	Common name	BC Act status[1]	EPBC Act status[1]	Habitat/ geographic requirements[2]	BioNet records	Source[3]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Acacia ausfeldii	Ausfeld's Wattle	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat in the form of PCT 266; PCT 277 & PCT 276 was not recorded within the accommodation camp site. Though no records exist within the locality, this species has been previously recorded to the north of Stockinbingal in Weddin Mountains National Park.	Low. Associated habitat not present within site.
Ammobium craspedioides	Yass Daisy	V	V	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat in the form of PCT 266; PCT 277; PCT 276; not recorded within the accommodation camp site. Though no records exist within locality of the accommodation camp site, an outlier population has been recorded about 30km to the south of Wagga Wagga in Livingstone National Park. This species was identified by DEE as a possible controlled provision.	Low. Associated habitat not present within site.
Amphibromus fluitans	Floating Swamp Wallaby-grass	V	V	Periodically inundated sites (including table drains and farm dams), notably wetlands on riverine floodplain	0	PMST	Species identified in PMST search. Habitat requirements not present within accommodation camp site. Associated PCTs not recorded. Low likelihood of occurrence.	Low. Associated habitat not present within site.
Austrostipa metatoris	A spear-grass	V	V	None. No specific requirements or restrictions identified in BCC	0	PMST	Species was identified in PMST search. Associated PCTs not recorded. The accommodation camp site is considered outside of this species geographic distribution. No records within the locality of the alignment.	Low. Associated habitat not present within site.
Austrostipa wakoolica	A spear-grass	E	E	South of Narranderra	0	BCC, PMST	Associated habitat in the form of PCT 76 present.	Potential habitat within PCT 76 in the east of the site.
Caladenia arenaria	Sand-hill Spider Orchid	E	E	west of Lockhart and north of Rand	1	BCC, PMST, BioNet	The accommodation camp site is considered outside of this species known distribution. One record from 1990 exists near Bethungra Mountain. Associated habitat in the form of PCT 76 was recorded.	Potential habitat within PCT 76 in the east of the site.

Scientific name	Common name	BC Act status[1]	EPBC Act status[1]	Habitat/ geographic requirements[2]	BioNet records	Source[3]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Caladenia concolor	Crimson Spider Orchid	E	V	None. No specific requirements or restrictions identified in BCC	4	BCC, PMST, BioNet	Associated habitat in the form of PCT 347 was not recorded in the accommodation camp site. Though no recent records were in locality, one record from 1991 exists near Bethungra Mountain. This species was identified by DEE as a possible controlled provision.	Low. Associated habitat not present within site.
Caladenia tensa	Greencomb Spider-orchid	–	E	–	0	PMST	The accommodation camp site is considered outside of this species known geographic distribution. Associated habitat was not recorded within the accommodation camp site.	Low. Associated habitat not present within site.
Cullen parvum	Small Scurf-pea	E	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat (PCT 347, PCT 277, PCT 5) was not recorded within the accommodation camp site. Preferred habitat, grassland, River Red Gum Woodland or Box-Gum Woodland, sometimes on grazed land and along watercourses was recorded in moderate condition within the proposal site.	Low. Associated habitat not present within site.
Diuris tricolor	Pine Donkey Orchid	V	–	None. No specific requirements or restrictions identified in BCC	1	BCC, BioNet	Associated habitat was recorded within the accommodation camp site (PCT 76). Previously recorded in 2000, within locality of the proposal site, west of Jundalee National Park.	Potential habitat within PCT 76 in the east of the site.
Euphrasia arguta	Euphrasia arguta	CE	CE	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat was not recorded within the accommodation camp site (PCT 266 and PCT 276).	Low. Associated habitat not present within site.
Grevillea wilkinsonii	Tumut Grevillea	E	E	Eastern part of sub-region from 10km west of the Hume Highway and north of the Snowy Mountains Highway	0	BCC	Associated habitat was not recorded within the accommodation camp site (PCT 266). Highly restricted population known from only two locations: east of Tumut and near Gundagai.	Low. Associated habitat not present within site.

Scientific name	Common name	BC Act status[1]	EPBC Act status[1]	Habitat/ geographic requirements[2]	BioNet records	Source[3]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Indigofera efoliata	Leafless Indigo	E	E	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat in the form of PCT 76 was recorded within the accommodation camp site. Though not previously recorded within locality of the accommodation camp site, this species is known to grow on slight rises amongst ironstone formation in stony red-brown sandy loam.	Potential habitat within PCT 76 in the east of the site.
Lepidium aschersonii	Spiny Pepper-cress	V	V	On ridges of gilgai clays	0	PMST	Species was identified in PMST search. Associated habitat in the form of PCT 76 was recorded within the accommodation camp site, however, habitat requirements for the species, gilgai clays, were not recorded. Closest record to the west at Temora (in 1915). Species unlikely to occur.	Low. Associated habitat not present within site.
Lepidium monoplocoides	Winged Pepper-cress	E	E	Mostly restricted to seasonally moist sites	0	PMST	Species was identified in PMST search. Associated habitat in the form of PCT 80 was not recorded within the accommodation camp site,	Low. Associated habitat not present within site.
Leucochrysum albicans subsp. *tricolor*	Hoary Sunray	–	E	None. No specific requirements or restrictions identified in BCC	0	PMST	Species was identified in PMST search. Not recorded within the proposal site during surveys. No records within the locality of the alignment. Species considered unlikely to occur.	Not considered further
Prasophyllum petilum	Tarengo Leek Orchid	E	E	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	The accommodation camp site is considered outside of this species known geographic distribution. Associated habitat in the form of PCT 347, PCT 277, PCT 276 was not recorded. Though not previously recorded within locality of the accommodation camp site, this species is known to grow in open native grasslands. This species was identified by DEE as a possible controlled provision.	Associated habitat not present within site.
Pultenaea humilis	Dwarf Bush-pea	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat (PCT 347) was not recorded within the accommodation camp site. This species is known to occur in isolated remnants of native woodland and forest communities that occur in extensively cleared agricultural landscapes.	Associated habitat not present within site.
Senecio garlandii	Woolly Ragwort	V	–	None. No specific requirements or restrictions identified in BCC	1	BCC, BioNet	Associated habitat in the form of PCT 347 was not recorded in the accommodation camp site. Closest record at Ulandra Nature Reserve (1999).	Associated habitat not present within site.

Scientific name	Common name	BC Act status[1]	EPBC Act status[1]	Habitat/ geographic requirements[2]	BioNet records	Source[3]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Senecio macrocarpus	Large-fruit Fireweed, Large-fruit Groundsel	-	V		0	PMST	In NSW it occurs as one population or 3 plants near Gundaroo. No records occur for this species within the locality. Accommodation camp site occurs outside of species known range and no habitat exists within the site (associated PCTs 3373 and PCT 3376).	Low. Associated habitat not present within site.
Swainsona recta	Small Purple-pea	E	E	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Associated habitat was recorded within the proposal site (PCT 76). Though no records within the locality of the accommodation camp site, this species is known to occur in the grassy understorey of woodlands and open-forests.	Potential habitat within PCT 76 in the east of the site.
Swainsona murrayana	Slender Darling Pea	V	V	Western half of sub-CMA	0	BCC	Associated habitat was recorded within the accommodation camp site (PCT 76).	Potential habitat within PCT 76 in the east of the site.
Swainsona sericea	Silky Swainson-pea	V	V	None. No specific requirements or restrictions identified in BCC	0	BCC	Associated habitat was recorded within the accommodation camp site (PCT 76).	Potential habitat within PCT 76 in the east of the site.
Tylophora linearis	Tylophora linearis	V	E	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Associated habitat was not recorded within the accommodation camp site (PCT 347). The closest known record of this species is historic (1915) and is located near Temora, approximately 30km west of the accommodation camp site.	Low. Associated habitat not present within site.

(1) V = Vulnerable, E = Endangered, CE = Critically Endangered

(2) Habitat and geographic requirements were obtained from the BAM Credit Calculator (BCC)

(3) BCC = BAM Credit Calculator, BioNet = Office of Environment and Heritage spatial search, PlantNet = Royal Botanic gardens spatial search, PMST = Protected Matters Search Tool (Department of Agriculture, Water and the Environment)

Table B.2 Threatened flora database search

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Amphibians (3)									
Sloane's Froglet	*Crinia sloanei*	V	–	Semi-permanent/ ephemeral wet areas/Containing relatively shallow sections with submergent and emergent vegetation, or within 500m of wet area/ within 500m of swamps/within 500m of waterbody	0	BCC	Species	Some potential associated habitats are likely to occur.	Low. Habitat requirements not present.
Booroolong Frog	*Litoria booroolongensis*	E	V	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Species	Associated habitat not recorded within the accommodation camp site. No dams or ephemeral waterways are present within the accommodation camp site. No records within the locality of the accommodation camp site.	Low. Habitat requirements not present.
Southern Bell Frog	*Litoria raniformis*	E	V	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Species	Associated habitat not recorded within the accommodation camp site. No dams or ephemeral waterways are present within the accommodation camp site. No records within the locality of the accommodation camp site.	Low. Habitat requirements not present.
Birds (54)									
Australasian Bittern	*Botaurus poiciloptilus*	–	E	None. No specific requirements or restrictions identified in BCC	0	PMST	Ecosystem	Species identified in PMST search. No records within the locality and not included in BAM-C list. Associated habitat, brackish or freshwater wetlands not recorded within the accommodation camp site.	Low. Associated habitat not present.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Australasian Painted Snipe	*Rostratula australis*	E	E	None. No specific requirements or restrictions identified in BCC	0	PMST, BCC	Ecosystem	Associated habitat, fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber, not recorded within the accommodation camp site.	Low. Associated habitat not present.
Barking Owl	*Ninox connivens*	V	–	Hollow bearing trees; Living or dead trees with hollows greater than 20cm diameter and greater than 4m above the ground.	0	BCC	Species/ Ecosystem	Accommodation camp site may be within the home range of local individuals, but local records are sparse and there are no records within 10km of accommodation camp site. The accommodation camp site provides marginal foraging habitat for this species, however unlikely to support an individual in isolation from much higher quality habitats.	May occur in PCT 76 in east of site
Black-breasted Buzzard	*Hamirostra melanosternon*	V	–	None. No specific requirements or restrictions identified in BCC	1	BioNet	Species/ Ecosystem	Species was not identified in BAM-C however, a record in the locality was identified in Bionet search. The potential for this species to occur within the accommodation camp site cannot be entirely discounted, however no associated PCTs occur within the accommodation camp site (Department of Planning industry and Environment 2021), and there is only one record within the locality from 1997 (Department of Planning Industry and Environment 2021). Diurnal bird surveys during breeding season (September to November) did not identify large stick nests or any individuals.	Low. Associated PCTs not recorded and no stick nests were identified during field surveys
Black Falcon	*Falco subniger*	V	–	None. No specific requirements or restrictions identified in BCC	3	BioNet	Ecosystem	Although not identified in BCC, species was recorded in proposal site. The accommodation camp site may occur within the home-range of one or more individuals. The accommodation camp site's habitats are considered unlikely to support this species in isolation from habitats that are more productive in terms of prey species.	Moderate - Inclusion of species as Ecosystem credit species

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Black-chinned Honeyeater (eastern subspecies)	*Melithreptus gularis*	V	–	None. No specific requirements or restrictions identified in BCC	6	BioNet, BCC	Ecosystem	The potential for this species to occur within the accommodation camp site cannot be entirely discounted, however it does not conform to high quality woodland habitat types that this species is dependent upon for foraging and breeding purposes, so its likelihood of occurrence is considered low.	Low. Absence of high quality woodland habitat types that this species is dependent upon for foraging and breeding purposes
Blue-billed Duck	*Oxyura australis*	V	–	None. No specific requirements or restrictions identified in BCC	1	BioNet	Ecosystem	Species was not identified in BAM-C however, a record in the locality was identified in Bionet search. Species occurs in large permanent wetlands and swamps with dense aquatic vegetation (Office of Environment & Heritage 2017). Associated habitat was not recorded within the accommodation camp site. No dams or ephemeral waterways are present within the accommodation camp site.	Low. No associated PCTs (Department of Planning industry and Environment 2021) occur within the accommodation camp site, and there is only one record within the locality from 1997 (Department of Planning industry and Environment 2021).

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Brown Treecreeper (eastern subspecies)	*Climacteris picumnus victoriae*	V	–	East of Newell Highway – west is hybrid zone where intergrades with the arid zone subspecies of Brown Treecreeper (Climacteris picumnus picumnus), East of Newell Highway - west is hybrid zone with western subspecies, East of Walbundrie - west within hybrid zone with inland subspecies	60	BioNet, BCC	Ecosystem	Potential habitat in the form of open eucalypt forests and woodlands recorded within the accommodation camp site.	Moderate - Potential habitat in PCT 76 in east of site
Bush Stone-curlew	*Burhinus grallarius*	E1	–	Fallen/standing dead timber including logs	0	BCC	Species	There is a lack of quality understorey habitat to support this species.	Moderate - Potential habitat in PCT 76 in east of site
Common Sandpiper	*Actitis hypoleucos*	–	M	None. No specific requirements or restrictions identified in BCC		PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list.	Low. Species associated habitat, littoral and estuarine habitats, not recorded within the accommodation camp l site. Low likelihood of occurrence.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Curlew Sandpiper	*Calidris ferruginea*	E1	CE; M	None. No specific requirements or restrictions identified in BCC	2	BioNet, PMST	Species/ Ecosystem	Species records within the locality and not included in BAM-C list. Species associated habitat, littoral and estuarine habitats, not recorded within the accommodation camp site.	Low. Species associated habitat, littoral and estuarine habitats, not recorded within the accommodation camp site
Diamond Firetail	*Stagonopleura guttata*	V	–	None. No specific requirements or restrictions identified in BCC	13	BioNet, BCC	Ecosystem	Potential habitat in the form of open eucalypt forests and woodlands recorded within the accommodation camp site.	Potential habitat within PCT 76 in east of site
Dusky Woodswallow	*Artamus cyanopterus*	V	–	None. No specific requirements or restrictions identified in BCC	22	BioNet, BCC	Ecosystem	Associated habitat in the form of open eucalypt forests and woodlands recorded within the accommodation camp site.	Potential habitat within PCT 76 in east of site
Eastern Curlew	*Numenius madagascariensis*	–	CE; M	None. No specific requirements or restrictions identified in BCC	0	PMST	Species/ Ecosystem	Species identified in PMST search. No records within the locality and not included in BAM-C list. Associated with sheltered coasts, estuaries, bays, harbours, inlets with intertidal mudflats. Species associated habitat was not recorded within the accommodation camp site. Species unlikely to occur.	Low. Associated habitat not present.
Flame Robin	*Petroica phoenicea*	V	–	None. No specific requirements or restrictions identified in BCC	19	BioNet, BCC	Ecosystem	Associated habitat, moist eucalypt forests, were not recorded within the accommodation camp site. However, the potential for this species to occur within the accommodation camp site cannot be entirely discounted, as the species is known to occur within the locality and may utilise the habitats present for marginal foraging.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Fork-tailed Swift	*Apus pacificus*	–	M	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Almost exclusively aerial. Commonly recorded over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. May irregularly occur foraging over accommodation camp site.	Low - Not considered further (migratory species further discussed in BDAR report)
Freckled Duck	*Stictonetta naevosa*	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Ecosystem	No dams or ephemeral waterways are present within the accommodation camp site.	Low. Associated habitat not present
Gang-gang Cockatoo	*Callocephalon fimbriatum*	V	E	Hollow bearing trees; Eucalypt tree species with hollows greater than 9cm diameter	4	BCC, BioNet	Species	The accommodation camp site is outside of species distribution.	Potential habitat within PCT 76 in east of site
Gilbert's Whistler	*Pachycephala inornata*	V	–	None. No specific requirements or restrictions identified in BCC	1	BCC, BioNet	Ecosystem	Associated habitat, dense shrub layer in box-ironbark communities, was not recorded. Species known breeding habitat (dense foliage of plants such as wattles or cypress pines) was not recorded within the accommodation camp site.	Low. Associated PCTs not present.
Glossy Black-Cockatoo	*Calyptorhynchus lathami*	V	–	Hollow bearing trees; Living or dead tree with hollows greater than 15cm diameter and greater than 5m above ground. Presence of Allocasuarina and casuarina species	0	BCC	Species/ Ecosystem	No Allocasuarina species recorded on accommodation camp site upon which this species is dependent. Likely too distant from such resources to represent breeding sites in larger hollows on site. No records in locality.	Low. Associated habitat not present.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Grey-crowned Babbler (eastern subspecies)	*Pomatostomus temporalis*	V	–	None. No specific requirements or restrictions identified in BCC	50	BioNet, BCC	Ecosystem	Potential habitat in the form of open eucalypt forests and woodlands recorded within the accommodation camp site.	Potential habitat within PCT 76 in east of site
Grey Falcon	*Falco hypoleucos*	E	V	None. No specific requirements or restrictions identified in BCC	0	PMST	Ecosystem	Species identified in PMST search. No records within the locality and not included in BAM-C list. Accommodation camp site is on the eastern fringes of range.	Potential habitat within PCT 76 in east of site
Gull-billed Tern	*Gelochelidon nilotica*	–	M	None. No specific requirements or restrictions identified in BCC	1	BioNet	–	Species identified in PMST search and not included in BAM-C list. Outside species regular distribution. May occur as rare nomadic/visitor within the locality.	Not considered further
Hooded Robin (south-eastern form)	*Melanodryas cucullata*	V	–	None. No specific requirements or restrictions identified in BCC	3	BioNet, BCC	Ecosystem	Prefers good patches of woodland habitat with complex understorey diversity, which is limited in the accommodation camp site. The species is known in wider locality with associated with structural intact open eucalypt woodland.	Potential habitat within PCT 76 in east of site
Latham's Snipe	*Gallinago hardwickii*	–	M	None. No specific requirements or restrictions identified in BCC	7	BioNet, PMST	–	Inhabits open, freshwater wetlands with low, dense vegetation. Associated habitat not recorded within the accommodation camp site. Species unlikely to occur.	Low. Associated habitat not recorded
Little Eagle	*Hieraaetus morphnoides*	V	–	Nest trees – live (occasionally dead) large old trees within vegetation	10	BCC, BioNet	Species/ Ecosystem	Moderate. The accommodation camp site may occur within the home-range of one or more individuals. The habitats within site are considered unlikely to support this species in isolation from habitats that are more productive in terms of prey species.	Potential foraging habitat
Little Lorikeet	*Glossopsitta pusilla*	V	–	None. No specific requirements or restrictions identified in BCC	8	BioNet, BCC	Ecosystem	Moderate. Potential foraging and habitat within intact vegetation where presence of mature Eucalypts occur. May be an irregular visitor during abundance of blossoming eucalypts.	Low. Associated PCT not present.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Major Mitchell's Cockatoo	*Lophochroa leadbeateri*	V	–	Hollow bearing trees; Living or dead tree with hollows greater than 10cm diameter	1	BCC	Species/ Ecosystem	Low. Accommodation camp site is on the eastern fringes of range. Although it may occur rarely in the accommodation camp site habitats are unlikely to represent important foraging resources locally.	Low. Associated PCT not present.
Malleefowl	*Leipoa ocellata*	E1	V	None. No specific requirements or restrictions identified in BCC	0	PMST	Ecosystem	Low. Species was not identified in BCC. Associated PCTs do not occur within the accommodation camp site. Associated mallee habitat not recorded within the accommodation camp site.	Low. Associated PCT not present.
Marsh Sandpiper	*Tringa stagnatilis*	–	M	None. No specific requirements or restrictions identified in BCC	7	BioNet	–	Species not identified in either PMST search or BAM-C list. Occurs in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. Associated habitat not recorded within the accommodation camp site. Species unlikely to occur.	Low. Associated habitat not present.
Masked Owl	*Tyto novaehollandiae*	V	–	Hollow bearing trees; Living or dead trees with hollows greater than 20cm diameter.	0	BCC	Species/ Ecosystem	Accommodation camp site may be within the home range of local individuals; however, this species is unlikely to occur due to the scarcity of local records and habitats within the accommodation camp site are of insufficient quality and size to support individuals.	Potential habitat within PCT 76 in east of site
Painted Honeyeater	*Grantiella picta*	V	V	Mistletoes present at a density of greater than five mistletoes per hectare	3	BCC, PMST, BioNet	Ecosystem	Marginal foraging habitat within remnant vegetation. A specialist feeder on mistletoes (Amyema) which did not occur in high densities.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Powerful Owl	*Ninox strenua*	V	–	Hollow bearing trees; Living or dead trees with hollows greater than 20cm diameter.		BCC	Species/ Ecosystem	Accommodation camp site may be within the home range of local individuals; however, this species is unlikely to occur due to the paucity of local records and habitats within the accommodation camp site are of insufficient quality to support individuals. Records occur further to the east in association with the Great Dividing Range and coastal habitats.	Low. Associated habitat not present.
Pectoral Sandpiper	*Calidris melanotos*	–	M	–	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Associated habitat not recorded within the accommodation camp site.	Low. Associated habitat not present.
Pied Honeyeater	*Certhionyx variegatus*	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Ecosystem	Preferred habitat of wattle shrub, primarily Mulga (Acacia aneura), Mallee and spinifex not within the accommodation camp site.	Low. Associated habitat not present.
Purple-crowned Lorikeet	*Glossopsitta pporphyrocephala*	V		None. No specific requirements or restrictions identified in BCC	0	BCC	Ecosystem	No records within the locality, and potential habitat not present.	Low. Associated habitat not present.
Regent Honeyeater	*Anthochaera phrygia*	CE	CE	As per mapped areas	2	BCC, BioNet, PMST	Species/ Ecosystem	Potential to occur during seasonal movements and to utilise blossoming eucalypts. Accommodation camp site does not conform to high quality woodland habitats types that this species is dependent upon for foraging and breeding purposes. The accommodation camp site is not identified as a breeding area for the species.	Low. Associated habitat not present.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Rufous Fantail	*Rhipidura rufifrons*	–	M	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Mainly inhabits wet sclerophyll forests. During seasonal movements sometimes recorded in drier sclerophyll forests and woodlands. Associated habitat not found within the accommodation camp site.	Low. Associated habitat not present.
Satin Flycatcher	*Myiagra cyanoleuca*	–	M	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Inhabit heavily vegetated gullies in eucalypt-dominated forests and taller woodlands. During seasonal movements, occurs in coastal forests, woodlands, mangroves and drier woodlands and open forests. Preferred habitat not within accommodation camp site, however, rare occurrences during seasonal movements may occur.	Low. Associated habitat not present.
Scarlet Robin	*Petroica boodang*	V	–	None. No specific requirements or restrictions identified in BCC	21	BioNet, BCC	Ecosystem	Prefers good patches of woodland habitat with complex understorey diversity, which is not present in accommodation camp site. The potential for this species to occur within the accommodation camp site cannot be entirely discounted, as the species is known to occur within the locality and may utilise the habitats present for foraging.	Low. Associated habitat not present.
Sharp-tailed Sandpiper	*Calidris acuminata*	–	M	-	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. Associated habitat not within accommodation camp site.	Low. Associated habitat not present.

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Speckled Warbler	*Chthonicola sagittata*	V	–	None. No specific requirements or restrictions identified in BCC	42	BioNet, BCC	Ecosystem	Prefers good patches of woodland habitat with complex understorey diversity, which is limited in accommodation camp site. The potential for this species to occur within the accommodation camp site cannot be entirely discounted, as the species is known to occur within the locality and may utilise the habitats present for foraging.	Potential habitat within PCT 76 in east of site
Spotted Harrier	*Circus assimilis*	V	–	None. No specific requirements or restrictions identified in BCC	1	BioNet, BCC	Ecosystem	May occur over the accommodation camp site during local movements, but habitats are not of sufficient quality to support this species, due to a lack of habitat supporting an abundance of prey species.	Low. Associated habitat not present
Square-tailed Kite	*Lophoictinia isura*	V	–	Nest trees: The species is allocated to dual credit because they tend to be sensitive to disturbance around nests. It will be difficult to identify a Kite nest (there are lots of comparable sized stick nests built by other species), especially given Kites have large territories and other stick nesters will undoubtedly also be nesting where Kites might be recorded. Kites will need be in attendance to confirm breeding sites.	2	BioNet, BCC	Species/ Ecosystem	May occur over the accommodation camp site during locally movements, but habitats are not of sufficient quality to support this species, due to a lack of habitat supporting an abundance of small bird species.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Superb Parrot	*Polytelis swainsonii*	V	V	Hollow bearing trees: Living or dead *E. blakelyi, E. melliodora, E. albens, E. camaldulensis, E. microcarpa, E. polyanthemos, E. mannifera, E. intertexta* with hollows greater than 5cm diameter; greater than 4m above ground or trees with a DBH of greater than 30cm.	124	BCC, BioNet, PMST	Species / Ecosystem	The accommodation camp site provides foraging and breeding habitat for the species.	Recorded. Potential habitat within PCT 76 in east of site
Swift Parrot	*Lathamus discolor*	E1	CE	Hollow bearing trees	7	BCC, BioNet, PMST	Species/ Ecosystem	May occur within the accommodation camp site during seasonal movements and to utilise blossoming eucalypts. Dependent on winter flowering resources of which E.microcarpa occurs within accommodation camp site. No records locally and local resources are sparse, so occurrences are likely to be rare but cannot be discounted. Accommodation camp site is outside of species known breeding habitat.	Potential habitat within PCT 76 in east of site
Turquoise Parrot	*Neophema pulchella*	V	–	None. No specific requirements or restrictions identified in BCC	6	BioNet, BCC	Ecosystem	Local records occur within areas of higher quality woodland. The accommodation camp site provides marginal foraging habitat.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Varied Sittella	*Daphoenositta chrysoptera*	V	–	None. No specific requirements or restrictions identified in BCC	13	BioNet, BCC	Ecosystem	Prefers good patches of woodland habitat with complex understorey diversity, which is limited in the accommodation camp site. The potential for this species to occur within the accommodation camp site cannot be entirely discounted, as the species is known to occur within the locality and may utilise the habitats present for foraging.	Potential habitat within PCT 76 in east of site
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	V	-	Living or dead mature trees within suitable vegetation within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines.	0	BCC	Species/ Ecosystem	Preferred breeding and foraging habitat was not recorded within the accommodation camp site. May occur as a vagrant.	Potential habitat within PCT 76 in east of site
White-fronted Chat	*Epthianura albifrons*	V	–	None. No specific requirements or restrictions identified in BCC	4	BioNet,	Ecosystem	The accommodation camp site provides marginal foraging habitat.	Low. Associated habitat not present
White-throated Needletail	*Hirundapus caudacutus*	–	V; M	None. No specific requirements or restrictions identified in BCC	1	BioNet, PMST	–	Almost exclusively aerial. Occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings. May irregularly occur foraging over the accommodation camp site.	May irregularly occur foraging over the proposal site
Yellow Wagtail	*Motacilla flava*	–	M	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Occurs in open country near swamps, salt marshes and sewage ponds. Rare visitor to coastal areas. Associated habitat not within accommodation camp site. Unlikely to occur within the accommodation camp site.	Low. Associated habitat not present

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Fish (3)									
Macquarie Perch	*Macquaria australasica*	–	E	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Suitable habitat not recorded within the accommodation camp site.	Not considered further
Trout Cod	*Maccullochella macquariensis*	E	E	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Suitable habitat not recorded within the accommodation camp site.	Not considered further
Murray Cod	*Maccullochella peeli*	–	V	None. No specific requirements or restrictions identified in BCC	0	PMST	–	Species identified in PMST search. No records within the locality and not included in BAM-C list. Suitable habitat not recorded within the accommodation camp site. No records within the locality.	Not considered further
Mammals (14)									
Brush-tailed Phascogale	*Phascogale tapoatafa*	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Species	Suitable habitat not recorded within the accommodation camp site. No records within the locality.	Potential habitat within PCT 76 in east of site
Brush-tailed Rock-wallaby	*Petrogale penicillata*	E	V	Land within 1km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or clifflines	0	BCC	Species	Suitable habitat not recorded within the accommodation camp site. No records within the locality.	Low. Associated habitat not present
Corben's Long Eared Bat	*Nyctophilus corbeni*	V	V	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Ecosystem	Associated habitat in the form of box dominated woodlands, tree hollows and loose bark were recorded within the accommodation camp site.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Large Bentwing-bat	*Miniopterus orianae oceanensis*	V	–	Cave, tunnel, mine, culvert or other structure known or suspected to be used for breeding including species records with microhabitat with numbers of individuals >500	0	BCC	Species/ Ecosystem	Suitable habitat not recorded within the accommodation camp site. No records within the locality.	Low. Associated habitat not present
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Ecosystem	Suitable habitat not recorded within the accommodation camp site. No records within the locality.	Low. Associated habitat not present
Eastern Pygmy-possum	*Cercartetus nanus*	V	–	None. No specific requirements or restrictions identified in BCC	1	BCC, BioNet	Species	A lack of suitable patch size and quality in terms of understorey nectar-producing plants and shelter opportunities.	Low. Associated habitat not present
Grey-headed Flying-fox	*Pteropus poliocephalus*	-	V	Breeding camps	1	BCC, PMST, BioNet	Species/ Ecosystem	Not observed during nocturnal surveys, but may visit the accommodation camp site when blossom resources are scarce in other regions. Records within the locality are scarce and no camps occur nearby.	Potential habitat within PCT 76 in east of site
Koala	*Phascolarctos cinereus*	E	E	Areas identified via survey as important habitat –Important' habitat is defined by the density of koalas and quality of habitat determined by on-site survey.	1	BCC, BioNet, PMST	Species/ Ecosystem	A lack of continuity between woodland patches, patch size and sufficient foraging resources suggest that this species does not occur in the accommodation camp site. May occur randomly due to roaming movements.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Large-eared Pied Bat	*Chalinolobus dwyeri*	–	V	Cliffs within two km of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two km of old mines or tunnels	0	BCC	Species	No suitable roosting habitats associated with the accommodation camp site or its vicinity – may rarely extend to the site during foraging movements but the accommodation camp is likely to be of low importance to this species.	Low. Associated habitat not present
Little Pied Bat	*Chalinolobus picatus*	V	–	None. No specific requirements or restrictions identified in BCC	0	BCC	Ecosystem	No suitable roosting habitats associated with the accommodation camp site or its vicinity – may rarely extend to the site during foraging movements but the accommodation camp site is likely to be of low importance to this species.	Potential habitat within PCT 76 in east of site
Southern Myotis	*Myotis macropus*	V	–	Hollow bearing trees/Within 200m of riparian zone/ Bridges, caves or artificial structures within 200m of riparian zone	1	BCC, BioNet	Species	Preferred riparian foraging habitats and roosting locations are limited within the accommodation camp site, but it's presence cannot be discounted during local movements.	Low. Associated habitat not present
Spotted-tailed Quoll	*Dasyurus maculatus*	V	E	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Ecosystem	The accommodation camp site is generally outside of species known distribution.	Low. Associated habitat not present
Squirrel Glider	*Petaurus norfolcensis*	V	–	None. No specific requirements or restrictions identified in BCC	6	BCC, BioNet	Species	Potential foraging and roosting habitat within remnant vegetation.	Potential habitat within PCT 76 in east of site

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Habitat requirements/ geographic restrictions[2]	BioNet records	Source[3]	Credit type[4]	Potential habitat within I2S project area	Potential occurrence within Accommodation Camp
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	V	–	None. No specific requirements or restrictions identified in BCC	1	BCC, BioNet	Ecosystem	Potential foraging and roosting habitat within remnant vegetation.	Potential habitat within PCT 76 in east of site
Reptiles (2)									
Pink-tailed Legless Lizard	*Aprasia parapulchella*	V	V	Rocky areas or within 50m of rocky areas	0	BCC, PMST	Species	Marginal habitat (rocky outcrops, scattered rocks) were recorded within the accommodation camp site. However, this species is unlikely to occur due to a lack of high quality groundcover habitats with sufficient natural features for cover and foraging, and lack of records within the locality.	Low. Associated habitat not present
Striped Legless Lizard	*Delma impar*	–	V	None. No specific requirements or restrictions identified in BCC	0	BCC, PMST	Species	Although elements of preferred habitat were recorded within the accommodation camp site, the accommodation camp site is on the boundary of this species known distribution and hasn't historically been recorded within locality.	Low. Associated habitat not present
Invertebrates (1)									
Golden Sun Moth	*Synemon plana*	E	V	Wallaby grass (Rytidosperma sp), Chilean needlegrass (Nassella nessiana) or Serrated Tussock (Nassella trichotoma)	0	BCC	Species	Preferred natural temperate grassland not present. No Serrated Tussock grass recorded and Rytidosperma spp. had low cover. Habitat requirement not met.	Low. Associated habitat not present

(1) V = Vulnerable, E = Endangered, CE = Critically Endangered, M = Migratory

(2) Habitat requirements and geographic requirements were obtained from the BAM Credit Calculator (BCC)

(3) BCC = BAM Credit Calculator, BioNet = Office of Environment and Heritage spatial search, PlantNet = Royal Botanic gardens spatial search, PMST = Protected Matters Search Tool (Department of Agriculture, Water and the Environment)

(4) Credit types as prescribed by the BAM Credit Calculator

APPENDIX

I

Workforce accommodation camp assessment

Appendix C AHIMS Search

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 17-0169D

Client Service ID : 685162

GML Heritage Pty Ltd - Surry Hills

Level 6 372 Elizabeth Street
Surry Hills New South Wales 2010

Attention: Elise Jakeman

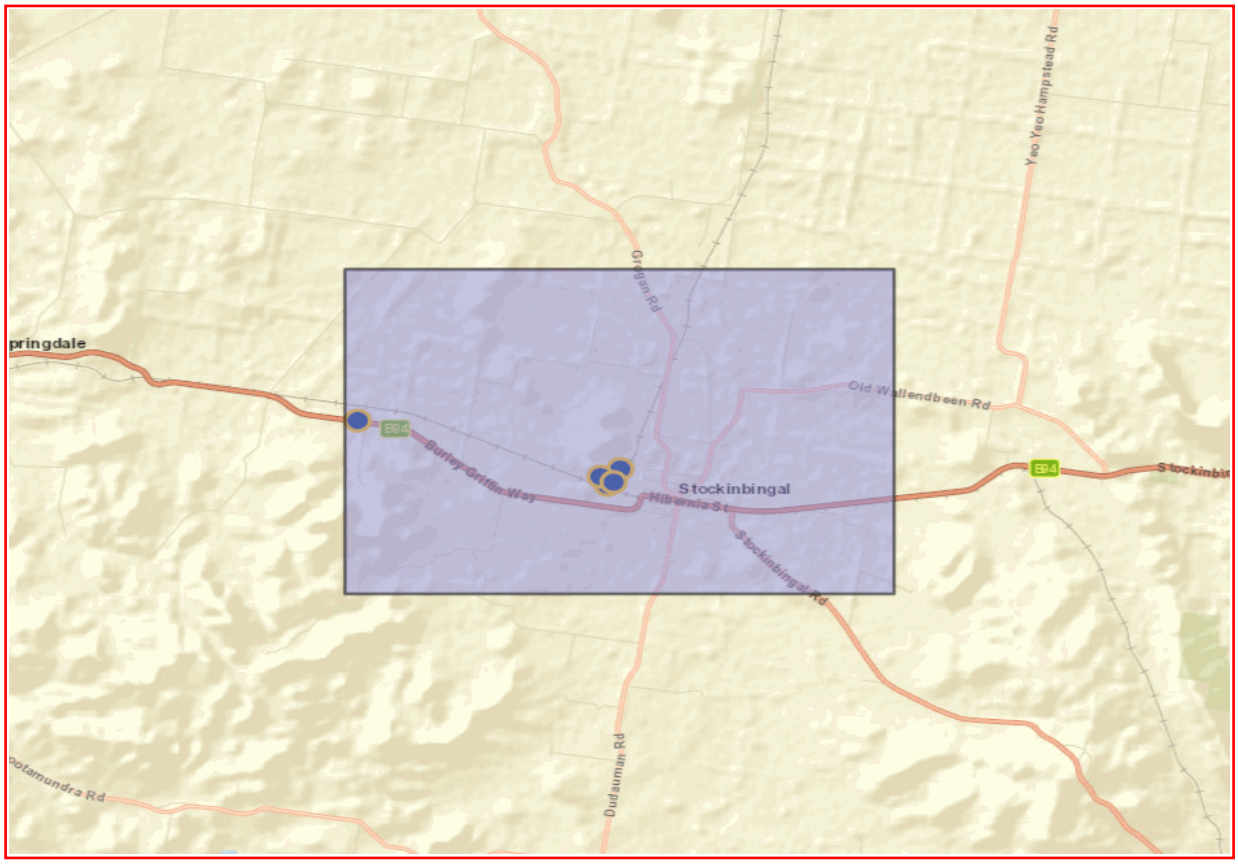
Email: elisej@gml.com.au

Date: 24 May 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -34.5208, 147.8064 - Lat, Long To : -34.4501, 147.93, conducted by Elise Jakeman on 24 May 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

6	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

APPENDIX I

Workforce accommodation camp assessment

Appendix D EPA database searches and historical aerial imagery

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

Search results

Your search for:Suburb: STOCKINBINGAL

Search Again
Refine Search

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

18 May 2022

For business and industry

For local government

Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

in
(https://au.linkedin.com/com
environment-
protection-
authority-

Search results

Your search for: **General Search** with the following criteria

Suburb - Stockinbingal

returned 0 result

Search Again

For business and industry

For local government

Contact us

131 555 (tel:131555)

Online (https://yoursay.epa.nsw.gov.au/epa-website-feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

in
(https://au.linkedin.com/com
environment-
protection-
authority-

APPENDIX

I

Workforce accommodation camp assessment

Appendix E Social impacts matrix

Table E.1 provides an assessment of the significance of each impact (rating), as per DPE's *Social Impact Assessment Guideline* (2021). Each impact was rated before and after mitigation/enhancement measures are applied. Refer to Chapter 17 (Social and economic) of the EIS for more details on the rating process.

Table E.1 Social impacts matrix

Impact	Cumulative	Impact category	Nature	Likelihood	Extent	Duration	Severity or scale	Sensitivity/ importance	Level of concern/ interest	Magnitude	Rating pre-mitigation	Rating post-mitigation
Construction of accommodation camp												
Impacts to amenity during construction (including noise, visual and air quality impacts)	Yes	Health and wellbeing Way of life	Negative	Possible	Residents surrounding the accommodation camp	Temporary – construction	Minor	Moderate	Unknown	Minor	**Medium (C2)**	**Medium (C1)**
Road safety impacts due to construction traffic (oversized loads etc.)	Yes	Accessibility Way of life Amenity	Negative	Possible	Local and regional road users Residents living in proximity to proposed haulage and construction routes Tourists and visitors Pedestrians	Temporary – construction	Moderate	Major	Moderate	Moderate	**Medium (C3)**	**Medium (C2)**
Economic benefits for the broader community	Yes	Livelihoods	Positive	Possible	Local and regional residents Local and regional businesses and suppliers Local employees or those seeking employment/construction industries	Temporary – construction	Minor	Minor	Unknown	Minor	**Medium (C2)**	**Medium (B2)**

Impact	Cumulative	Impact category	Nature	Likelihood	Extent	Duration	Severity or scale	Sensitivity/ importance	Level of concern/ interest	Magnitude	Rating pre-mitigation	Rating post-mitigation
Operation of accommodation camp												
Less demand for and pressure on short term and long-term accommodation in the local and regional area	Yes	Way of life Livelihoods	Positive	Likely	Short term/tourist accommodation providers Tourists and visitors to the region Local renters and those seeking housing Vulnerable community members such as lower-socio economic households and those effected by disasters (flooding, bushfire etc.) Local real estate industry Local agricultural industry and seasonal workers	Temporary	Major	Moderate	Moderate	Moderate	**High (B3)**	**N/A**
Social cohesion and safety concerns/ perceptions associated with an influx of non-resident workforce to the community	Yes	Health and wellbeing	Negative	Possible	Residents of Stockinbingal, Cootamundra and Temora and surrounds (especially vulnerable groups and women) Local businesses Local emergency services (police and ambulance)	Temporary	Moderate	Moderate	Moderate	Moderate	**Medium (C3)**	**Low (D2)**

Impact	Cumulative	Impact category	Nature	Likelihood	Extent	Duration	Severity or scale	Sensitivity/ importance	Level of concern/ interest	Magnitude	Rating pre-mitigation	Rating post-mitigation
Impacts to amenity, sense of place and privacy	Yes	Surroundings	Negative	Unlikely	Residents surrounding the accommodation camp and receivers identified in Noise Impact Assessment section	Temporary	Minor	Moderate	Unknown	Minor	**Low (D2)**	**Low (D1)**
Road safety impacts due to increased workforce traffic movements	Yes	Accessibility Amenity Way of life	Negative	Possible	Local and regional road users Residents living in proximity to proposed workforce routes Tourists and visitors Pedestrians particularly in townships	Temporary	Moderate	Major	Moderate	Moderate	**Medium (C3)**	**Medium (D3)**
Economic benefits for local businesses and services in the community	Yes	Livelihoods	Positive	Possible	Local businesses in local towns Local employees or those seeking employment Local residents	Temporary	Moderate	Moderate	Unknown	Moderate	**Medium (C3)**	**High (B3)**
Increased demand on local social and health services, and potential impacts on capacity	Yes	Health and wellbeing	Negative	Possible	Local services Local residents	Temporary	Minor	Moderate	Moderate	Minor	**Medium (C2)**	**Low (D2)**

APPENDIX I

Workforce accommodation camp assessment

Appendix F Flooding maps

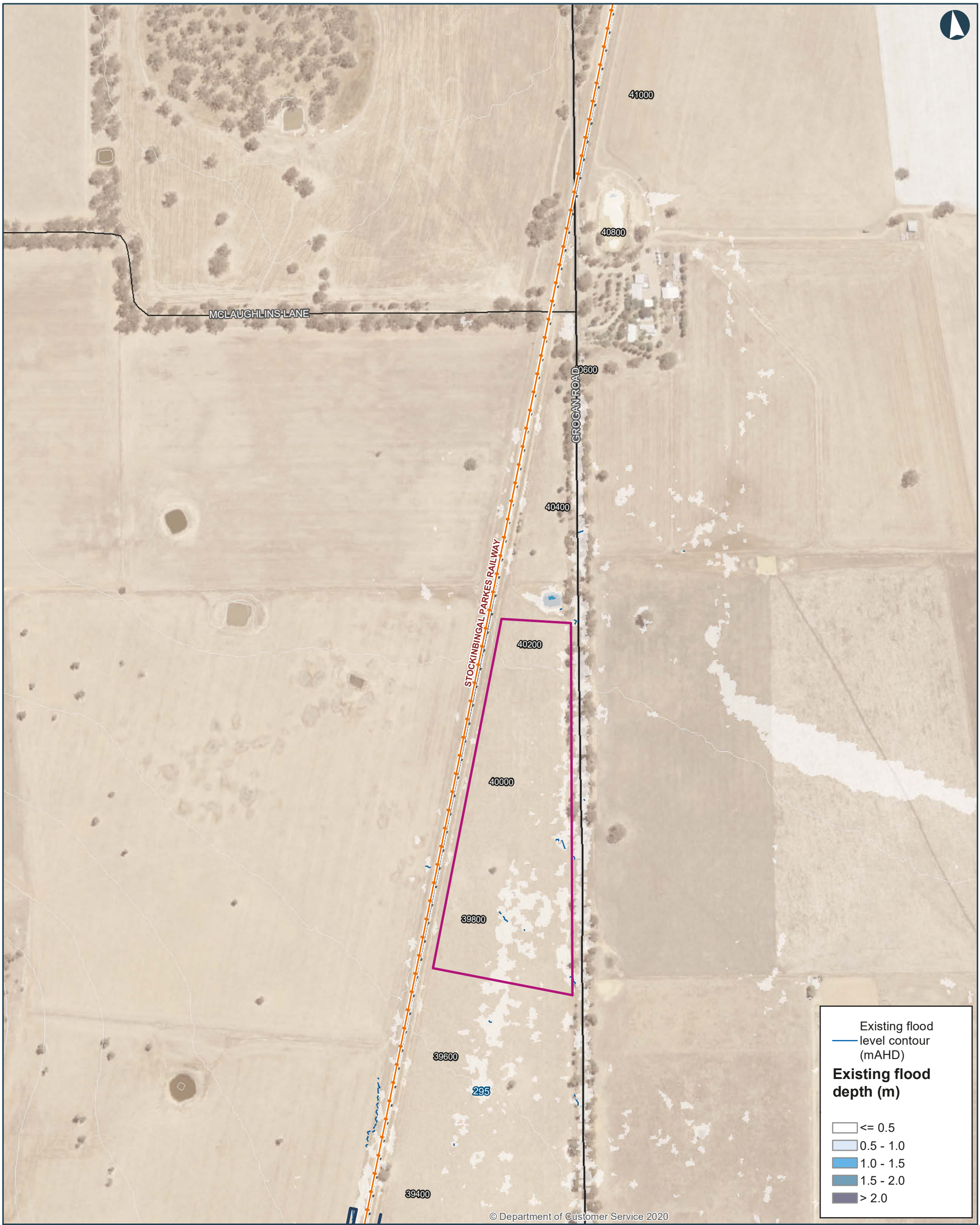


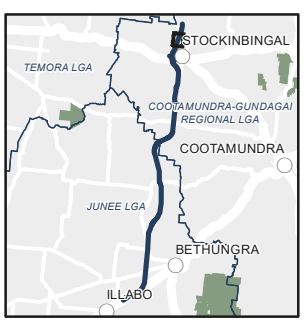
Figure 1 0.2EY Existing Flood Depths and Levels

0 50 100 Metres

Coordinate System: GDA 1994 MGA Zone 55

Date: 6/6/2022 Paper: A3
Author: IRDJV Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI

- Proposal site
- Chainage (distance n metres from southern limit of the proposal) (40950)
- New track/track upgrade
- Proposed Accommodation Camp Boundary
- Overbridge
- Underbridge
- Culvert
- 5m Contours
- Existing Rail
- Minor watercourse (Strahler SO 1-3)
- Major watercourse (Strahler SO 4-6)
- Local road
- Sub-arterial road
- Arterial road



INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

G:\Projects\PS108286_I2S\Tasks\220_0117_ENV_AccommodationAssessment\Documents\Specialists\Hydrology\220_0117_HYD03_0_2EYExistingDepth_v2.mxd

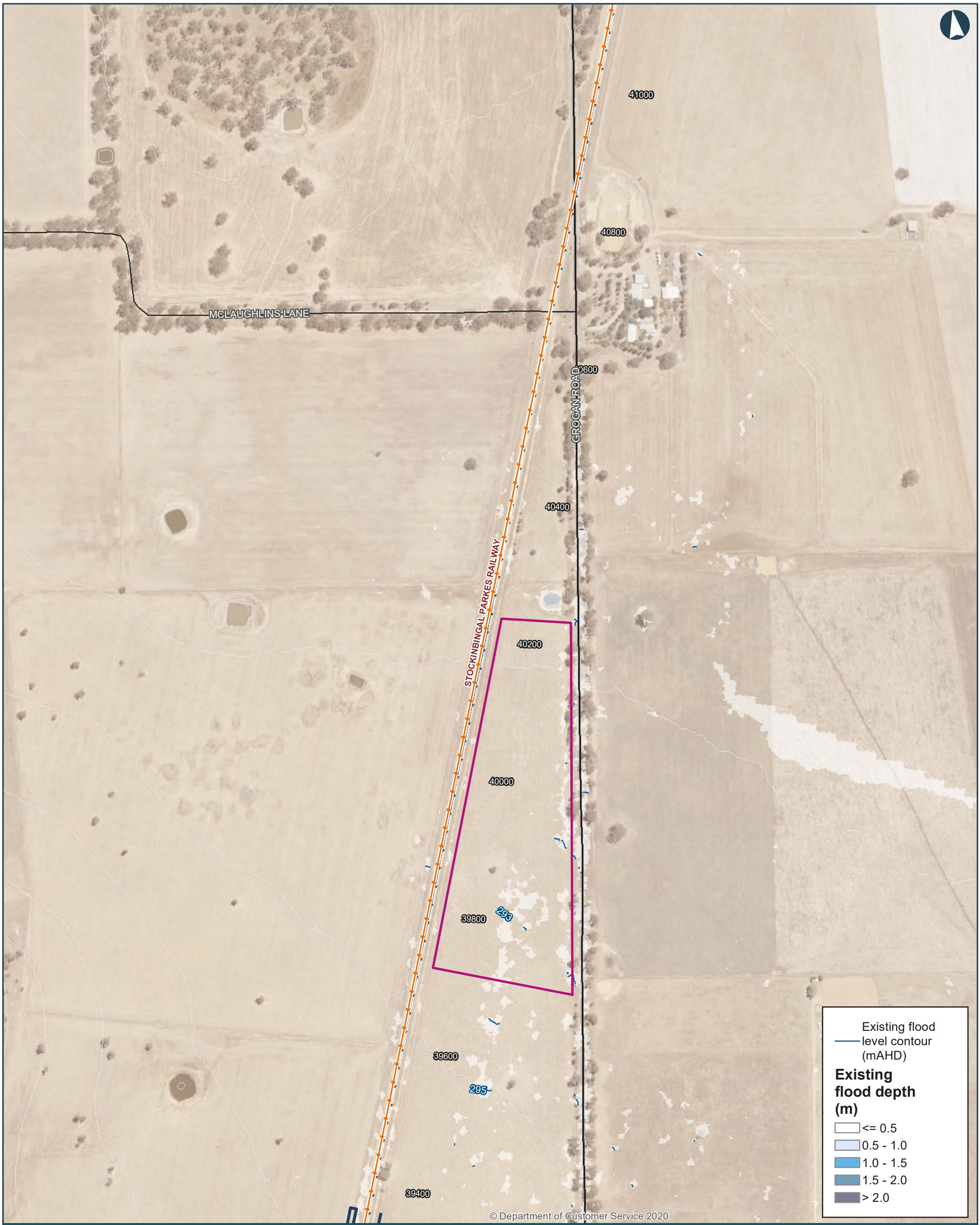


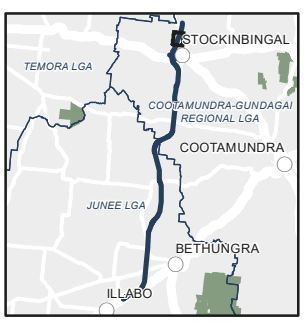
Figure 2 10% AEP Existing Flood Depths and Levels

0 50 100 Metres

Coordinate System: GDA 1994 MGA Zone 55

Date: 6/6/2022 Paper: A3
Author: IRDJV Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI

- Proposal site
- 40950 Chainage (distance n metres from southern limit of the proposal)
- New track/track upgrade
- Proposed Accommodation Camp Boundary
- B Overbridge
- B Underbridge
- Culvert
- 5m Contours
- Existing Rail
- Minor watercourse (Strahler SO 1-3)
- Major watercourse (Strahler SO 4-6)
- Local road
- Sub-arterial road
- Arterial road



INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

G:\Projects\PS108286_I2S\Tasks\220_0117_ENV_AccommodationAssessment\Documents\Specialists\Hydrology\220_0117_HYD04_10AEPExistingDepth_v2.mxd

MCLAUGHLINS LANE
GROGAN ROAD
STOCKINBINGAL PARKES RAILWAY
41000
40800
40600
40400
40200
40000
39800
39600
39400
293
294
295
© Department of Customer Service 2020

Existing flood level contour (mAHD)

Existing flood depth (m)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- > 2.0

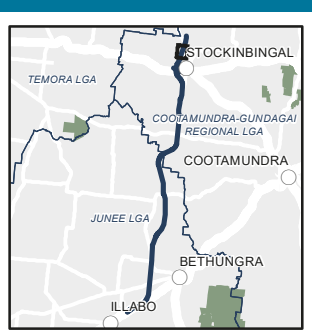
Figure 3 1% AEP Existing Flood Depths and Levels

0 50 100 Metres

Coordinate System: GDA 1994 MGA Zone 55

Date: 6/6/2022 Paper: A3
Author: IRDJV Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI

- Proposal site
- 40950 Chainage (distance n metres from southern limit of the proposal)
- New track/track upgrade
- Proposed Accommodation Camp Boundary
- B Overbridge
- B Underbridge
- Culvert
- 5m Contours
- Existing Rail
- Minor watercourse (Strahler SO 1-3)
- Major watercourse (Strahler SO 4-6)
- Local road
- Sub-arterial road
- Arterial road



INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

G:\Projects\PS108286_I2S\Tasks\220_0117_ENV_AccommodationAssessment\Documents\Specialists\Hydrology\220_0117_HYD05_1AEPExistingDepth_v2.mxd

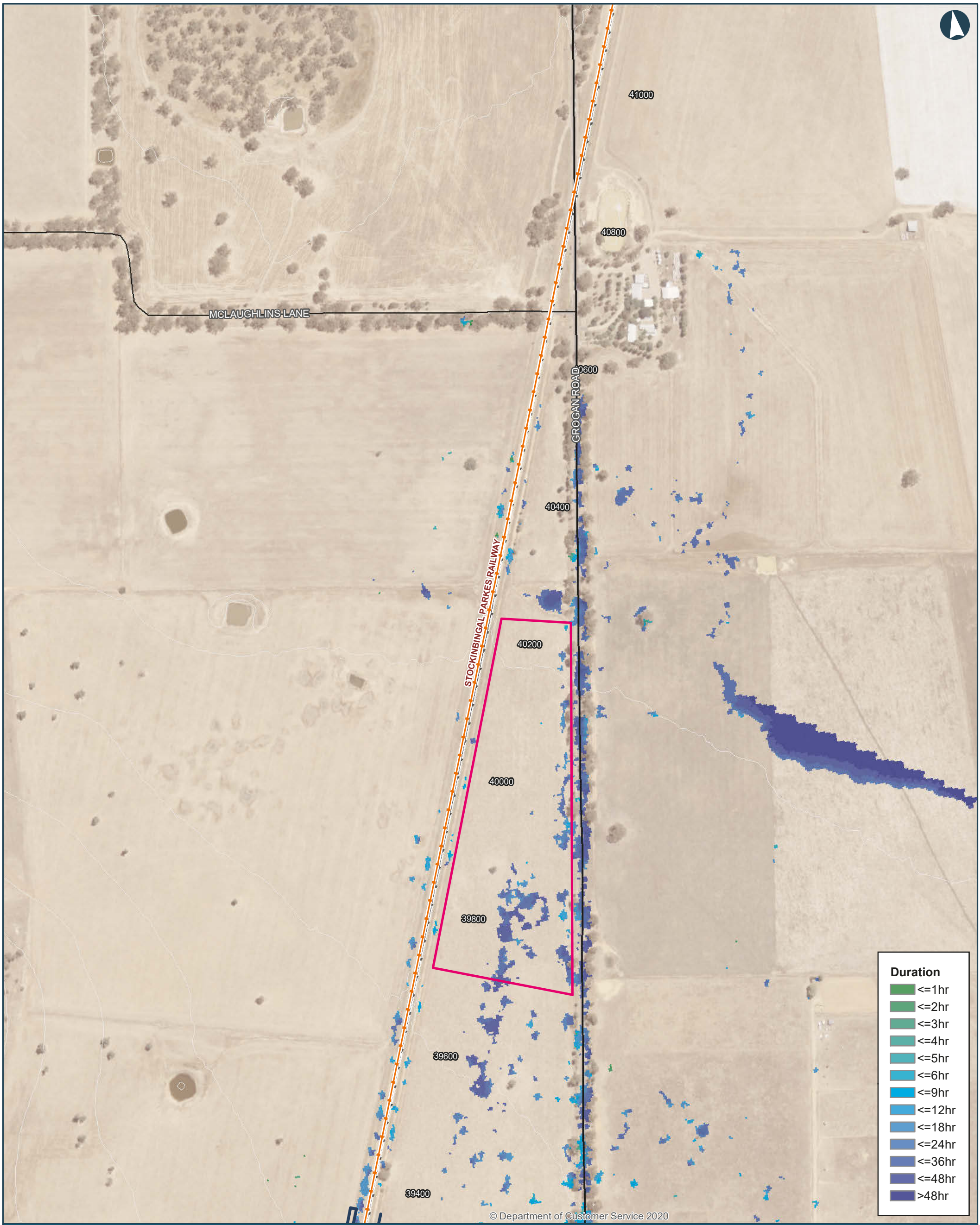


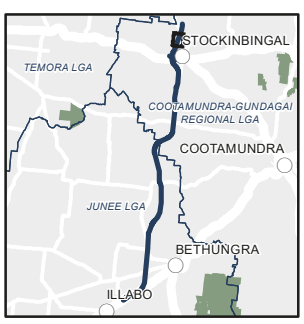
Figure 4 10% AEP Flood Existing Duration

0 50 100 Metres

Coordinate System: GDA 1994 MGA Zone 55

Date: 6/6/2022 Paper: A3
Author: IRDJV Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI

- Proposal site
- 40950 Chainage (distance n metres from southern limit of the proposal)
- New track/track upgrade
- Proposed Accommodation Camp Boundary
- B Overbridge
- B Underbridge
- Culvert
- 5m Contours
- Existing Rail
- Minor watercourse (Strahler SO 1-3)
- Major watercourse (Strahler SO 4-6)
- Local road
- Sub-arterial road
- Arterial road



INLAND RAIL ARTC

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

G:\Projects\PS108286_I2S\Tasks\220_0117_ENV_AccommodationAssessment\Documents\Specialists\Hydrology\220_0117_HYD06_10AEPExistingDuration_v2.mxd